

SITE CERTIFICATION  
APPLICATION

**THE CEDAR BAY COGENERATION  
PROJECT**

VOLUME 3

Submitted by  Cedar Bay Inc.

10.0 APPENDICES

10.1 FEDERAL PERMIT APPLICATIONS OR APPROVALS

10.1.1 NPDES Application/Permit

FORM <b>1</b> GENERAL		U.S. ENVIRONMENTAL PROTECTION AGENCY <b>GENERAL INFORMATION</b> <i>Consolidated Permits Program</i> <i>(Read the "General Instructions" before starting.)</i>	I. EPA I.D. NUMBER 6 F 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
LABEL ITEMS		GENERAL INSTRUCTIONS	
I. EPA I.D. NUMBER	II. FACILITY NAME	<b>PLEASE PLACE LABEL IN THIS SPACE</b>	
V. FACILITY MAILING ADDRESS	VI. FACILITY LOCATION		
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 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	
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**

C	1 SKIP	CEDAR BAY COGENERATION PROJECT
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**IV. FACILITY CONTACT**

<b>A. NAME &amp; TITLE (last, first, &amp; title)</b>	<b>B. PHONE (area code &amp; no.)</b>
2 SWAIN, JEFFREY PROJECT DIRECTR	703 522 1315

**V. FACILITY MAILING ADDRESS**

<b>A. STREET OR P.O. BOX</b>	<b>B. CITY OR TOWN</b>	<b>C. STATE</b>	<b>D. ZIP CODE</b>
3 1001 NORTH 19th ST. SUITE 2000	ARLINGTON	VA	22209

**VI. FACILITY LOCATION**

<b>A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER</b>	<b>B. COUNTY NAME</b>	<b>C. CITY OR TOWN</b>	<b>D. STATE</b>	<b>E. ZIP CODE</b>	<b>F. COUNTY CODE (if known)</b>
5 9469 EASTPORT RD	DUVAL	JACKSONVILLE	FL	32218	

VII. SIC CODES (4-digit, in order of priority)

A. FIRST		B. SECOND	
7 4 9 1 3 (specify)	Electric Services	7 4 9 6 1 (specify)	Steam Supply
C. THIRD		D. FOURTH	
(specify)		(specify)	

OPERATOR INFORMATION

A. NAME		B. Is the name listed in Item VIII-A also the Owner?
8 A E S C E D A R B A Y I N C		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other", specify.)		D. PHONE (area code & no.)
F - FEDERAL S - STATE P - PRIVATE	M - PUBLIC (other than federal or state) O - OTHER (specify)	7 0 3 5 5 2 1 3 1 5
E. STREET OR P.O. BOX		
1 0 0 1 N O R T H 1 9 t h S T S U I T E 2 0 0 0 0		
F. CITY OR TOWN		G. STATE H. ZIP CODE
B A R L I N G T O N		V A 2 2 2 0 9
		IX. INDIAN LAND Is the facility located on Indian lands? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPOES (Discharges to Surface Water)		D. PSD (Air Emissions from Proposed Sources)	
9 N N A		9 P N A	
B. UIC (Underground Injection of Fluids)		E. OTHER (specify)	
9 U N A		(specify)	
C. RCRA (Hazardous Wastes)		E. OTHER (specify)	
9 R N A		(specify)	

**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. See Figures 2.2-2 and 3.2-3 of the SCA.

XII. NATURE OF BUSINESS (provide a brief description)

The Cedar Bay Cogeneration Project will include three fluidized bed coal-fired combustion boilers. The facility will produce approximately 225 MW of electricity for sale to Florida Power & Light and 640,000 lb/hr of process steam for sale to Seminole Kraft Corporation for paper production.

XIII. CERTIFICATION (see instructions)

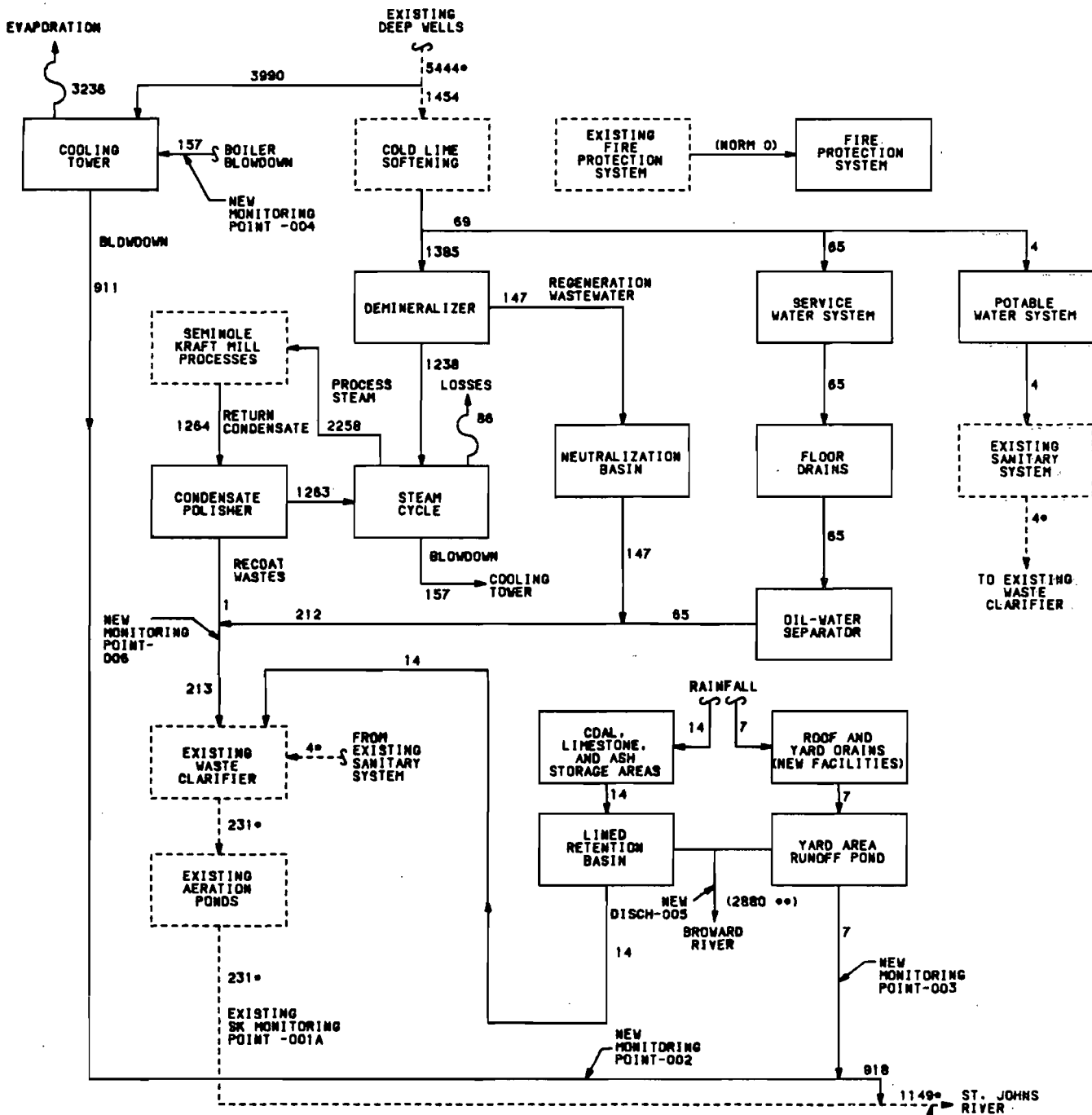
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information 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
Jeffrey V. Swain, Vice President	<i>Jeffrey V. Swain</i>	10-9-89

COMMENTS FOR OFFICIAL USE ONLY

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NOTES:

1. FLOWS ARE ESTIMATED ANNUAL AVERAGES EXPRESSED IN 1000 GALLONS PER DAY FOR 100 PERCENT LOAD.
2. SOLID LINES REPRESENT NEW EQUIPMENT OR PIPELINES.
3. DASHED LINES REPRESENT EXISTING EQUIPMENT OR PIPELINES.
- \* AMOUNT OF FLOW ATTRIBUTABLE TO CEDAR BAY COGENERATION PROJECT
- \*\* CONSTRUCTION DEWATERING. FLOW WILL OCCUR ONLY DURING CONSTRUCTION.

WATER MASS BALANCE

Amendment 1  
021089  
Amendment 2  
070789



B. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item III-A. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g., for certain mining activities), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures. See Figure 3.5-1 of SCA.

C. Except for storm runoff, leaks, or spills, will any of the discharges described in item III-A be intermittent or seasonal?

Yes (complete the following table)       No (go to item IV)

Outfall Number	1. Frequency		2. Flow		
	a. Days Per Week (specify average)	b. Months Per Year (specify average)	a. Maximum Daily Flow Rate (in mgd)	b. Maximum Total Volume (specify with units)	c. Duration (in days)
006 Cycle makeup Demineralization	7	12	0.166	167,000 gal	0.257
006 Condensate polishing	2	12	0.0025	2,500 gal	0.333

**IV. Production**

If there is an applicable production-based effluent guideline or NSPS, for each outfall list the estimated level of production (projection of actual production level, not design), expressed in the terms and units used in the applicable effluent guideline or NSPS, for each of the first 3 years of operation. If production is likely to vary, you may also submit alternative estimates (attach a separate sheet).

Year	a. Quantity Per Day	b. Units of Measure	c. Operation, Product, Material, etc (specify)
N/A			



C. Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

1. Pollutant	2. Reason for Discharge

#### VI. Engineering Report on Wastewater Treatment

A. If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below.

Report Available

No Report

B. Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name	Location

**VII. Other Information (Optional)**

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

**VIII. 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.*

<p>Name and Official Title (type or print)</p> <p><i>Thomas A. Tribone Vice President for</i>                  Jeffrey V. Swain, Vice President</p>	<p>B. Phone No.</p> <p>703-522-1315</p>
<p>C. Signature</p> <p><i>J. V. Swain</i></p>	<p>D. Date Signed</p> <p>7/6/09</p>



C. Use the space below to list any of the pollutants listed in Table 2D-3 of the instructions which you know or have reason to believe will be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it will be present.

1. Pollutant	2. Reason for Discharge

VI. Engineering Report on Wastewater Treatment

A. If there is any technical evaluation concerning your wastewater treatment, including engineering reports or pilot plant studies, check the appropriate box below.

Report Available       No Report

B. Provide the name and location of any existing plant(s) which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater treatments.

Name	Location



VII. Other Information (Optional)

Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

VIII. 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.

A. Name and Official Title (type or print) JEFFREY V. SWAIN, VICE PRESIDENT	B. Phone No. 703-522-1315
Signature <i>Jeffrey V. Swain</i>	D. Date Signed 10-25-88

10.1.2 Section 10 or 404 Application/Permit



Adjoining Property Owners

Seminole Kraft Corp.  
c/o Stone Container Corp.  
150 N. Michigan Avenue  
Chicago, Illinois 60601

Zion Jacksonville Limited Partnership  
c/o Abraham Zion  
41 Madison Avenue  
New York, New York 10010

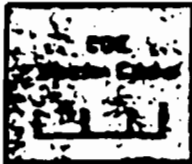
Gulf Products Division  
SOHIO Oil Company  
P. O. Box 26038  
2101 Heckscher Drive  
Jacksonville, FL 32218

BEST AVAILABLE COPY

7. DESCRIPTION OF PROJECT (Use additional sheets, if necessary)

A. Structures: 1. New work [X] Maintenance of existing structure [ ]

2. Piers, docks and uses: Commercial [X] Private [ ] Public [ ]



a. Single pier [ ] length \_\_\_\_\_ width \_\_\_\_\_

b. Number of piers [ ] length \_\_\_\_\_ width \_\_\_\_\_

c. Number of boat slips [ ] length \_\_\_\_\_ width \_\_\_\_\_

d. Number of finger piers [ ] length \_\_\_\_\_ width \_\_\_\_\_

e. Other (please describe) 2-pile bents every 30 feet along alignment to support overhead conveyor system

3. Seawalls, revetments, bulkheads: length \_\_\_\_\_

a. Type: Vertical [ ] Riprap [ ] Slope: \_\_\_\_\_ Horizontal: \_\_\_\_\_ Vertical

b. Material to be used \_\_\_\_\_

4. Other type of structure Mooring Dolphin & Pile Supported Coal Bin or Barge Unloader

B. Excavation or Dredging: New Work [X] Maintenance work [ ] Total acreage involved 2.6

1. Access Channel [X] or Canal [ ] Length 1,800 ft. Width 50 ft. Depth 4 ft.

2. Boat Basin [ ] or Boat Slip [ ] Length \_\_\_\_\_ ft. Width \_\_\_\_\_ ft. Depth \_\_\_\_\_ ft.

3. Other \_\_\_\_\_ Length \_\_\_\_\_ ft. Width \_\_\_\_\_ ft. Depth \_\_\_\_\_ ft.

4. Cubic yards: Total for project 9,000

a. 9,000 cyd. waterward/ \_\_\_\_\_ cyd. landward of ordinary/mean high water

b. Type of material to be excavated/dredged Sands & Clays  
All dredged material will be disposed of in the existing, leveed Quarantine

C. Fill: Island Dredged Material Disposal site operated by the Port of Jacksonville.

1. Amount of material

a. Cubic yards placed waterward of ordinary/mean high water No fill activities proposed

b. Cubic yards placed landward of ordinary/mean high water \_\_\_\_\_

c. Total acreage to be filled \_\_\_\_\_ Total acreage of wetlands involved \_\_\_\_\_

2. Containment for fill

a. Dikes [ ] b. Seawall, etc. [ ] c. Other (please explain) \_\_\_\_\_

3. Type of fill material to be used \_\_\_\_\_

4. Source of fill material to be used \_\_\_\_\_

DEB  
Code  
253  
483

8. Date activity is proposed to commence 1-1-90 ; to be completed 12-31-91

9. Previous permits for this project have been DER # Corps #  
A. Denied (date) \_\_\_\_\_  
B. Issued (date) \_\_\_\_\_ N/A \_\_\_\_\_  
C. Other (please explain) \_\_\_\_\_  
Differentiate between existing work and proposed work on the drawings.

10. Remarks (See Instruction Pamphlet for additional information required for all applications and certain activities. Use additional sheets if necessary.)  
Refer to attached figures for conceptual design details.

11. AFFIDAVIT OF OWNERSHIP OR CONTROL of the property on which the proposed project is to be undertaken  
I CERTIFY THAT: (please check appropriate space)  
[ ] I am the record owner, lessee, or record easement holder of the property described below.  
[X] I am not the record owner, lessee, or record easement holder of the property described below, but I will have before undertaking the proposed work the requisite property interest. (Please explain what the interest will be and how it will be acquired.)

LEGAL DESCRIPTION OF PROPERTY SITUATED IN Duval COUNTY, FLORIDA  
(Use additional sheets if necessary)

A lease arrangement is planned with Gulf Oil and the Board of Trustees of the Florida DNR's Internal Improvement Trust Fund. An easement for crossing Highway 105 (Heckscher Drive) will be acquired as necessary. A legal description of applicable property will be provided upon final definition.

[Signature]  
Signature

Sworn and subscribed before me at ARLINGTON County,  
VA this 25th day of OCTOBER, 1988

[Signature]  
NOTARY PUBLIC

My commission expires: \_\_\_\_\_  
Notary Public, Commonwealth of Virginia  
My Commission Expires May 26, 1990

12. Application is made for a permit(s) to authorize the activities described herein.

- A. I authorize the agent listed in Item #2 to negotiate modifications or revisions, when necessary, and accept or assent to any stipulations on my behalf.
- B. I understand I may have to provide any additional information/data that may be necessary to provide reasonable assurance or evidence to show that the proposed project will comply with the applicable State Water Quality Standards or other environmental standards both before construction and after the project is completed.
- C. In addition, I agree to provide entry to the project site for inspectors with proper identification or documents as required by law from the environmental agencies for the purpose of making preliminary analyses of the site. Further, I agree to provide entry to the project site for such inspectors to monitor permitted work if a permit is granted.
- D. Further, I hereby acknowledge the obligation and responsibility for obtaining all of the required state, federal or local permits before commencement of construction activities. I also understand that before commencement of this proposed project I must be granted separate permits or authorizations from the U.S. Corps of Engineers, the U.S. Coast Guard, the Department of Environmental Regulation, and the Department of Natural Resources, as necessary.

I CERTIFY that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities.

  
Signature of Applicant

10-25-88  
Date

**NOTE:** THIS APPLICATION MUST BE SIGNED by the person who desires to undertake the proposed activity or by an authorized agent. If an agent is applying on behalf of the applicant, attach proof of authority for the agent to sign and bind the applicant.

18 U.S.C. Section 1001 provides that: Whoever in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both.

**NOTICE TO PERMIT APPLICANTS**

This is a Joint Application; it is NOT a Joint Permit!

You Must Obtain All Required Local, State, and Federal

Authorizations or Permits Before Commencing Work!

For your information: Section 370.034, Florida Statutes, requires that all dredge and fill equipment owned, used, leased, rented or operated in the state shall be registered with the Department of Natural Resources. Before selecting your contractor or equipment you may wish to determine if this requirement has been met. For further information, contact the Chief of the Bureau of Licenses and Motorboat Registration, Department of Natural Resources, 3900 Commonwealth Boulevard, Tallahassee, Florida 32303. Telephone Number 904/488-1195. THIS IS NOT A REQUIREMENT FOR A PERMIT FROM THE DEPARTMENT OF ENVIRONMENTAL REGULATION.

10.1.2 Section 10 or 404 Application/Permit

(Deleted)



### 10.1.3 Prevention of Significant Deterioration

All required components of the Prevention of Significant Deterioration (PSD) permit application are contained in Sections 2.3.7 (Meteorology and Ambient Air Quality), 3.3 (Fuel), 3.4 (Air Emissions and Controls), 3.9 (Materials Handling), and 5.6 (Air Quality Impacts). Completed permit application forms for DER permits to construct air pollution sources are included in Appendix 10.6.1.

#### 10.1.4 Coastal Zone Management Certification

As part of Florida's Coastal Management Program federal consistency procedures (15 CFR 93.50), all federal permits for which there are no corresponding state permits require certification of compliance with the Florida Coastal Management Program (FCMP). For this project, two such federal permits or approvals are necessary. These are the US Department of Transportation, Federal Aviation Administration (FAA) approval for stack construction, and the USEPA NPDES permit for process wastewater discharge and stormwater runoff.

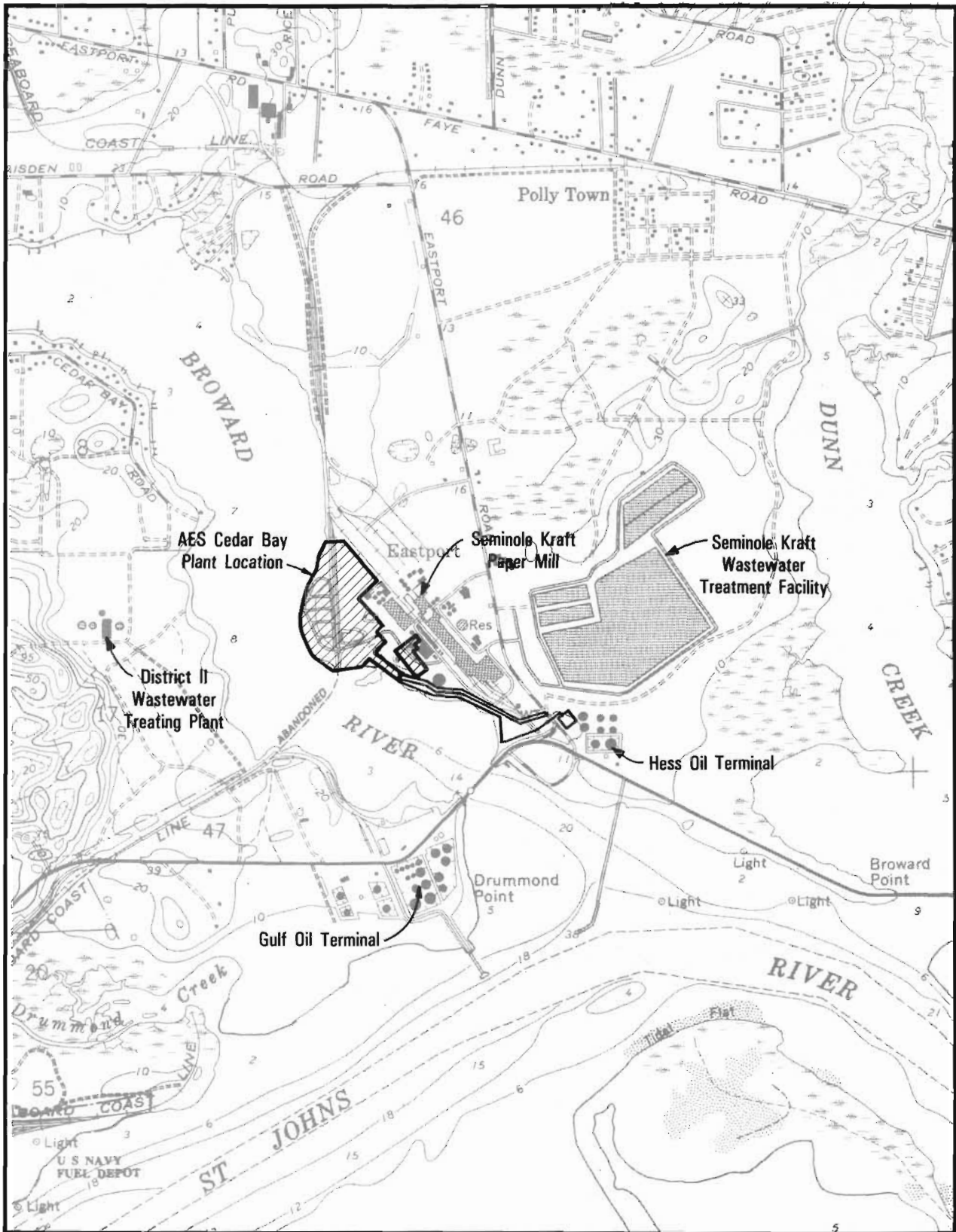
The Federal Consistency Evaluation Procedures require these permit applications to be accompanied by a consistency certification attachment which includes the following.

- A written and pictorial description of the project.
- An assessment of probable impacts relevant to applicable FCMP statutes.
- A signed statement by the applicant regarding consistency of the project with FCMP statutes.

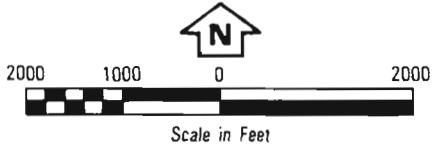
In accordance with FCMP consistency evaluation procedures, the certification package and permit application must be sent to the appropriate federal agencies (FAA and EPA) and Coordinator of the Florida State Planning and Development Clearinghouse, DER. Copies of the permit applications (except FAA) and certifications are included in this appendix.

10.1.4.1 Description of the Project. The AES Cedar Bay Cogeneration Project is an integrated power complex to be built on an existing industrial site in Jacksonville, Florida (Figure 10.1-5). The cogeneration plant will produce 225 MW of electricity for sale to Florida Power and Light Company (FP&L) as well as process steam for sale to the adjacent Seminole Kraft Corporation paper mill. The project also includes installation of a new kraft recovery boiler system required to modernize the paper mill (Figure 10.1-6).

The proposed cogeneration plant will burn fuel made up of approximately 96 percent coal and 4 percent bark in three circulating fluidized bed (CFB boilers). These technically advanced boilers produce steam at



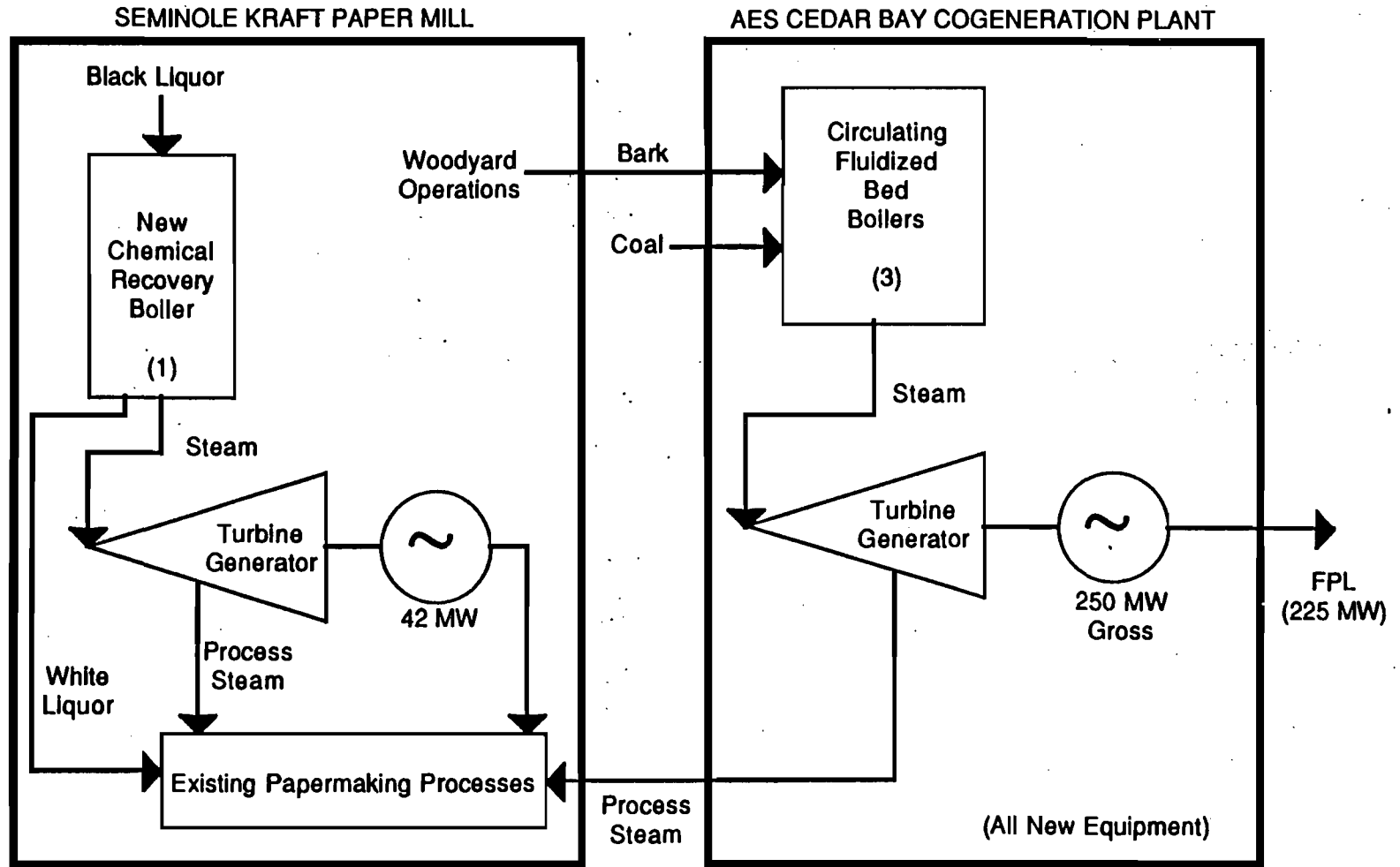
3



**SITE LOCATION**  
Figure 10.1-5

Amendment 1  
021089  
Amendment 3  
080289

### AES Cedar Bay Cogeneration Project, Jacksonville, Florida



Note : Seminole Kraft does not currently sell any of their electricity, and has no plans to do so in the future.  
 Approximately 10% of AES Cedar Bay's gross generation will be consumed internally to run the plant equipment.

SCHMATIC OF NEW FACILITY

Figure 10.1-6

1,800 pounds per square inch gauge (psig) for a new double automatic extraction condensing turbine generator. This process will generate 225 MW as well as 640,000 lb/h of 175 psig and 75 psig process steam for the mill. These boilers will be owned and operated by AES-CB (Figure 10.1-7).

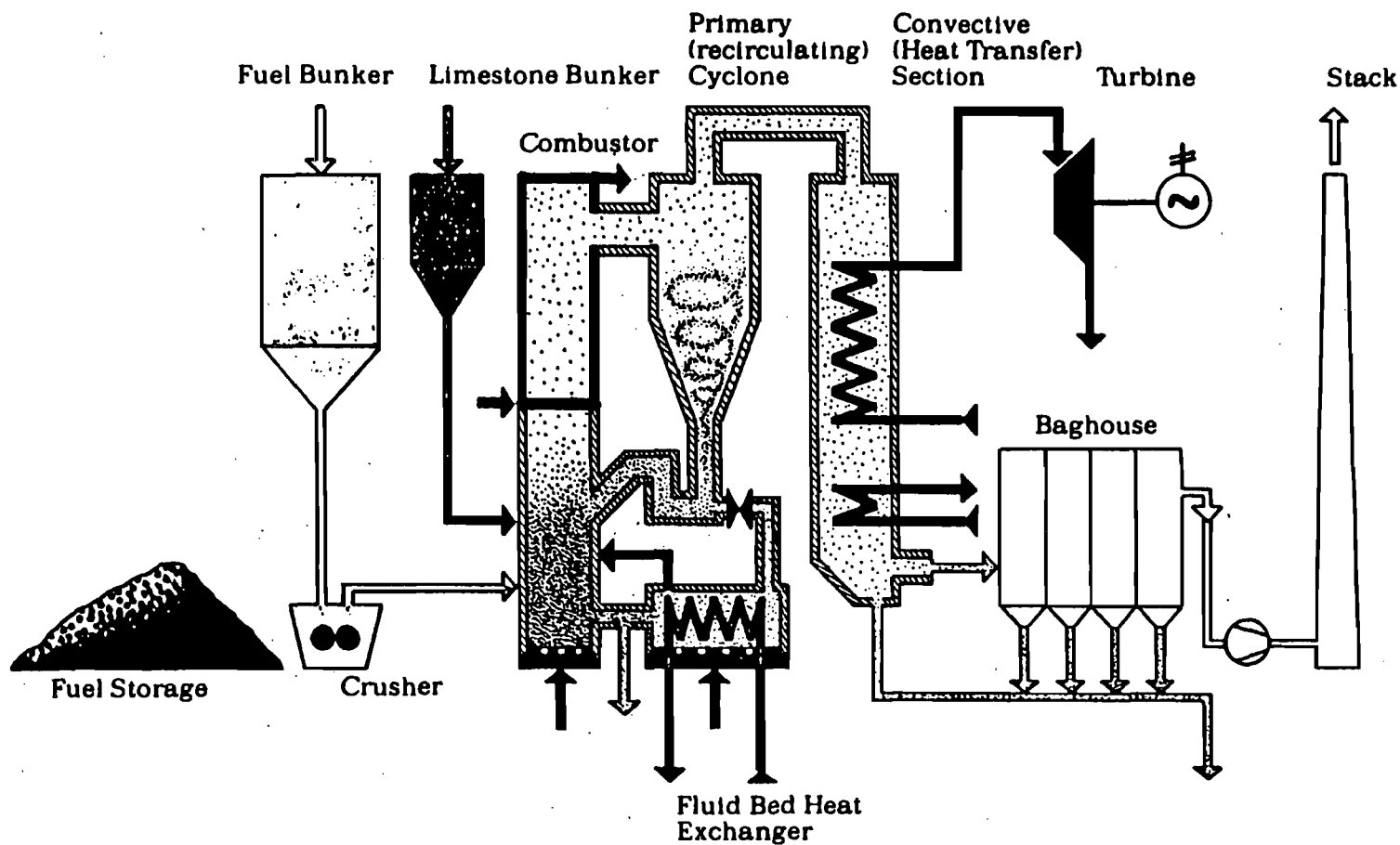
The new Kraft black liquor recovery boiler (KRB) system, owned and operated by Seminole Kraft, will burn black liquor solids, and produce 1,250 psig steam, replacing the three existing recovery boilers. A new automatic extraction condensing turbine generator will generate 42 MW of electric power for internal mill consumption as well as 600 psig and 175 psig steam for the kraft mill processes. The existing multiple effect evaporators and smelt dissolving tanks will also be replaced as a part of this project.

Offsets from the elimination and replacement of older, less environmentally efficient equipment at the mill will result in a number of environmental improvements. Eight existing boilers at the mill will be shut down: three oil-fired and two bark-fired power boilers and three kraft recovery boilers. The new CFB boilers will replace the power boilers process steam generation and the old kraft recovery boilers will be replaced with a modern low-odor unit.

Coal will be delivered by rail, and a rail spur to the north of the site may be necessary.

Ash from the combustion process will be pelletized by AES-CB and disposed out of state by the coal supplier. This material is also potentially marketable in the engineering materials industry. This ash is not a hazardous material, and impacts on the environment are expected to be minimal.

### Typical Flow Chart for a Circulating Fluidized Bed Boiler System



TYPICAL FLOW CHART FOR A CFB BOILER

Figure 10.1-7

Trash and other solid waste will be disposed of at an approved facility. A licensed contractor will be responsible for treatment and disposal of boiler cleaning wastes.

During the peak year of construction, an average of over 630 jobs will be created by the project. The net direct employment effect will be the creation of 58 full-time positions for the operating life of the plant. A consent decree between Seminole Kraft, the Florida Department of Environmental Regulation, and the Jacksonville Bio-Environmental Services Division exists requiring compliance by the mill with the TRS New Source Performance Standards by November of 1992. The Cedar Bay Cogeneration Project will provide the new KRB, allowing Seminole Kraft to continue operation in compliance with these standards. In effect, the project significantly contributes to the continued viability of the paper mill.

Assessment of Probable Impacts. An assessment of probable impacts was made in relation to the Florida Coastal Management Program statutes as required by the Federal Consistency Evaluation Procedures.

#### Chapter 403, Environmental Control

Air. By shutting down old equipment at the paper mill, utilization of modern technology, and installation of stacks consistent with good engineering practices, the project will result in numerous benefits to the environment. Improvements will be observed in both the net annual emissions (the total amount of emissions from the project in one year), and in ambient impacts (the effects of the emissions on air quality). These improvements include reductions in the ambient concentration of sulfur dioxide (SO<sub>2</sub>), particulate matter, volatile organic compounds (VOC), and total reduced sulfur (TRS) an odor-producing sulfur compound. Specific impacts include the following.

- SO<sub>2</sub>--Maximum potential annual emissions will be significantly lower than representative emissions from existing mill sources. Consequently, maximum ambient impacts will be dramatically reduced as a result of this project.

3

- TRS--Odor causing emissions will be reduced by more than 70 per cent from the current KRB's permitted emissions.
- Total Suspended Particulates (TSP)--Emissions will be significantly lower. Ambient impacts will also be significantly reduced.
- Particulate Matter Less Than 10 um (PM-10)--Emissions and ambient impacts will be reduced.
- VOC--Emissions will be reduced. Ambient impacts will be significantly reduced.
- NO<sub>x</sub>--Emissions will increase, but will be well within the New Source Performance Standards. Ambient impacts will be significantly below applicable air quality standards.
- CO--Emissions will increase, but net ambient impacts will be significantly below applicable air quality standards.

Air emission control features on the new equipment will include the following.

- Circulating Fluidized Bed Boilers.
  - Limestone injection for SO<sub>2</sub> reduction.
  - Baghouses for particulate reduction.
  - Low combustion temperature control for NO<sub>x</sub> reduction.
- Kraft Recovery Boiler.
  - Electrostatic precipitators for particulate control.
  - Noncontact black liquor evaporators for TRS control.
- Smelt Dissolving Tanks.
  - Liquid contact scrubber for particulate and TRS control.

Wastewater and Solid Waste

Due to the elimination of once-through cooling water at the site, thermal loading of the St. Johns River is expected to be reduced by 90 percent or more. Cooling tower blowdown contributes 633 gpm to the discharge. Total wastewater discharge from the site will be reduced by 70 percent. Discharge will be through the mill's existing discharge structure.

The volume of wastewater generated from sources other than cooling tower blowdown will remain essentially equal to that of the current operation. Wastewater will be treated in the existing Seminole Kraft treatment



system and will meet all applicable standards. No impacts are expected from the wastewater since the loading to the existing treatment system will not be increased.

Coal and limestone pile and site runoff will be collected and treated before use or discharge to the St. Johns River to ensure compliance with water quality standards.

#### Chapter 267, Archives, History, and Records Management

The Florida State Historic Preservation Officer has determined that there are no records of any archaeological or historic resources at the project site. No impacts are expected on any cultural resources as the result of the proposed project.

#### Chapter 373, Water Resources

As a result of the installation of a cooling tower, the Cedar Bay project will eliminate the use of Broward River water. The existing mill requires approximately 30,000 gallons per minute (gpm) of Broward River water in a once-through turbine condenser cooling system.

Ground water consumption at the site will be increased from the current mill average consumption of 19.5 million gallons per day (mgd) up to 26.5 mgd. The increase is required for the cooling tower, power cycle, and other miscellaneous plant uses. Ground water quality will be unaffected by this increase.

The project's total water consumption will be about 58 percent lower than that of Seminole Kraft at present. The South Florida Water Management District will review the proposed project for impacts on water resources.

A ground water monitoring program will be carried out to detect any impacts on water quality.

#### Power Plant Siting Act

A Site Certification Application (SCA) is being submitted by AES Cedar Bay, Inc., and Seminole Kraft Corporation for the Cedar Bay Cogeneration

Project. The application provides information concerning the existing conditions in the project area prior to construction, the anticipated changes resulting from construction, and anticipated impacts of the operation and maintenance of the proposed facilities so as to assure that applicable state, regional, and local standards will be met.

Consistency Determination

The proposed Cedar Bay Cogeneration Project complies with the Florida Coastal Management Program and will be conducted in a manner consistent with that program.

  
\_\_\_\_\_  
Jeffrey V. Swain  
Project Director

10.1.5 US Coast Guard Bridge Permit  
(Deleted)

October 31, 1988

Commander (oan)  
7th Coast Guard District--Bridge Section  
Brickell Plaza Federal Building  
909 S.E. 1st Avenue  
Miami, Florida 33131-3050

Dear Sir:

Application is hereby made by AES Cedar Bay, Inc. at 1925 North Lynn Street, Suite 1200, Arlington, Virginia 22209 (703)-522-1315, for approval by the Commandant, U. S. Coast Guard, of the location and plans of a fixed, elevated conveyor structure to be constructed across the Broward River at Jacksonville, Florida, 0.2 miles above the mouth of the waterway as shown on the attached plans.

Federal funds will not be utilized. Federal agencies which must grant approvals, easements, or other actions of this project include the U. S. Army Corps of Engineers.

The bridge will have no significant impact on the human environment. The impacts on the human environment are discussed in Sections 4, 5 and 6.2 of this Florida Site Certification Application (SCA).

An environmental analysis describing these effects has been prepared in the format specified by the Florida Department of Environmental Regulation for implementation of the Florida Electric Power Plant Siting Act. This analysis (SCA) is enclosed. See Section 6.2.

There are no wildlife and waterfowl refuges, recreational areas, public parks or historic sites the vicinity of or in the way of the bridge (conveyor) or its approaches.

Legal authority for the bridge (conveyor) is found in the General Bridge Act of 1946. The laws of the State of Florida do not require us to obtain a state permit for this work.

Sincerely,



Jeffrey V. Swain  
Project Director

- Encls: (1) Vicinity Map and plans. Refer to Figures 6.2-1, 6.2-2, 6.2-4, 10.1-1, 10.1-2, 10.1-3 and 10.1-4.  
(2) Environmental Analysis. Refer to Section 6.2 of SCA.  
(3) CZM consistency certification. Refer to Section 10.1.4.

DEPARTMENT OF TRANSPORTATION  
U. S. COAST GUARD  
Form D7-1103 (Rev. 9-85)

Commander(oan)  
Seventh Coast Guard District  
Bridge Section  
Brickell Plaza Federal Building  
909 SE. 1st Avenue  
Miami, FL 33131-3050

## BRIDGE PROJECT QUESTIONNAIRE

Please provide the following information:

A. NAVIGATION DATA:

1. Name of Waterway: Broward River
- 1a. Mileage along waterway measured from mouth or confluence 0.2
- 1b. Tributary of St. Johns R. at mile 14 (Broward Pt. Turn)
2. Geographical Location: Highway 105 (Hecksher Dr), Duval County, Jacksonville,  
(Road Number City County State) Florida
3. Township, section and range, if applicable Between Sections 46 and 47, TIS, R27E
4. Tidally influenced at proposed bridge site? Yes  
Range of tide 2.3 ft.
5. Depth and width of waterway at proposed bridge site:
 

	Depths	Widths (Perpendicular to Channel)
At Mean High Tide	<u>10 ft.</u>	<u>Approx. 1600'</u>
At Mean Low Tide	<u>8 ft.</u>	<u>Approx. 1250'</u>
6. Character of present vessel traffic on waterway. If none so state:  
 Canoe \_\_\_\_\_ Rowboat \_\_\_\_\_ Small Motorboat X  
 Cabin Cruiser \_\_\_\_\_ Houseboat X Pontoon Boat X  
 Sailboat \_\_\_\_\_ None \_\_\_\_\_
- 6a. Provide vertical clearance requirement for largest vessel using the waterway 13 feet @ MHW
- 6b. Provide photograph of each type vessel using the waterway Later
7. Are these waters used to transport interstate or foreign commerce?  
Yes \_\_\_\_\_ No X
- 7a. Are these waters susceptible to use in their natural condition or by reasonable improvement as a means to support interstate or foreign commerce? Yes \_\_\_\_\_ No X
- 7b. Any planned waterway improvements to permit larger vessels to navigate (to your knowledge)? NO If so what are they? \_\_\_\_\_
8. Any natural or manmade obstructions, bridges, dams, wiers, etc. downstream or upstream? Yes X No \_\_\_\_\_

A. NAVIGATION DATA (contd)

- 8a. If yes provide ~~upstream~~<sup>XXXXXXXX</sup>/downstream location with relation to the proposed bridge. The Hecksher Drive Bridge is approximately 700' downstream.
- 8b. If bridges, provide vertical clearance at mean high water and mean low water and horizontal clearance normal to axis of waterway.  
Vertical Clearance 13' @ MHW, 15' @ MLW. Horizontal 40'.
- 8c. Provide a photograph of the bridge from the waterway showing channel spans. Later. This is a bascule type bridge. Clearance beneath cables is 34' MHW.
9. Will the structure replace an existing bridge? NO
- 9a. Provide permit number and issuing agencies of permits for bridge(s) to be replaced. N.A.
- 9b. Provide vertical clearance above mean high water and mean low water and horizontal clearance normal to axis of waterway. N. A.
- 9c. Provide a photograph of the bridge from the waterway showing channel span(s) N.A.
10. List names and addresses of persons whose property adjoins bridge right-of-way.  
Seminole Kraft Corp, c/o Stone Container Corp., 150 Michigan Avenue.,  
Chicago, Illinois 60601  
Gulf Products Division, SOHIO Oil Company, P. O. Box 26038, 2101 Heckscher  
Drive, Jacksonville, Florida 32218
11. List names and addresses/location of marinas, marine repair facilities, public boat ramps, private piers/docks along waterway within 1/2 mile of site. Gulf Oil Pier - Drummond Pt. (Name and address above).  
Hess Oil Pier (Amerada Hess Corporation, 2617 Heckscher Drive,  
Jacksonville, Florida 32226
12. Attach location map and plans for the proposed bridge; include vertical clearances above mean high water and mean low water and horizontal clearance normal to axis of the waterway. See Figures 10.1-1, 10.1-2, and 6.2-2 of the SCA.
13. Attach three (3) photographs taken at the proposed bridge site: one looking upstream, one looking downstream, and one looking along the alignment centerline across the bridge site. Later.

DATE: 10-25-88

SIGNATURE: Jeffrey V. Swain

Proposed Bridge Owner or Agent

ATTACHMENTS: **Location Map**  
**Bridge Plans**  
**Photographs**

## 10.2 ZONING DESCRIPTIONS

Detailed descriptions of current zoning designations are presented in Subsection 2.2.2 of this SCA.

## 10.3 LAND USE PLAN DESCRIPTIONS

Detailed land use plan descriptions are provided in Section 2.2 of this SCA.

#### 10.4 EXISTING STATE PERMITS

The following existing permits for the Seminole Kraft (SK) paper mill are included in this appendix section. Most of the listed air emission sources will be removed from service as a result of the Cedar Bay Cogeneration Project. Only the lime kilns and materials handling silos will remain in service. Surface water withdrawal would be discontinued because of the project; however, SK's ground water needs would continue.

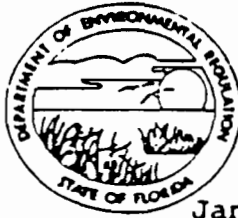
- Air Emissions Operating Permits for the following.
  - Power Boiler No. 1
  - Power Boiler No. 2.
  - Power Boiler No. 3.
  - Bark Boiler No. 1.
  - Bark Boiler No. 2.
  - Recovery Boiler No. 1.
  - Recovery Boiler No. 2.
  - Recovery Boiler No. 3.
  - Smelt Dissolving Tank No. 1.
  - Smelt Dissolving Tank No. 2.
  - Smelt Dissolving Tank No. 3.
  - Lime Kiln No. 1.
  - Lime Kiln No. 2.
  - Lime Kiln No. 3.
  - Materials Handling Silos.
- Consumptive Water Use Permits for the following.
  - Surface water from Broward River.
  - Ground water from onsite wells.
- Wastewater Treatment System Operating Permit.
- National Pollutant Discharge Elimination System Permit.
- Consent order between Florida DER, Jacksonville BESD, and Seminole Kraft Corporation.



STATE OF FLORIDA BEST AVAILABLE COPY  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

26 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207  
(904) 396-6959



BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY  
ERNEST E. FREY  
DISTRICT MANAGER

January 12, 1987

Mr. Frank Lee, Plant Manager  
Seminole Kraft Corporation  
9469 Eastport Road  
Jacksonville, Florida 32218

Re: Duval County - AP  
Jacksonville Kraft Paper Co., Inc  
Air Pollution Operation Permits  
On Attachment A

Dear Mr. Lee:

The Bio-Environmental Services Division (BESD) and the Department of Environmental Regulation have transferred the permits (effective December 8, 1986) listed on Attachment "A" as follows:

From: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32218

To: Seminole Kraft Corporation  
9469 Eastport Road  
Jacksonville, Florida 32218

This letter and Attachment "A" shall be attached to and is part of the captioned permits.

Please direct any questions concerning this matter, to the BESD at (904) 630-3210.

Very truly yours,

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Dept. of Environmental Regulation

*Donald C. Bayly*  
Donald C. Bayly, Division Chief

*Ernest E. Frey*  
Ernest E. Frey, District Manager

DCB/EF/ecr

Attachment

cc: Mr. Bill Stewart, P.E., DER  
Mr. Mike Fitzsimmons, DER  
BESD File 2155A

Attachment "A"

<u>SOURCE</u>	<u>PERMIT NO.</u>
Power Boiler No. 1	A016-71201
Power Boiler No. 2	A016-71202
Power Boiler No. 3	A016-71203
Bark Boiler No. 1	A016-71206
Bark Boiler No. 2	A016-71207
Recovery Boiler No. 1	A016-71208
Recovery Boiler No. 2	A016-71209
Recovery Boiler No. 3	A016-71210
Smelt Dissolving Tank No. 1	A016-71211
Smelt Dissolving Tank No. 2	A016-71212
Smelt Dissolving Tank No. 3	A016-71213
Lime Kiln No. 1	A016-71214
Lime Kiln No. 2	A016-71204
Lime Kiln No. 3	A016-71205
Materials Handling Silos	A016-71215

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG DUTTON  
DISTRICT MANAGER

PERMITEE: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-06  
Permit/Certification Number: A016-71201  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Power Boiler #1  
UTM E-7441.800 N-3365.575

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of power boiler #1 for the production of steam. Maximum heat input is  $185 \times 10^6$  BTUs per hour firing Bunker C or #6 fuel oil with a maximum sulfur content of 2.27% by weight.

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-20612
- (3) Particulate stack test dated June 25 and 28, 1982
- (4) Visible emission test dated June 25, 1982
- (5) Additional information received on June 27, 1983 and July 14, 1983
- (6) Permit transfer form received on July 8, 1983

BEST AVAILABLE COPY

PERMITEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-06

Permit/Certification Number:

A016-71201

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animals, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permittee source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the condition of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-06

Permit/Certification Number:

A016-71201

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-31.20, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
- ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department during the course of any unresolved enforcement action.
- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
- the date, exact place, and time of sampling or measurements;
  - the person responsible for performing the sampling or measurements;
  - the date(s) analyses were performed;
  - the person responsible for performing the analyses;
  - the analytical techniques or methods used; and
  - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts and information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-06

Permit/Certification Number: A016-71201

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
****Particulate (Non-soot blowing)	17-2.650(2)(c)2 (0.1 lb/10 <sup>6</sup> BTU input)	18.5 lbs/hr *70.90 T/yr
Particulate (Soot blowing)	17-2.250 (0.3 lb/10 <sup>6</sup> BTU input)	**55.5 lbs/hr **30.39 T/yr
Visible Emissions (Non-soot blowing)	17-2.650(2)(c)2	20% Opacity
Visible Emissions (Soot blowing)	17-2.250	**60% Opacity

\*Based upon 21 operating hours per day

\*\*For a maximum of three (3) hours per 24 hour period

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).

3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.

4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983.

- \*\*\*Particulates . . . . . 12 months
- \*\*\*Visible Emissions . . . . . 12 months
- Fuel oil analysis (% sulfur) . . 12 months

\*\*\*Shall be conducted simultaneously during soot blowing and non-soot blowing operating modes.

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.

6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

\*\*\*\*Non-soot blowing particulate emission limits become effective September 15, 1983

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-06

Permit/Certification Number: A016-71201

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

7. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached to and becomes part of this permit pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.
8. Operation is limited to 8760 hours per year.

Issued this 8 day of August, 19 83

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
\_\_\_\_\_  
Donald C. Bayly, Division Chief

  
\_\_\_\_\_  
Doug Dutton, District Manager

5 Pages attached

Page 5 of 5

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCINKEL  
SECRETARY

G. DOUG DUTTON  
DISTRICT MANAGER

PERMITTEE: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-07  
Permit/Certification Number: A016-71202  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Power Boiler #2  
UTM E-7441.800 N-3365.575

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of power boiler #2 for the production of steam. Maximum heat input is  $246 \times 10^6$  BTUs per hour firing Bunker C or #6 fuel oil with a maximum sulfur content of 2.27% by weight.

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-20607
- (3) Particulate stack test dated July 1, 2 and 5, 1982
- (4) Visible emission test dated July 2, 1982
- (5) Additional information received on June 27, 1983 and July 14, 1983
- (6) Permit transfer form received on July 8, 1983



BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-07

Permit/Certification Number:

A016-71202

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animals, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permittee source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-07

Permit/Certification Number:

A016-71202

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rule 17-4.12 and 17-20.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rules.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts and information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-07

Permit/Certification Number: A016-71202

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION	
****Particulate (Non-soot blowing)	17-2.650(2)(c)2 (0.1 lb/10 <sup>6</sup> BTU input)	24.6 lbs/hr	*94.28 T/yr
Particulate (Soot blowing)	17-2.250 (0.3 lb/10 <sup>6</sup> BTU input)	**73.8 lbs/hr	**40.41 T/yr
Visible Emissions (Non-soot blowing)	17-2.250(2)(c)2	20% Opacity	
Visible Emissions (Soot blowing)	17-2.250	**60% Opacity	

\*Based upon 21 operating hours per day

\*\*For a maximum of three (3) hours per 24 hour period

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).

3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.

4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983.

- \*\*\*Particulates . . . . . 12 months
- \*\*\*Visible Emissions . . . . . 12 months
- Fuel Oil Analysis (% sulfur) . . . . 12 months

\*\*\*Shall be conducted simultaneously during soot blowing and non-soot blowing operating modes.

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.

6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

\*\*\*\*Non-soot blowing particulate emission limits become effective September 15, 1983.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-07

Permit/Certification Number: A016-71202

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:


7. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached to and becomes part of this permit pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.
8. Operation is limited to 8760 hours per year.

Issued this 8 day of August, 1983

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
Donald C. Bayly, Division Chief

  
Doug Dutton, District Manager

5 Pages attached

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION



NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207

BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG OUTTON  
DISTRICT MANAGER

**PERMITEE:** Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-08  
Permit/Certification Number: A016-71203  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Power Boiler #3  
UTM E-7441.800 N-3365.575

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of power boiler #3 for the production of steam. Maximum heat input is  $246 \times 10^6$  BTUs per hour firing Bunker C or #6 fuel oil with a maximum sulfur content of 2.27% by weight.

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-20606
- (3) Particulate stack test dated July 6, 7, 8, 1982
- (4) Visible emission test dated July 8, 1982
- (5) Additional information received on June 27, 1983 and July 14, 1983
- (6) Permit transfer form received on July 8, 1983

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:  
Permit/Certification Number:  
Date of Issue:  
Expiration Date:

31-16-0067-08  
A016-71203  
August 8, 1983  
July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-08

Permit/Certification Number:

A016-71203

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

- 9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
- 10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
- 11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
- 12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
- 13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
- 14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rules.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
- 15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-0E

Permit/Certification Number:

A016-71203

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1985

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
****Particulate (Non-soot blowing)	17-2.650(2)(c)2 (0.1 lb/10 <sup>6</sup> BTU input)	24.6 lbs/hr *94.28 T.y.
Particulate (Soot blowing)	17-2.250 (0.3 lb/10 <sup>6</sup> BTU input)	**73.8 lbs/hr **40.41 T.y.
Visible Emissions (Non-soot blowing)	17-2.650(2)(c)2	20% Opacity
Visible Emissions (Soot blowing)	17-2.250	**60% Opacity

\*Based upon 21 operating hours per day

\*\*For a maximum of three (3) hours per 24 hour period

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).

3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.

4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983.

- \*\*\*Particulates . . . . . 12 months
- \*\*\*Visible Emissions . . . . . 12 months
- Fuel Oil Analysis (% sulfur) . . 12 months

\*\*\*Shall be conducted simultaneously during soot blowing and non-soot blowing operating modes.

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.

6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

\*\*\*\*Non-soot blowing emission limits become effective September 15, 1983



BEST AVAILABLE COPY

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

34-16-0067-08

Permit/Certification Number:

A016-71203

Date of Issue:

August 8, 1982

Expiration Date:

July 31, 1983

SPECIFIC CONDITIONS:

- 7. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached to and becomes part of this permit pursuant to RAC Rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be available to BESD upon request.
- 8. Operation is limited to 8760 hours per year.

Issued this 8 day of August, 1982

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
Donald C. Bayly, Division Chief

  
Doug Dutton, District Manager

5 Pages attached

BEST AVAILABLE COPY

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG OUTTO  
DISTRICT MANAGER

**PERMITEE:** Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

L.D. Number: 31-16-0067-04  
Permit/Certification Number: A016-71204  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Bark Boiler #1  
UTM E-7441.800 N-3365.575

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of bark boiler #1 for the production of steam. Maximum heat input is  $193 \times 10^6$  BTUs per hour firing bark and/or Bunker C or #6 fuel oil with a maximum sulfur content of 2.27% by weight. Particulate emissions are controlled by 2 sets of 4 each ~~3~~ 11 VT Cyclone Separators in series with a Ducon Venturi Scrubber Type VV0.

Located at 9469 Eastport Road, Jacksonville, Florida 32229.

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983.
- (2) Permit A016-32761.
- (3) Particulate stack test dated February 23 and 25, 1983.
- (4) Additional information received on June 27, 1983, July 14, 1983 and July 15, 1983.
- (5) Permit transfer form received on July 8, 1983.

BEST AVAILABLE COPY

PERMITEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

Permit/Certification Number:

Date of Issue:

Expiration Date:

31-16-0067-04

A016-0067-04

August 8, 1983

July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, and 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animals, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permit source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-04

Permit/Certification Number:

A016-71204

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rule 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-04

Permit/Certification Number: A016-71204

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
Particulate (bark fired)	17-2.650(2)(c)3 (0.2 lb/10 <sup>6</sup> BTU input)	38.6 lbs/hr 169.07 T/yr
Particulate (oil fired)	17-2.650(2)(c)3 (0.1 lb/10 <sup>6</sup> BTU input)	19.3 lbs/hr *81.06 T/yr
Visible Emissions	17-2.650(2)(c)3	30%

\*Operating hours while firing oil are limited to 8400 per year

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).

3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.

4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983.

- Particulates . . . . . 5 months
- Fuel oil analysis (% sulfur) . . 6 months
- Visible Emissions. . . . . On request

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.

6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper

I. D. Number:

31-16-0067-04

Permit/Certification Number:

A016-71204

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

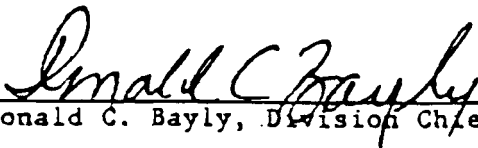
SPECIFIC CONDITIONS:

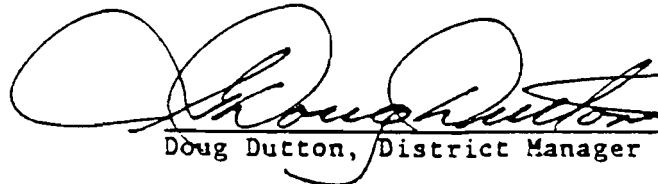
7. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached to and becomes part of this permit pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.
8. Operation is limited to 8760 hours per year while firing bark.
9. The pressure drop in the Venturi Scrubber Type VVO shall be maintained at a minimum of 20 inches water gauge.

Issued this 8 day of August, 1983

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
Donald C. Bayly, Division Chief

  
Doug Dutton, District Manager

5 Pages attached

Page 5 of 5

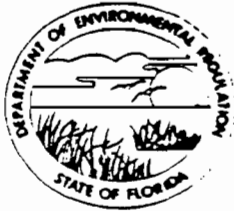
BEST AVAILABLE COPY

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207  
(904) 398-6959



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG DUTTON  
DISTRICT MANAGER

September 13, 1983

Mr. J. Michael Watson, Attorney  
Jacksonville Kraft Paper Co., Inc.  
2400 Gulf Life Tower  
Jacksonville, Florida 32207

Dear Mr. Watson:

Duval County - AP  
Jacksonville Kraft Paper Co., Inc.  
Bark Boilers No. 1 and No. 2  
Permits No. A016-71204 and A016-71205

Reference your letter to Bio-Environmental Services Division August 29, 1983 and B.E.S. response dated September 7, 1983.

You are advised that the captioned permits are revised to delete Specific Condition No. 9 which sets forth a minimum pressure drop in the venturi scrubbers Type VVO.

This revision does not change the requirement set forth in the Operation and Maintenance Plan for Particulate Control, RACT Rule, Section 17-2.650(2)(g), Florida Administrative Code, which requires recording the hourly differential pressure drop in these scrubbers and other performance parameters which are indicators of the condition, operating rates and efficiencies.

Sincerely,

*G. Doug Dutton*  
for G. Doug Dutton  
District Manager

GDD:jkk

cc: Donald C. Bayly, BES  
Eugene T. Tonn, P.E.

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION



## NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207

BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG DUTTON  
DISTRICT MANAGER

PERMITTEE: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-05  
Permit/Certification Number: A016-71205  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Bark Boiler #2  
UTM E-7441.800 N-3365.575

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of bark boiler #2 for the production of steam. Maximum heat input is  $193 \times 10^6$  BTUs per hour firing bark and/or Bunker C or #6 fuel oil with a maximum sulfur content of 2.27% by weight. Particulate emissions are controlled by 2 sets of 4 each Buell VT Cyclone Separators in series with a Ducon Venturi Scrubber Type VV0.

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983.
- (2) Permit A016-32762.
- (3) Particulate stack test dated February 14, 15 and 17, 1983.
- (4) Additional information received on June 27, 1983, July 14, 1983 and July 15, 1983.
- (5) Permit transfer form received on July 8, 1983.



BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-05

Permit/Certification Number:

A016-71205

Date of Issue:

August 9, 1983

Expiration Date:

July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. The permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animals, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permit: source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc. I.D. Number: 31-16-0067-05  
Permit/Certification Number: A016-71205  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report of application unless otherwise specified by department rule.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-05

Permit/Certification Number: A016-71205

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
Particulate (bark fired)	17-2.650(2)(c)3 (0.2 lb/10 <sup>6</sup> BTU input)	38.6 lbs/hr 169.07 T/yr
Particulate (oil fired)	17-2.650(2)(c)3 (0.1 lb/10 <sup>6</sup> BTU input)	19.3 lbs/hr *81.06 T/yr
Visible Emissions	17-2.650(2)(c)3	30% Opacity

\*Operating hours while firing oil are limited to 8400 per year.

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).
3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.
4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983

Particulates . . . . . 6 months  
 Fuel oil analysis (% sulfur) . . . . 6 months  
 Visible Emissions . . . . . On request

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.
6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-05

Permit/Certification Number: A016-71205

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

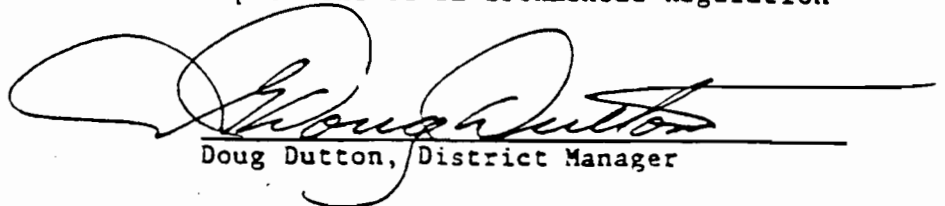
7. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached to and becomes part of this permit pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.
8. Operation is limited to 8760 hours per year while firing bark.
9. The pressure drop in the Venturi Scrubber Type VVO shall be maintained at a minimum of 20 inches water gauge.

Issued this 8 day of August, 19 83

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

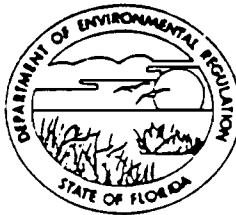
  
Donald C. Bayly, Division Chief

  
Doug Dutton, District Manager

5 Pages attached

Page 5 of 5

DEPARTMENT OF ENVIRONMENTAL REGULATION



*Revised*

BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINGEL  
SECRETARY

G. DOUG DUTTON  
DISTRICT MANAGER

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207  
(904) 396-6959

September 13, 1983

Mr. J. Michael Watson, Attorney  
Jacksonville Kraft Paper Co., Inc.  
2400 Gulf Life Tower  
Jacksonville, Florida 32207

Dear Mr. Watson:

Duval County - AP  
Jacksonville Kraft Paper Co., Inc.  
Bark Boilers No. 1 and No. 2  
Permits No. A016-71204 and A016-71205

Reference your letter to Bio-Environmental Services Division August 29, 1983 and B.E.S. response dated September 7, 1983.

You are advised that the captioned permits are revised to delete Specific Condition No. 9 which sets forth a minimum pressure drop in the venturi scrubbers Type VVO.

This revision does not change the requirement set forth in the Operation and Maintenance Plan for Particulate Control, RACT Rule, Section 17-2.650(2)(g), Florida Administrative Code, which requires recording the hourly differential pressure drop in these scrubbers and other performance parameters which are indicators of the condition, operating rates and efficiencies.

Sincerely,

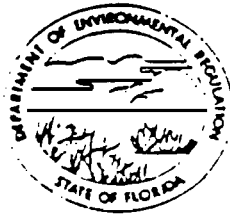
*G. Doug Dutton*  
for G. Doug Dutton  
District Manager

GDD:jkk

cc: Donald C. Bayly, BES  
Eugene T. Tonn, P.E.

## DEPARTMENT OF ENVIRONMENTAL REGULATION

## NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207BOB GRAMAL  
GOVERNORVICTORIA J. TSCHINKE  
SECRETARYG. DOUG COTTO  
DISTRICT MANAGER

**PERMITTEE:** Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0057-39  
Permit/Certification Number: A016-71205  
Date of Issue: September 7, 1983  
Expiration Date: July 31, 1983  
County: Duval  
Latitude/Longitude: 30:25:15 N 81:36:00  
Section/Township/Range:  
Project: Recovery Boiler #1  
UTM: E-7441.750 N-3365.650

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of Recovery Boiler #1 with a maximum feed rate of 43,333 lbs/hr of black liquor solids. Maximum heat input is  $286 \times 10^6$  BTUs per hour. Particulate emissions are controlled by a Koppers Electrostatic Precipitator and a Varkaus venturi type scrubber (Model P-1200), in series. Number 6 fuel oil with a maximum sulphur content of 2.27% by weight may be used during startup, shutdown and malfunction.

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-33297
- (3) Particulate stack test dated November 23, 24 and 27, 1982
- (4) Additional information received on June 27, 1983 and July 14, 1983
- (5) Permit transfer form received on July 8, 1983

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:  
Permit/Certification Number:  
Date of Issue:  
Expiration Date:

31-16-0067-09  
A016-71206  
September 7, 1983  
July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.740, 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgment of title and does not constitute authority for the use of submerged lands unless herein provided and the necessary title leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trusts may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, a plant or aquatic life or property and penalties therefor caused by the construction or operation of this project, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and collection (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and as required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-09

Permit/Certification Number:

A016-71206

Date of Issue:

September 7, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.



Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-09

Permit/Certification Number: AQ16-71206

Date of Issue:

September 7, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
Particulate	17-2.600(4)(b) (3.0 lbs/3000 lbs BLS* fed)	43.3 lbs/hr    189.7 T/yr
Total Reduced Sulphur	17-2.600(4)(b)	**6.44 lbs/hr    28.2 T/yr

\*Black Liquor Solids    \*\*Based upon 17.5 ppm

- Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).
- Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.
- The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983
  - Particulates - - - - -6 months
  - \*Total Reduced Sulphur - - - -6 months
  - \*\*Fuel Oil Analysis (%Sulphur) - -On request
  - \*Strip chart (24 hours continuous) from April 15 (8AM) to April 16 (8AM) due on or before July 1. Include average ACFM, %BLS and fuel flow.
  - \*Strip chart (24 hours continuous) from November 15 (8AM) to November 16 (8AM) due on or before January 1. Include average ACFM, % BLS and fuel flow.
  - \*\*#6 fuel oil and black liquor
- Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.
- Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number: 31-16-0067-09  
Permit/Certification Number: AD16-71206  
Date of Issue: September 7, 1983  
Expiration Date: July 31, 1988

SPECIFIC CONDITIONS:

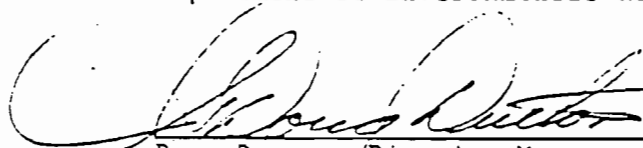
7. Operation is limited to 8760 hours per year.
8. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.

Issued this 7 day of September, 1983

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
\_\_\_\_\_  
Donald C. Bayly, Division Chief

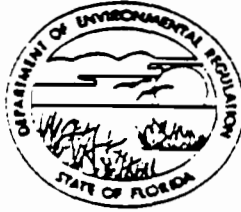
  
\_\_\_\_\_  
Doug Dutton, District Manager

5 Pages attached

Page 5 of 5

STATE OF FLORIDA BEST AVAILABLE COPY  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT  
3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY  
G. DOUG OUTTON  
DISTRICT MANAGER

PERMITEE: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number:	31-16-0067-10
Permit/Certification Number:	A016-71207
Date of Issue:	September 7, 1983
Expiration Date:	July 31, 1988
County:	Duval
Latitude/Longitude:	30:25:15/81:36:00
Section/Township/Range:	
Project:	Recovery Boiler #2
UTM	E-7441.750 N-3365.650

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of Recovery Boiler #2 with a maximum feed rate of 55,417 lbs/hr of Black Liquor Solids. Maximum heat input is  $366 \times 10^6$  BTUs per hour. Particulate emissions are controlled by a Koppers Electrostatic precipitator and a Varkaus venturi type scrubber (Model P-250) in series. Number 6 fuel oil with a maximum sulphur content of 2.27% by weight may be used during startup, shutdown and malfunction.

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows;

- (1) Permit application received on June 17, 1983
- (2) Permit A016-33296
- (3) Particulate stack test dated December 14 and 15, 1982
- (4) Additional information received on June 27, 1983 and July 14, 1983
- (5) Permit transfer form received on July 8, 1983

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:  
Permit/Certification Number:  
Date of Issue:  
Expiration Date:

31-16-0067-10  
A016-71207  
September 7, 1983  
July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permit source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-10

Permit/Certification Number:

A016-71207

Date of Issue:

September 7, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rule 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rules.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-10

Permit/Certification Number:

A016-71207

Date of Issue:

September 7, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION	
Particulate	17-2.600(4)(b) (3.0 lbs/3000 lbs BLS* fed)	.55.4 lbs/hr	242.7 T/yr
Total Reduced Sulphur	17-2.600(4)(b)	**8.58 lbs/hr	37.6 T/yr

\*Black Liquor Solids    \*\*Based upon 17.5 ppm

- Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).
- Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.
- The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983.
  - Particulates - - - - - 6 months
  - \*Total Reduced Sulphur - - - - - 6 months
  - \*\*Fuel Oil Analysis (% Sulphur) - On request
  - \*Strip chart (24 hours continuous) from April 15 (8AM) to April 16 (8AM) due on or before July 1. Include average ACFM, % BLS and fuel flow.
  - \*Strip chart (24 hours continuous) from November 15 (8AM) to November 16 (8AM) due on or before January 1. Include average ACFM, % BLS and fuel flow.
  - \*\* #6 fuel oil and black liquor
- Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.
- Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-10

Permit/Certification Number: A016-71207

Date of Issue:

September 7, 1983

Expiration Date:

July 31, 1988

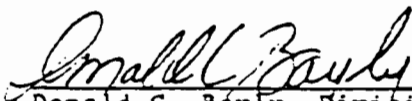
SPECIFIC CONDITIONS:

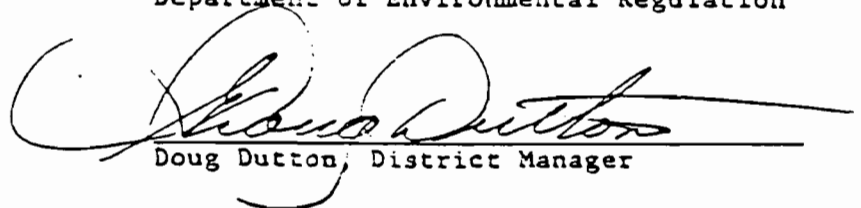
7. Operation is limited to 8760 hours per year.
8. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a ~~minimum~~ period of two (2) years and be made available to BESD upon request.

Issued this 7 day of September, 19 83

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
\_\_\_\_\_  
Donald C. Bayly, Division Chief

  
\_\_\_\_\_  
Doug Dutton, District Manager

5 Pages attached

Page 5 of 5

## DEPARTMENT OF ENVIRONMENTAL REGULATION

## NORTHEAST DISTRICT

3428 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAF  
GOVERNOR

VICTORIA J. TSCHIN  
SECRETARY

G. DOUG DUT  
DISTRICT MANAGER

PERMITTEE: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-11  
Permit/Certification Number: A016-71208  
Date of Issue: September 7, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Recovery Boiler #3  
UTM: E-7441.750 N-3365.650

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of Recovery Boiler #3 with a maximum feed rate of 55,417 lbs/hr of Black Liquor Solids. Maximum heat input is  $366 \times 10^6$  BTUs per hour. Particulate emissions are controlled by a Koppers Electrostatic Precipitator and a Varkaus venturi type scrubber (Model P-250) in series. Number 6 fuel oil with a maximum sulphur content of 2.27% by weight may be used during startup, shutdown and malfunction.

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-27852
- (3) Particulate stack test dated November 2, 3 and 4, 1982
- (4) Additional information received on June 27, 1983 and July 14, 1983
- (5) Permit transfer form received on July 8, 1983



BEST AVAILABLE COPY

PERMITEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-11

Permit/Certification Number:

A016-71208

Date of Issue:

September 7, 1983

Expiration Date:

July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-11

Permit/Certification Number:

A016-71208

Date of Issue:

September 7, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rule 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rules.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts and information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-11

Permit/Certification Number: A016-71208

Date of Issue:

September 7, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION	
Particulate	17-2.600(4)(b) (3.0 lbs/3000 lbs/ BLS* fed)	55.4 lbs/hr	242.7 T/yr
Total Reduced Sulphur	17-2.600(4)(b)	**8.58 lbs/hr	37.6 T/yr

\*Black Liquor Solids

\*\*Based upon 17.5 ppm

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).

3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.

4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983

Particulates - - - - - 5 months

\*Total Reduced Sulphur - - - - - 5 months

\*\*Fuel Oil Analysis - - - - - On Request

\*Strip chart (24 hours continuous) from April 15 (8AM) to April 16 (8AM) due on or before July 1. Include average ACFM, % BLS and fuel flow.

\*Strip chart (24 hours continuous) from November 15 (8AM) to November 16 (8AM) due on or before January 1. Include average ACFM, % BLS and fuel flow.

\*\*#6 fuel oil and black liquor.

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.

6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-11

Permit/Certification Number:

A016-71208

Date of Issue:

September 7, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

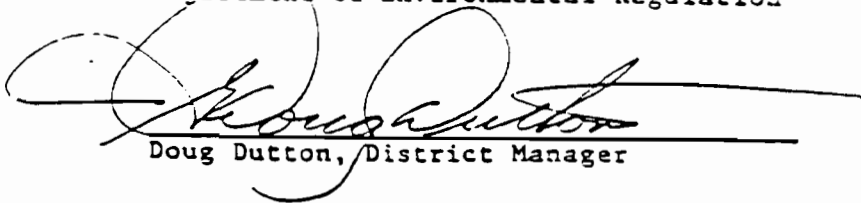
- 7. Operation is limited to 8760 hours per year.
- 8. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.

Issued this 7 day of September, 1983

City of Jacksonville  
Bio-Environmental Services Division

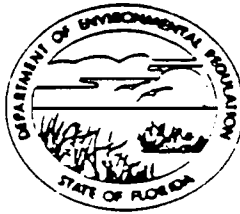
State of Florida  
Department of Environmental Regulation

  
Donald C. Bayly, Division Chief

  
Doug Dutton, District Manager

5 Pages attached

BEST AVAILABLE COPY STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION



NORTHEAST DISTRICT  
2426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207

BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY  
G. DOUG DUTTON  
DISTRICT MANAGER

PERMITTEE: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-12  
Permit/Certification Number: A016-71209  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Smelt Dissolving Tank #1  
UTM: E-7441.750 N-3365.650

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of smelt dissolving tank #1. The maximum process weight is 22,706 lbs/hr. Particulate emissions are controlled by a demister pad (York Separators, Inc.).

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-20605
- (3) Additional information received on June 27, 1983
- (4) Particulate stack test dated December 17 and 20, 1982
- (5) Permit transfer form received on July 3, 1983

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PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-12

Permit/Certification Number:

A016-71209

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:  
Permit/Certification Number:  
Date of Issue:  
Expiration Date:

31-16-0067-12  
A016-71209  
August 8, 1983  
July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-XI.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-12

Permit/Certification Number: A016-71209

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
Particulate	17-2.650(2)(C)10.	16.2 lbs/hr 70.9 T/yr
Visible Emissions	17-2.650(2)(C)10.	10% Opacity

- Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).
- Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.
- The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983.

Particulates - - - - - 12 months  
 Visible Emissions - - - - - On request

- Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.
- Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.



Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-12

Permit/Certification Number: A016-71209

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:


7. Operation is limited to 8760 hours per year.
8. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operations and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.

Issued this 8 day of August, 1983

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
Donald C. Bayly, Division Chief

  
Doug Dutton, District Manager

5 Pages attached

Page 5 of 5

DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG BUTTON  
DISTRICT MANAGER

PERMITTEE: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-13  
Permit/Certification Number: A016-71210  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Smelt Dissolving Tank #2  
UTM E-7441.750 N-3365.650

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of smelt dissolving tank #2. The maximum process weight is 29,038 lbs/hr. Particulate emissions are controlled by a demister pad (York Separators, Inc.).

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-20604
- (3) Additional information received on June 27, 1983 and July 14, 1983
- (4) Particulate stack test dated October 25, 27 and 28, 1982
- (5) Permit transfer form received on July 3, 1983

BEST AVAILABLE COPY

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:  
Permit/Certification Number:  
Date of Issue:  
Expiration Date:

31-16-0067-13  
A016-71210  
August 8, 1983  
July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the condition of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-13

Permit/Certification Number:

A016-71210

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-X0.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
- ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
- a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the data(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-13

Permit/Certification Number: A016-71210

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
Particulate	17-2.650(2)(C)10.	18.9 lbs/hr 82.8 T/yr
Visible Emissions	17-2.650(2)(C)10.	10% Opacity

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).
3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.
4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983.

Particulates - - - - - 12 months  
 Visible Emissions - - - - - On request

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.
6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-13

Permit/Certification Number: A016-71210

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

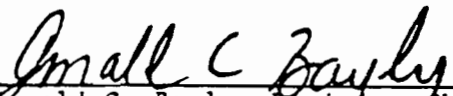
SPECIFIC CONDITIONS:


7. Operation is limited to 8760 hours per year.
8. An operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a ~~minimum~~ period of two (2) years and be ~~made~~ available to BESD upon request.

Issued this 8 day of August, 1983

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
\_\_\_\_\_  
Ronald C. Bayly, Division Chief

  
\_\_\_\_\_  
Doug Dutton, District Manager

5 Pages attached

Page 5 of 5

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION



SOUTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207

BOB GRAHAM  
GOVERNOR

VICTORIA L. TSCHINKEL  
SECRETARY

J. DOUG DUTTON  
DISTRICT MANAGER

**PERMITTEE:** Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-14  
Permit/Certification Number: A016-71211  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Smelt Dissolving Tank #3  
UTM E-7441.750 N-3355.650

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of smelt dissolving tank #3. The maximum process weight is 29,038 lbs. Particulate emissions are controlled by a demister pad (York Separators, Inc.).

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-20618
- (3) Additional information received on June 27, 1983 and July 14, 1983
- (4) Particulate stack test dated October 7, 8 and 11, 1982
- (5) Permit transfer form received on July 8, 1983

BEST AVAILABLE COPY

PERMITEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-14

Permit/Certification Number:

A016-71211

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

PERMIT CONDITIONS:

The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and



PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-14

Permit/Certification Number:

A016-71211

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number: 31-16-0067-14  
Permit/Certification Number: A016-71211  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
Particulate	17-2.650(2)(C)10.	18.9 lbs/hr 82.8 T/yr
Visible Emissions	17-2.650(2)(C)10.	10% Opacity

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).

3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.

4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983

Particulates - - - - - 12 months  
Visible Emissions - - - - - On request

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.

6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-14

Permit/Certification Number: A016-71211

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

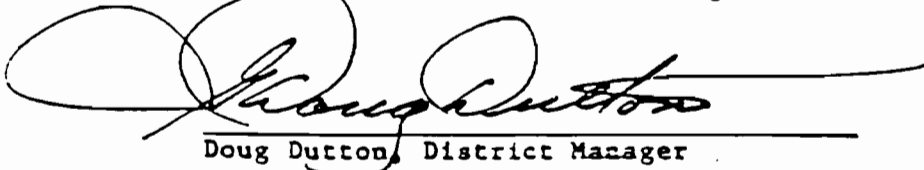
7. Operation is limited to 8760 hours per year
8. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.

Issued this 8 day of August, 1983

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
\_\_\_\_\_  
Donald C. Bayly, Division Chief

  
\_\_\_\_\_  
Doug Dutton, District Manager

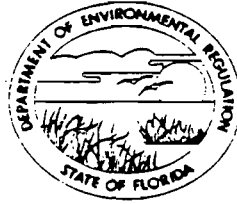
5 Pages attached

Page 5 of 5

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG BUTTON  
DISTRICT MANAGER

PERMITEE: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-01  
Permit/Certification Number: A016-71212  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Lime Kiln #1  
UTM: E-7441.750 N-3365.650

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of the #1 Lime Kiln. The maximum process weight is 22,180 lbs/hr. The maximum heat input is  $60 \times 10^6$  BTUs per hour firing #6 fuel oil with a maximum sulphur content of 2.27% by weight. Particulate emissions are controlled by a Chemico S-F venturi type scrubber.

Located at 9469 Eastport Road, Jacksonville Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-21824
- (3) Additional information received on June 27, 1983 and July 14, 1983
- (4) Particulate stack test dated March 15 and 17, 1983
- (5) Permit transfer form received on July 8, 1983

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-01

Permit/Certification Number:

A016-71212

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animals, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permit, source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-01

Permit/Certification Number:

A016-71212

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-01

Permit/Certification Number: A016-71212

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
Particulate	17-2.650(2)(C)9.	16 lbs/hr 70 T/yr
Visible Emissions	17-2.650(2)(C)9.	10% Opacity

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).

3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.

4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983.

Particulates - - - - - 6 months  
 Visible Emissions - - - - - On request

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.

6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-01

Permit/Certification Number: A016-71212

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

7. Operation is limited to 8760 hours per year.
8. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.

Issued this 8 day of August, 1983

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
\_\_\_\_\_  
Ronald C. Bayly, Division Chief

  
\_\_\_\_\_  
Doug Dutton, District Manager

5 Pages attached

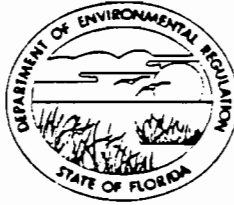
Page 5 of 5



STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG DUTTON  
DISTRICT MANAGER

PERMITTEE: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-02  
Permit/Certification Number: A016-71213  
Date of Issue: August 17, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Lime Kiln #2  
UTM E-7441.750 N-3365.650

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of the #2 Lime Kiln. The maximum process weight is 22,340 lbs/hr. The maximum heat input is  $60 \times 10^6$  BTUs per hour firing #6 fuel oil with a maximum sulphur content of 2.27% by weight. Particulate emissions are controlled by a Zurn FA-0055 venturi scrubber.

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-21818
- (3) Additional information received on June 27, 1983 and July 14, 1983
- (4) Particulate stack test dated March 21 and 22, 1983
- (5) Permit transfer form received on July 8, 1983

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-02

Permit/Certification Number:

A016-71213

Date of Issue:

August 17, 1983

Expiration Date:

July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number: 31-16-0067-02  
Permit/Certification Number: A016-71213  
Date of Issue: August 17, 1983  
Expiration Date: July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-02

Permit/Certification Number: A016-71213

Date of Issue:

August 17, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
Particulate	17-2.650(2)(C)9.	16 lbs/hr 70 T/yr
Visible Emissions	17-2.650(2)(C)9.	10% Opacity

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).

3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.

4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983

Particulates - - - - - 6 months  
Visible Emissions - - - - - On request

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.

6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-02

Permit/Certification Number: A016-71213

Date of Issue:

August 17, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:


7. Operation is limited to 8760 hours per year.
8. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached pursuant to RACT rule, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.

Issued this 17 day of August, 1983

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
\_\_\_\_\_  
Donald C. Bayly, Division Chief

  
\_\_\_\_\_  
Doug Dutton, District Manager

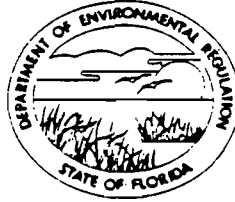
5 Pages attached

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STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY  
G. DOUG OUTTON  
DISTRICT MANAGER

PERMITEE: Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-03  
Permit/Certification Number: A016-71214  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Lime Kiln #3  
UTM E-7441.750 N-3365.650

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of the #3 lime Kiln. The maximum process weight is 22,340 lbs/hr. The maximum heat input is  $60 \times 10^6$  BTUs per hour firing #6 fuel oil with a maximum sulphur content of 2.27% by weight or pitch with a normal sulphur content of 0.3% by weight. Particulate emissions are controlled by a Zurn No. 7598 venturi scrubber.

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on June 17, 1983
- (2) Permit A016-21819
- (3) Additional information received on June 27, 1983 and July 14, 1983
- (4) Particulate stack test dated March 8, 9 and 10, 1983
- (5) Permit transfer form received on July 8, 1983

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-03

Permit/Certification Number:

A016-71214

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animals, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:

31-16-0067-03

Permit/Certification Number:

A016-71214

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.



Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-03

Permit/Certification Number: A016-71214

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
Particulate	17-2.650(2)(C)9.	16 lbs/hr 70 T/yr
Visible Emissions	17-2.650(2)(C)9.	10% Opacity

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).
3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.
4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983.

Particulates - - - - - 6 months  
 Visible Emissions - - - - - On request

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.
6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-03

Permit/Certification Number:

A016-71214

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

**SPECIFIC CONDITIONS:**

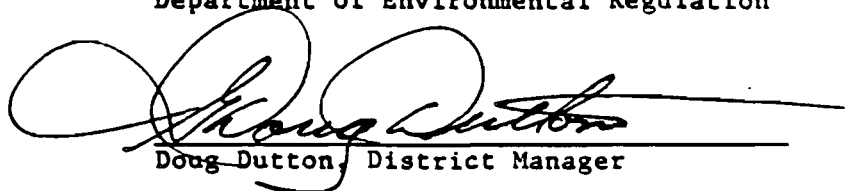
7. Operation is limited to 8760 hours per year.
8. An Operation and Maintenance Plan dated February 8, 1982 and revised by letter dated May 27, 1982 is attached pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.

Issued this 8 day of August, 1983

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
Donald C. Bayly, Division Chief

  
Doug Dutton, District Manager

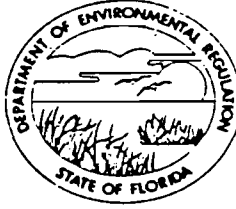
5 Pages attached

Page 5 of 5

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

**NORTHEAST DISTRICT**

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG DUTTON  
DISTRICT MANAGER

**PERMITEE:** Jacksonville Kraft Paper Co., Inc.  
9469 Eastport Road  
Jacksonville, Florida 32229

I.D. Number: 31-16-0067-(15-19)  
Permit/Certification Number: A016-71215  
Date of Issue: August 8, 1983  
Expiration Date: July 31, 1988  
County: Duval  
Latitude/Longitude: 30:25:15/81:36:00  
Section/Township/Range:  
Project: Five (5) Materials  
Storage Silos  
E-7441.750 N-3365.650

UTM

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-2 and 17-4. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of the following storage silos:

<u>SOURCE</u>	<u>MAXIMUM INPUT RATE LBS/HR</u>	<u>PARTICULATE CONTROL DEVICE</u>
Starch	23,000	Baghouse
Water Treatment Lime	6,000	Baghouse
Caustic Lime	6,000	Baghouse
Salt Cake I	8,000	Baghouse
Salt Cake II	5,800	Baghouse

Located at 9469 Eastport Road, Jacksonville, Florida 32229

Supporting documents are as follows:

- (1) Permit application received on July 17, 1983
- (2) Permit A016-14701
- (3) Additional information received on June 29, 1983
- (4) Permit transfer form received on July 8, 1983

PERMITTEE: Jacksonville Kraft Paper Co., Inc.

I.D. Number:  
Permit/Certification Number:  
Date of Issue:  
Expiration Date:

31-16-0067-(15-19)  
A016-71215  
August 8, 1983  
July 31, 1988

**GENERAL CONDITIONS:**

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.
6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and

PERMITTEE: Jacksonville, Kraft Paper Co., Inc.

I.D. Number:  
Permit/Certification Number:  
Date of Issue:  
Expiration Date:

31-16-0067-(15-19)  
A016-71215  
August 8, 1983  
July 31, 1988

b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
  - ( ) Compliance with New Source Performance Standards
14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
  - b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
  - c. Records of monitoring information shall include:
    - the date, exact place, and time of sampling or measurements;
    - the person responsible for performing the sampling or measurements;
    - the date(s) analyses were performed;
    - the person responsible for performing the analyses;
    - the analytical techniques or methods used; and
    - the results of such analyses.
15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-(15-19)

Permit/Certification Number: A016-71215

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

SPECIFIC CONDITIONS:

1. The maximum allowable emission rate for each pollutant is as follows:

POLLUTANT	EMISSION RATE	MAXIMUM ALLOWABLE EMISSION
Visible Emissions	17-2.650(2)(C)11.	*5% Opacity

\*Each source

2. Testing of emissions shall be accomplished at 90% to 100% of the permitted capacity. If testing is performed at a rate less than 90% of the permitted capacity, operation shall be limited to that capacity until such time as an acceptable test is performed at 90% to 100% of permitted capacity. When operation is restricted to a lower capacity, because of testing at such a level, the Department/Bio-Environmental Services Division, upon advanced notification, will allow operation at higher capacities if such operation is for demonstrating compliance at a higher capacity (never to exceed design capacity).

3. Notify the Jacksonville Bio-Environmental Services Division (BESD) 14 days prior to source testing. Copies of the test report(s) shall be submitted to BESD within 45 days after completion of testing.

4. The following pollutant(s) shall be tested at intervals indicated from the date of July 1, 1983.

\*Visible Emissions - - - - - 12 months

\*Each source Note: See Specific Condition No. 9

5. Submit an annual operation report to BESD for this source on the form supplied for each calendar year on or before March 1.

6. Any revision(s) to a permit (and application) must be submitted and approved prior to implementing.

Permittee: Jacksonville Kraft Paper Co., Inc.

I. D. Number:

31-16-0067-(15-19)

Permit/Certification Number: A016-71215

Date of Issue:

August 8, 1983

Expiration Date:

July 31, 1988

**SPECIFIC CONDITIONS:**

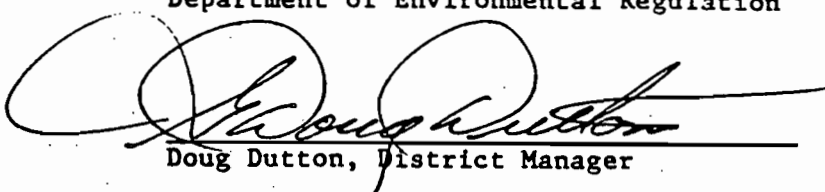
7. Operation is limited to 8760 hours per year.
8. An Operation and Maintenance Plan dated March 8, 1982 is attached pursuant to RACT rules, Chapter 17-2, Florida Administrative Code. Operation and Maintenance records outlined by this plan shall be kept for a minimum period of two (2) years and be made available to BESD upon request.
9. Visible emissions observations on each source shall be submitted to BESD within ninety (90) days of the issue date of this permit. These observations shall (be/have been) performed during calendar year 1983.

Issued this 8 day of August, 19 83

City of Jacksonville  
Bio-Environmental Services Division

State of Florida  
Department of Environmental Regulation

  
Donald C. Bayly, Division Chief

  
Doug Dutton, District Manager

5 Pages attached

Page 5 of 5

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT  
Post Office Box 1429  
Palatka, Florida 32078-1429

PERMIT NO. 2-031-0001U DATE ISSUED March 8, 1983

**A PERMIT AUTHORIZING:**

Use of surface water from the Broward River to be used for cooling water for power production in pulp & paper production.

**LOCATION:**

Section 46, Township 1 North, Range 27 East  
Duval County

**ISSUED TO:**  
(owner)

Seminole Kraft Corporation  
P. O. Box 26998  
Jacksonville, FL 32218

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This Permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

**PERMIT IS CONDITIONED UPON:**

See conditions on attached "Exhibit A", dated March 8, 1983

**AUTHORIZED BY: St. Johns River Water Management District**

Department of Resource Management

Governing Board

By:   
(Director)  
R. DUKE WOODSON

By:   
(Assistant Secretary)  
HENRY DEAN



"EXHIBIT A"

CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 2-031-0001U

SEMINOLE KRAFT CORPORATION

DATED MARCH 8, 1983

1. District authorized staff, upon proper identification, will have permission to enter, inspect and observe permitted and related facilities in order to determine compliance with the approved plans, specifications and conditions of this permit.
2. Nothing in this permit should be construed to limit the authority of the St. Johns River Water Management District to declare a water shortage and issue orders pursuant to Section 373.175, Florida Statutes, or to formulate a plan for implementation during periods of water shortage, pursuant to Section 373.246, Florida Statutes. In the event of a water shortage, as declared by the District Governing Board, the Permittee must adhere to reductions in water withdrawals as specified by the District.
3. Prior to the construction, modification, or abandonment of a well, the permittee must obtain a Water Well Construction Permit from the St. Johns River Water Management District pursuant to Chapter 40C-3, Florida Administrative Code. Construction, modification or abandonment of a well will require modification of the consumptive use permit when such construction, modification or abandonment is other than that specified and described on the consumptive use permit application form.
4. Leaking or inoperative well casings, valves, or controls must be repaired or replaced as required to put the system back in an operative condition acceptable to the District. Failure to make such repairs will be cause for deeming the well abandoned in accordance with Chapter 17.21.02(5), Florida Administrative Code and Chapter 373.309, Florida Statutes.
5. Permittee must mitigate any adverse impact caused by withdrawals permitted herein on legal uses of water existing at the time of permit application. The District has the right to curtail permitted withdrawal rates or water allocations if the withdrawals of water cause an adverse impact on legal uses of water which existed at the time of permit application. Adverse impacts are exemplified but not limited to:
  - (A) Reduction of well water levels resulting in a reduction of 10% in the ability of an adjacent well to produce water;
  - (B) Reduction of water levels in an adjacent surface water body resulting in a significant impairment of the use of water in that water body.
  - (C) Saline water intrusion or introduction of pollutants into the water supply of an adjacent water use resulting in a significant reduction of water quality; and
  - (D) Change in water quality resulting in either impairment or loss of use of a well or water body.
6. Permittee must mitigate any adverse impact caused by withdrawals permitted herein on adjacent land uses which existed at the time of permit application. The District has the right to curtail permitted withdrawal rates of water allocations if withdrawals of water cause an adverse impact on adjacent land use which existed at the time of permit application. Adverse impacts are exemplified by but not limited to:

2-031-0001U

- (A) Significant reduction in water levels in an adjacent surface water body;
  - (B) Land collapse or subsidence caused by a reduction in water levels; and
  - (C) Damage to crops and other types of vegetation.
7. The permittee must maintain records of total daily withdrawals from each source on a monthly basis for each year ending December 31. These records must be submitted to the District on Form EN-3 by January 31 of each year.
  8. This permit will expire seven years from the date of issuance.
  9. Maximum withdrawals must not exceed 15.7 BGAL/YR. (43 MGAL/D.)
  10. Use Classification is industrial.
  11. Source Classification is river.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT  
Post Office Box 1429  
Palatka, Florida 32078-1429

PERMIT NO. 2-031-0002U DATE ISSUED March 8, 1983

**A PERMIT AUTHORIZING:**

Use of groundwater from the Floridan Aquifer through seven eighteen-inch wells, three four-inch wells, one eight-inch well and one six-inch well to provide process water for Kraft Paper Production.

**LOCATION:**

Section 46, Township 1 North, Range 27 East  
Duval County

**ISSUED TO:**  
(owner)

Seminole Kraft Corporation  
P. O. Box 26998  
Jacksonville, FL 32218

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This Permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

**PERMIT IS CONDITIONED UPON:**

See conditions on attached "Exhibit A", dated March 8, 1983

**AUTHORIZED BY:** St. Johns River Water Management District  
Department of Resource Management      Governing Board

By:   
(Director)  
R. DUKE WOODSON

By:   
(Assistant Secretary)  
HENRY DEAN

"EXHIBIT A"

CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 2-031-0002U

SEMINOLE KRAFT CORPORATION

DATED MARCH 8, 1983

1. District authorized staff, upon proper identification, will have permission to enter, inspect and observe permitted and related facilities in order to determine compliance with the approved plans, specifications and conditions of this permit.
2. Nothing in this permit should be construed to limit the authority of the St. Johns River Water Management District to declare a water shortage and issue orders pursuant to Section 373.175, Florida Statutes, or to formulate a plan for implementation during periods of water shortage, pursuant to Section 373.246, Florida Statutes. In the event of a water shortage, as declared by the District Governing Board, the Permittee must adhere to reductions in water withdrawals as specified by the District.
3. Prior to the construction, modification, or abandonment of a well, the permittee must obtain a Water Well Construction Permit from the St. Johns River Water Management District pursuant to Chapter 40C-3, Florida Administrative Code. Construction, modification or abandonment of a well will require modification of the consumptive use permit when such construction, modification or abandonment is other than that specified and described on the consumptive use permit application form.
4. Leaking or inoperative well casings, valves, or controls must be repaired or replaced as required to put the system back in an operative condition acceptable to the District. Failure to make such repairs will be cause for deeming the well abandoned in accordance with Chapter 17.21.02(5), Florida Administrative Code and Chapter 373.309, Florida Statutes.
5. Permittee must mitigate any adverse impact caused by withdrawals permitted herein on legal uses of water existing at the time of permit application. The District has the right to curtail permitted withdrawal rates or water allocations if the withdrawals of water cause an adverse impact on legal uses of water which existed at the time of permit application. Adverse impacts are exemplified but not limited to:
  - (A) Reduction of well water levels resulting in a reduction of 10% in the ability of an adjacent well to produce water;
  - (B) Reduction of water levels in an adjacent surface water body resulting in a significant impairment of the use of water in that water body.
  - (C) Saline water intrusion or introduction of pollutants into the water supply of an adjacent water use resulting in a significant reduction of water quality; and
  - (D) Change in water quality resulting in either impairment or loss of use of a well or water body.
6. Permittee must mitigate any adverse impact caused by withdrawals permitted herein on adjacent land uses which existed at the time of permit application. The District has the right to curtail permitted withdrawal rates of water allocations if withdrawals of water cause an adverse impact on adjacent land use which existed at the time of permit application. Adverse impacts are exemplified by but not limited to:

2-031-0002U

- (A) Significant reduction in water levels in an adjacent surface water body;
  - (B) Land collapse or subsidence caused by a reduction in water levels; and
  - (C) Damage to crops and other types of vegetation.
7. The permittee must maintain records of total daily withdrawals from each source on a monthly basis for each year ending December 31. These records must be submitted to the District on Form EN-3 by January 31 of each year.
  8. If water source is from wells, Permittee must develop and implement a Wellfield Operating Program within six (6) months of permit issuance.
  9. This permit will expire seven years from the date of issuance.
  10. Maximum annual withdrawals must not exceed 9.13 BGAL/YR (25 MGD).
  11. Any water quality data collected for other agencies must be submitted to the District.
  12. Use Classification is commercial-industrial.
  13. Source Classification is confined aquifer.

**PERMIT CONDITIONS:**

7. The treatment facilities are to be operated continuously in such a manner the maximum level of efficiency is maintained at all times.
8. The discharge authorized by this permit shall be consistent at all times with the water quality standards set forth in Chapter 17-3, Florida Administrative Code.

Should conditions in the receiving stream warrant, the Permittee may be required by the DER to upgrade, reduce, or cease discharge of effluents approved by this permit and adopt an alternative method of disposal within a reasonable period of time.

9. Monitoring requirements and effluent limitations of this permit are subject to revision should EPA NPDES permit requirements change.
10. In the event the Permittee is temporarily unable to comply with any of the conditions of this permit, he shall notify the regional engineer of the DER immediately. Notification shall include pertinent information as to the cause of the problem and what corrective measures are being taken to prevent its recurrence.

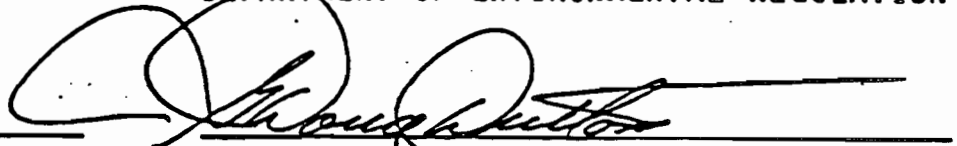
Issued this 8<sup>th</sup> day of Aug., 1983.

CITY OF JACKSONVILLE  
BIO-ENVIRONMENTAL SERVICES

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION



Donald C. Bayly  
Division Chief



G. Doug Dutton  
District Manager

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

BEST AVAILABLE COPY

SOUTHEAST DISTRICT

3428 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAMAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG DUTTON  
DISTRICT MANAGER

PERMITTEE:

Mr. J. Michael Watson, Attorney  
Jacksonville Kraft Paper Co., Inc.  
2400 Gulf Life Tower  
Jacksonville, Florida 32207

L.D. Number: GMS 3116P06063  
Permit/Certification Number: IO16-71200  
Date of Issue: August 8, 1983  
Expiration Date: August 2, 1988  
County: Duval  
Latitude/Longitude: 30°24'55"N/81°35'45"W.  
Section/Township/Range:  
Project: JACKSONVILLE KRAFT PAPER CO., INC.  
HWTP O.P.

This permit is issued under the provisions of Chapter(s) 403, Florida Statutes, and Florida Administrative Code Rule(s) 17-3, 17-4, 17-6, 17-16, 17-19. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the operation of a 20.0 MGD Industrial Wastewater Treatment System consisting of clarifier, settling pond, and aeration pond, discharging to St. Johns River, serving Jacksonville Kraft Paper Company, Inc.

Located at 9469 Eastport Road, Jacksonville, Duval County, Florida.

In accordance with application dated June 17, 1983.

BEST AVAILABLE COPY

PERMITTEE: Mr. J. Michael Watson, Attorney I.D. Number: GMS 3116P06063  
JACKSONVILLE KRAFT PAPER CO., Permit/Certification Number: IO16-71200  
INC. Date of Issue: August 8, 1983  
Expiration Date: August 2, 1988

PERMIT CONDITIONS:

The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.

As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.

This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.

This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:

- a. Having access to and copying any records that must be kept under the conditions of the permit;
- b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
- c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:

- a. a description of and cause of non-compliance; and



BEST AVAILABLE COPY

SEE: Mr. J. Michael Watson, Attorney I.D. Numbers: GMS 3116P06063  
JACKSONVILLE KRAFT PAPER CO., Permit/Certification Numbers: IO16-71200  
INC. Date of Issue: August 8, 1983  
Expiration Date: August 2, 1988

the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.

The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.

This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-A.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.

This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.

This permit also constitutes:

- ( ) Determination of Best Available Control Technology (BACT)
- ( ) Determination of Prevention of Significant Deterioration (PSD)
- ( ) Certification of Compliance with State Water Quality Standards (Section 401, PL 92-500)
- ( ) Compliance with New-Source Performance Standards

The permittee shall comply with the following monitoring and record keeping requirements:

- 1. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.
- 2. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rules.
- 3. Records of monitoring information shall include:
  - the date, exact place, and time of sampling or measurements;
  - the person responsible for performing the sampling or measurements;
  - the date(s) analyses were performed;
  - the person responsible for performing the analyses;
  - the analytical techniques or methods used; and
  - the results of such analyses.

When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts, or information shall be submitted or corrected promptly.

ATTN: Mr. J. Michael Watson, Attorney  
JACKSONVILLE KRAFT PAPER CO.,  
INC.

I.D. Number:  
Permit/Certification Number:  
Date of Issue:  
Expiration Date:

GMS 3116P06063  
IO16-71200  
August 8, 1983  
August 2, 1988

**PERMIT CONDITIONS:**

1. Operation reports containing results of the following examinations shall be submitted on a bi-monthly basis to both the Jacksonville Department of Health, Welfare and Bio-Environmental Services and DER.\*

<u>Sampling Point</u>	<u>Constituents to Be Examined</u>	<u>Minimum Frequency</u>	<u>Sample Type</u>
Treated Process Effluent	5-day BOD	Daily	24-Hr. Composite
	Totl. Susp. Solids	Daily	24-Hr. Composite
	pH	Continuous	Recorder
	Temperature	2/week	Grab
	Flow	Continuous	Recorder

Contaminant discharges shall not exceed the following limitations:

<u>Process Effluent</u>	<u>Daily Ave. (lbs/day)</u>	<u>Daily Max. (lbs/day)</u>	<u>pH Units</u>
5-day BOD	7,840	15,680	
Total Suspended Solids	16,800	33,600	
pH Range			.6.0 - 9.0
Floating Solids or Visible Foam	- None other than in trace amounts.		

2. All records and data relating to the above item(s) shall be made available for inspection upon request by BESD and/or DER.\*
3. Waste sludge or other solid wastes shall not be discharged into the receiving waters either directly or indirectly.
4. No wastewater shall be allowed to deliberately bypass the existing pollution control facility without the prior approval of the DER.
5. This permit is valid only for the specific processes and operations (including the types and quantities of raw materials and chemicals) indicated in your application. Any changes in these which may result in altered characteristics of the discharge are not permitted without the prior approval of the DER and modification of this permit.
6. The operation of the pollution control facilities shall be under the full-time supervision of a person(s) who is qualified by formal training and/or practical experience in the field of Water Pollution Control.

\*DER: Department of Environmental Regulation  
BESD: Bio-Environmental Services Division

NPDES



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET  
ATLANTA, GEORGIA 30363

AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended,  
(33 U.S.C. 1251 et. seq; the "Act")

The Jacksonville Kraft Paper Company  
P. O. Box 18019  
Jacksonville, FL 32229

is authorized to discharge from a facility located at

9469 Eastport Road  
Jacksonville, Duval County, Florida 32218

to receiving waters named

St. Johns River - latitude 30-24-55  
- longitude 81-35-45

in accordance with effluent limitations, monitoring requirements and other  
conditions set forth in Parts I, II, and III hereof. The permit consists of  
this cover sheet, Part I 3 page(s), Part II 15 page(s) Part III 1 page,  
and Part IV 2 pages.

This permit shall become effective on October 1, 1983 and modified  
effective February 20, 1985.

This permit and the authorization to discharge shall expire at midnight,  
September 30, 1988.

February 20, 1985  
Date Signed

*John J. Martin for*  
Frank J. Silva, Acting  
Director  
Water Management Division

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - 001

These effluent limitations are to be achieved by the effective date of this permit and shall remain in effect until permit expiration for monitoring point Serial Number 001.

1. Such discharges shall be limited and monitored by the permittee as specified below:

<u>PARAMETER</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIRMENTS</u>		
	kg/day (lbs/day)		Other Units (Specify)		Measurement <u>Frequency</u>	Sample <u>Type</u>	Sampling <u>Point</u>
	Daily Avg	Daily Max	Daily Avg	Daily Max			
Total Chlorine Residual (mg/l)	-	-		0.2	1/Year <u>6</u> /	Grab <u>5</u> /	001

2. There shall be no discharge of floating solids or visible foam in other than trace amounts.
3. Additional requirements in the attached state certification supersede any less stringent requirements listed here in.
4. Samples taken in compliance with the monitoring requirements listed herein shall be taken at a point (001) after mixing of all spent cooling water with the process wastewater, but prior to mixing with the receiving waters.
5. Chlorine samples will be taken during the time period affected by elemental chlorine addition.
6. If at any time cooling water, affected by elemental chlorine addition, is discharged when process wastewater is not being discharged the above limits apply and monitoring frequency shall be 1/day, for as long as this condition exists.
7. Monitoring shall be in January and reported on first calendar quarter discharge monitoring reports.

PART I

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - 001-a

These effluent limitations are to be achieved by the effective date of this permit and shall remain in effect until permit expiration for monitoring point Serial Number 001-a.

1. Such discharges shall be limited and monitored by the permittee as specified below:

<u>PARAMETER</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>		
	lbs/day		Other Units (Specify)		Measurement Frequency	Sample Type	Sampling Point
	Daily Avg	Daily Max	Daily Avg	Daily Max			
Flow, M <sup>3</sup> /Day (MGD)	-	-	-	Continuous	Recorder	001-a	
Biochemical Oxygen Demand (5 day)	7840	15860	-	-	Daily	24 hr. Composite	001-a
Suspended Solids	13000	33600	-	-	Daily	24 hr. Composite	001-a
pH (Standard Units)			(See item 2 below)		Continuous	Recorder	001-a
Temperature (°C, °F)					2/Week	Grab	001-a

- The pH shall not be less than 6.0 standard units or greater than 9.0 standard units.
- There shall be no discharge of floating solids or visible foam in other than trace amounts.
- Additional requirements in the attached State certification supersede any less stringent requirements listed here in.
- Samples taken in compliance with the monitoring requirements listed above shall be taken at a point (001-a) after collection and treatment of all process wastewater but prior to mixing with the non-contact cooling water discharge.

PART I

C. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS - 001-b

These effluent limitations are to be achieved by the effective date of this permit and shall remain in effect until permit expiration for monitoring point Serial Number 001-b.

1. Such discharges shall be limited and monitored by the permittee as specified below:

<u>PARAMETER</u>	<u>DISCHARGE LIMITATIONS</u>				<u>MONITORING REQUIREMENTS</u>		
	kg/day (lbs/day)		Other Units (Specify)		<u>Measurement Frequency</u>	<u>Sample Type</u>	<u>Sampling Point</u>
	Daily Avg	Daily Max	Daily Avg	Daily Max			
Flow, M <sup>3</sup> /Day (MGD)	-	-	-	-	1/Month	24 hr Representative	001-b
Temperature	-	-	35°C(95°F) 38°C(100°F)		2/Week	Grab	001-b

2. There shall be no discharge of floating solids or visible foam in other than trace amounts.
3. Additional requirements in the attached state certification supersede any less stringent requirements listed here in.
4. Samples taken in compliance with the monitoring requirements listed herein shall be taken at a point (00) 4) after collection of all spent cooling water but prior to mixing with the process wastewater.

BEFORE THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL REGULATION;  
CITY OF JACKSONVILLE  
BIO-ENVIRONMENTAL SERVICES  
DIVISION

IN THE OFFICE OF THE  
NORTHEAST DISTRICT

OGC Case No.

Complainant,

vs.

SEMINOLE KRAFT CORPORATION,

Respondent.

---

CONSENT ORDER

This Consent Order is made and entered into between the State of Florida Department of Environmental Regulation (Department), the City of Jacksonville, Bio-Environmental Services Division (BESD) and Seminole Kraft Corporation (Respondent), 9469 Eastport Road, Jacksonville, Florida 32218.

The Department, BESD and Respondent agree to the following:

1. The Department is the State agency and BESD is an approved local program pursuant to Section 403.182, Florida Statutes, empowered with the duty to enforce the provisions of Chapter 403, Florida Statutes (FS), and the rules promulgated thereunder in Florida Administrative Code (FAC) Title 17.
2. Respondent is a corporation authorized to do business in Florida. Respondent intends to purchase and operate a kraft sulfate paper mill (mill) formerly known as Jacksonville Kraft Paper Company, Inc., (JKPC) located at 9469 Eastport Road, Jacksonville, Duval County, Florida. A list of the individual emission sources at the mill and their corresponding permit numbers is attached and incorporated herein as Exhibit I. Respondent's local representative upon closing will be Mr. Frank Lee.
3. On or about October 15, 1985 Jacksonville Kraft ceased operation of the mill and it has not operated since then. The facility, including both the operational and emission control equipment, has substantially deteriorated since production operation ceased.

4. The rules do not specifically provide for the restarting of industrial facilities abandoned and unused over a period of time. Respondent has elected to apply for transfer of the operating permits previously held by JKPC. The purpose of this Consent Order is not to resolve any past or pending violations but to insure the proper rehabilitation, start up and operation of the facilities.

5. In conjunction with the operation of the mill, Respondent intends to operate the No. 1, No. 2 and No. 3 Power Boilers (power boilers) which emit pollutants into the ambient atmosphere. Operation of the power boilers is authorized by the Department under Operation Permits No. A016-71201, A016-71202, and A016-71203, respectively. Specific Condition No. 1 of these permits gives the maximum allowable emission rate for particulate matter (PM) emissions (non soot-blowing) as 0.10 lb/million BTU heat input.

6. Variance No. VE-16-141, granted by the Department, allowed JKPC to operate the power boilers at PM emission levels not to exceed 0.19 lb/million BTU heat input until September 15, 1985, at which time JKPC was to achieve the PM emission limiting standard required by FAC Rule 17-2.650(2)(c)2.

7. Respondent retained the firm of BE&K Engineering to do an independent and detailed evaluation of the stationary air emission sources located in the Power and Recovery area of the mill. That evaluation (Stone Container, Jacksonville, Florida, Power/Recovery Area Study No. 50-6200160-6-205 (Report)) confirmed that extensive repairs or renovations are necessary to the individual sources prior to the start-up in order to assure safe, commercially reliable and environmentally acceptable operation. A copy of the summary of the report is attached and incorporated herein as Exhibit II.

8. Each of Respondent's sources, as listed in Exhibit I, is classified as a major source, pursuant to Rule 17-2.100(112). F.A.C.



10. Respondent's facility is located in an area designated as unclassifiable for the pollutant sulfur dioxide (So<sub>2</sub>), pursuant to rule 17-2.430(2)(a).

11. Respondent's facility is located in an area of influence for particulate matter, as defined by Rule 17-7.100(17), F.A.C., in that it is within the locus of all points which are fifty (50) kilometers outside the boundary of that part of downtown Jacksonville, Florida, which is designated in Rule 17-2.410(2)(a)2, F.A.C., as a nonattainment area for particulate matter.

12. As a result of negotiations between the Department, BESD and the Respondent and in consultation with the U. S. Environmental Protection Agency, Region IV, the issues raised herein have been resolved by the signatories to this Order.

THEREFORE, having reached a resolution of the matter, pursuant to FAC Rule 17-103.110, the Department, BESD and Respondent mutually agree, and it is

ORDERED:

13. This Agreement shall take effect only upon transfer of title to the property from JKPC to Respondent which will occur upon financial closing. No source of air emissions will be operated by Seminole Kraft until this agreement is in effect. Should such transfer not take place this Agreement shall be null and void.

14. Prior to start-up, Respondent shall complete all environmentally related repairs, replacements, improvements and work as outlined in the BE&K Report. Respondent shall provide BESD and the Department with a report signed by a Professional Engineer, certifying the satisfactory completion of the work outlined in the Report. The Professional Engineer chosen to perform the review shall meet with BESD and Department staff prior to commencement of said review. Respondent shall review all other permitted sources and make the necessary repairs to assure their proper and efficient operation.

15. Prior to start-up of the digester systems, Respondent shall repair to original specification or its equivalent, the system for collection and transport of non-condensable gases

(NCG) from the existing digestors and tall oil system. The system for collection and transport of non-condensable gases includes the hot water accumulator and all appurtenances and ductwork between the accumulator and lime kilns. Within thirty (30) operating days of the first digester cook, Respondent shall attain full operational status of the NCG incineration system. Within one hundred twenty (120) operating days of start-up, Respondent will prepare a study of the NCG system in compliance with Rule 17-2.960, F.A.C. and if necessary, a schedule for achieving compliance with said Rule.

16. Respondent shall maintain and make available for inspection, records of all moneys spent on each source during repair, replacement, reconstruction or modification as outlined in paragraph 13 above, for a period of three (3) years.

17. Respondent shall notify the BESD and the Northeast District air engineers or their representatives, by telephone, fifteen (15) days prior to start-up of each source listed in Exhibit I and mail written notification within three (3) work days thereafter.

18. Respondent's sources are, from the start-up date, subject to visible emission (VE) limitations as set forth in Chapter 17-2, F.A.C., and Specific Conditions of the Operation Permits listed in Exhibit I.

19. Respondent shall conduct VE tests on each power boiler within 20 operating days from start-up of each power boiler, and shall submit the results of each test to the BESD within five (5) workdays after the tests are conducted.

20. For the purposes of this Consent Order an operating day for any individual source shall be defined as:

Any 24-hour period beginning at 7:00 a.m. during which any of the following has occurred for that source:

- A. Power Boilers, Bark Boilers and Lime Kilns- any Source was fired with any amount of fuel for any part of that 24 hour period except for the purposes of curing the refractory, boiling out the system or steam line flushing. The total period for refractory curing, boil out or steam line flushing shall be

limited to 192 hours and shall be documented for review by the Department.

- B. Smelt Dissolving Tanks (SDT), digestors and tall oil plant - any Source has been operated during any part of that 24 hour period to produce green liquor, pulp or tall oil, respectively.
- C. Recovery Boilers - any source was fired with any amount of black liquor or fired with oil during any part of that 24 hour period in excess of 192 hours. Documentation of oil firing time shall be retained for review by the Department and BESD.

21. Respondent shall install new total reduced sulfur (TRS) continuous emission monitors (CEM) on each lime kiln and each recovery boiler within 120 operating days after start-up of that unit. Respondent shall certify each recovery boiler TRS CEM within 150 operating days after start-up of that recovery boiler but no later than November 12, 1987. Respondent shall demonstrate that the lime kiln CEMS meet the requirements of applicable performance tests specified in 40 CFR, Part 60, Appendix B, no later than 150 operating days after start-up.

22. Respondent shall demonstrate compliance with the TRS emission limiting standards for the Smelt Dissolving Tanks pursuant to Rule 17-2.600(4)(c)4, F.A.C., 502 days after start-up but not later than twelve (12) months earlier than required by the rule.

23. Respondent shall demonstrate compliance with the TRS emission limiting standards for the multiple effect evaporators pursuant to Rule 17-2.600(4)(c)1, F.A.C., by 622 days after start-up but not later than nine months earlier than required by the rule.

24. All other TRS sources addressed by 17-2 must meet the applicable TRS emission limiting standards no later than the date required in the TRS rules.

25. Respondent shall test each source listed in Exhibit I in accordance with the schedule and test methods attached and incorporated herein as Exhibit III.

26. Respondent shall implement the compliance schedule, attached and incorporated herein as Exhibit IV, for each power boiler which fails to comply with the PM emission limit of 0.10 lbs/million BTU heat input during the initial compliance test. The Respondent retains the right to demonstrate compliance with emission limitations earlier than the time schedule in Exhibit IV.

27. Respondent shall start the boilers using fuel oil containing a maximum of 1.0% sulfur by weight. Respondent shall continue using oil with a maximum of 1% sulfur content by weight unless it demonstrates compliance with particulate matter limits at a higher level of sulfur. Any plan to demonstrate particulate compliance while using higher sulfur content oils shall be reviewed and approved by the Department and BESD prior to commencement of testing. The Department and BESD agree to perform such a review in a timely manner. In no case shall a higher sulfur content of oil be used than allowed by permit. Respondent shall test the oil, which shall be sampled at a mutually acceptable location, for sulfur content on a weekly basis for the first six months and monthly thereafter using any appropriate ASTM method or any other mutually acceptable method. Records of test results shall be retained for two years and shall be made available for review by the Department and BESD upon request.

28. Within 150 operating days of completion of the installation of the lime kiln CEMS described in paragraph 21 above, Respondent will complete a study defining the interim TRS emission limit which can be achieved with the present system through the application of Best Management Practices (BMP), which will be defined by the Department, BESD, and the Respondent prior to the beginning date of the study in this paragraph. The interim TRS limits will be established using the average of the measured 12 hour periods plus an amount which establishes an interim standard level that is expected to statistically occur 95% of the time (approximately 2 standard deviations).

29. Respondent agrees to use BMP to meet the interim emission limitations to be set pursuant to paragraph 27 and shall, beginning with establishment of the interim emission limitations, submit quarterly excess emission reports until compliance is demonstrated as required by Rules 17-2.600(4)(c)5 and 17-2.960, F.A.C. Compliance shall be determined through the EPA Reference Method 16 Test. Should the quarterly twelve (12) hour averages indicate less than 95% compliance with the interim emission limitation, Respondent will perform, if deemed necessary, a Method 16 Test to determine compliance with the interim emission limitation. Failure to meet the interim emission limitation by use of method 16 is an enforceable violation.

30. Prior to start-up of the recovery boiler Respondent shall establish operating conditions through engineering calculations at which one side of the Electrostatic Precipitator (ESP) and the scrubber can maintain compliance. After start-up of the source, the operating rate predicted by the calculations will be the highest rate at which the recovery boiler will operate while using only one side of the ESP until tests are conducted to confirm the level of estimated emissions. Respondent shall, within one year of the start-up date of each recovery boiler, conduct reference method tests to confirm the estimated emissions. If the tests do not indicate compliance while operating with only one side of the ESP and the scrubber, operating conditions will be adjusted so that the unit attains compliance with the particulate emission limitation.

31. Respondent shall submit, to BESD, the additional information requested in BESD's letter dated March 6, 1986 (attached and incorporated herein as Exhibit V) within 15 days of transfer of title to the Respondent.

32. Respondent shall submit, on or before February 12, 1987, to BESD and the Department, emission estimates (including calculations) as follows for each source:

Allowable	lbs/hr + T/yr
Potential (controlled)	lbs/hr + T/yr + concentration
Potential (uncontrolled)	lbs/hr + T/yr + concentration
Estimated Actual 1987	T/yr

The following pollutants shall be included in the emission estimates:

- Carbon Monoxide
- Sulfur Dioxide
- Particulate Matter
- Nitrogen Oxides
- Volatile Organic Compounds
- Lead
- Total Reduced Sulfur

33. If the data required pursuant to paragraphs 31 and 32 above is submitted late, Respondent shall pay the following to BESD and the Department:

- One (1) through ten (10) days late - \$100.00/day
- More than ten (10) days late - \$500.00/day  
for each day beyond ten (10) days late

34. If Respondent fails to meet the milestone dates in the compliance schedule in Exhibit IV, Respondent shall pay the following sums to BESD and the Department:

One (1) to ten (10) days late - \$100.00/day  
Eleven (11) to thirty (30) days late - \$500.00/day  
Thirty-one (31) or more days late - \$2,500.00/day

Any sum levied under this paragraph for non-compliance with the milestones shall be computed individually for each milestone in Exhibit IV and will accrue daily for failure to meet that milestone only until that milestone is met or until the final compliance date (day 365) is reached. No sum shall be imposed if final compliance is achieved on or before day 365.

35. If Respondent fails to conduct the compliance testing within the times specified in Exhibit III the sum of \$1,000 dollars per day per source which is not tested by the specified dates shall be paid.

36. The Department and BESD specifically reserve the right to take enforcement action for failure to meet the final compliance date specified in Exhibit IV or to demonstrate compliance with any applicable emission limitation.

37. This Consent Order shall terminate upon the last date specified or implied (November 12, 1989) in this Order or upon the written agreement of the parties.

38. Respondent agrees to apply for transfer of all air permits to Seminole Kraft within thirty (30) days of transfer of title to Respondent. The Department agrees to process the request in a timely manner in accordance with Rule 17-4.12, F.A.C.

39. If any event occurs which causes delay or the reasonable likelihood of delay in the achievement of the requirements of this Consent Order, Respondent shall have the burden of proving that the delay was or will be caused by circumstances beyond the reasonable control of Respondent, and could not have been or can not be overcome by due diligence. Upon occurrence of the event Respondent shall promptly notify the Department orally and, shall within seven (7) calendar days, notify the Department in writing of the anticipated length and cause of delay, the measures taken or to be taken to prevent or minimize the delay, and the time table by which Respondent intends to implement these measures. If Respondent can demonstrate to the satisfaction

of the Department and BESD that the delay or anticipated delay has been or will be caused by circumstances beyond the reasonable control of Respondent, the time for performance hereunder shall be extended for a period equal to the delay resulting from such circumstances. Such extension shall be confirmed by letter from the Department accepting or if necessary modifying the extension request. Respondent shall adopt all reasonable measures necessary to avoid or minimize delay. Increased costs of performance of any of the activities set forth in this Consent Order or changed economic circumstances shall not be considered circumstances beyond the control of Respondent.

40. Within thirty (30) days of an uncontested violation or entry of a final order requiring payment, Respondent shall pay the Department 50% of the accrued sums stated in paragraphs 33, 34 and 35 above by certified check or money order made payable to the Department of Environmental Regulation, and submitted to the Department of Environmental Regulation, Northeast District, 3426 Bills Road, Jacksonville, Florida 32207. Concurrently, Respondent shall pay BESD 50% of the accrued sums in paragraphs 33, 34 and 35 above, made payable to the City of Jacksonville, Air Pollution Trust Fund, and submitted to Bio-Environmental Services Division, Air Pollution Control, 515 West 6th Street, Jacksonville, Florida 32206.

41. Respondent shall allow authorized representatives of the Department and BESD access to the property at reasonable times for purposes of determining compliance with this Consent Order and the rules and regulations of the Department.

42. Nothing herein shall be construed as an admission of liability by Respondent nor as a release of any liability by the Department or BESD.

43. The Department and BESD hereby expressly reserve the right to initiate appropriate legal action to prevent or prohibit the future violation of applicable statutes, or the rules promulgated thereunder.

44. Respondent reserves the right to request a hearing regarding any future allegations of violations or controversies regarding this Order.

45. The Department and BESD, for and in consideration of the complete and timely performance by Respondent of the obligations agreed to in this Consent Order, hereby waive their right to seek judicial imposition of damages against Seminole Kraft, or civil or criminal penalties for violations outlined in this Consent Order. Respondent waives its right to a hearing or judicial review of the terms of this Consent Order, except in cases of third party intervention.

46. Except as set forth herein, entry of this Consent Order does not relieve Respondent of the need to comply with all other applicable federal, state, or local laws, regulations, or ordinances. The entry of this Consent Order does not abrogate the rights of substantially affected persons who are not parties to this Consent Order, pursuant to Chapter 120, Fla. Stat.

47. The terms and conditions set forth in the Consent Order may be enforced in a court of competent jurisdiction pursuant to Sections 120.69 and 403.121, Fla. Stat. Failure to comply with the terms of this Consent Order shall constitute a violation of Section 403.161(1)(b), Fla. Stat.

48. Respondent is fully aware a violation of the terms of this Consent Order may subject Respondent to judicial imposition of damages, civil penalties of up to \$10,000 per day, per offense, and criminal penalties.

49. No modification of the terms of this Consent Order shall be effective until reduced to writing and executed by both the Respondent, BESD and the Department.

50. Persons other than the parties to this Consent Order whose substantial interests are affected by this Consent Order have a right, pursuant to Section 120.57, Fla. Stat., to petition for an administrative determination (hearing). The petition must conform to the requirements of Chapters 17-103, F.A.C., and 28-5, F.A.C., and must be filed (received) with the Department's Office of General Counsel, 2600 Blair Stone



Road, Tallahassee, Florida 32301, within fourteen (14) days from receipt of this notice. Failure to file a petition within the fourteen (14) days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, Fla. Stat.

51. This Consent Order is final agency action of the Department pursuant to Section 120.69, Fla. Stat. and F.A.C. Rule 17-103.110(3), F.A.C., and it is final and effective on the date filed with the Clerk of the Department unless a Petition for Administrative Hearing is filed in accordance with Chapter 120, Fla. Stat. Upon the timely filing of a petition this Consent Order will not be effective until further order of the Department.

FOR RESPONDENT:

DATE \_\_\_\_\_

Seminole Kraft Corporation  
9469 Eastport Road  
Jacksonville, Florida 32218

DONE AND ORDERED this \_\_\_\_\_ day of \_\_\_\_\_,  
in Jacksonville, Florida.

Donald C. Bayly  
Division Chief  
  
City of Jacksonville  
Bio-Environmental Services  
Division  
515 West 6th Street  
Jacksonville, Florida 32206

Victoria J. Tschinkel  
Secretary  
  
State of Florida Department  
of Environmental Regulation  
2600 Blair Stone Road  
Tallahassee, Florida 32314  
  
Telephone: (904) 488-4805

Copies furnished to:

Office of General Counsel, DER  
Bio-Environmental Services Division, City of Jacksonville  
Seminole Kraft Corporation  
Terry Cole, Oertel & Hoffman, P. A.

EXHIBIT I

<u>SOURCE</u>	<u>PERMIT NO.</u>
Power Boiler No. 1	AO16-71201
Power Boiler No. 2	AO16-71202
Power Boiler No. 3	AO16-71203
Bark Boiler No. 1	AO16-71206
Bark Boiler No. 2	AO16-71207
Recovery Boiler No. 1	AO16-71208
Recovery Boilwer No. 2	AO16-71209
Recovery Boiler No. 3	AO16-71210
Smelt Dissolving Tank No. 1	AO16-71211
Smelt Dissolving Tank No. 2	AO16-71212
Smelt Dissolving Tank No. 3	AO16-71213
Lime Kiln No. 1	AO16-71214
Lime Kiln No. 2	AO16-71204
Lime Kiln No. 3	AO16-71205

EXHIBIT III

<u>SOURCE(S)</u>	<u>SCHEDULE (operating days)</u>	<u>POLLUTANT</u>	<u>TEST METHOD</u>
3 Power Boilers	One Power Boiler within 60 days of start-up. The other two Power Boilers within 120 days of start-up	PM	EPA Reference Method 5 or 17
	Each Power Boiler within 20 days of start-up and concurrent with PM test	VE	EPA Reference Method 9
2 Bark Boilers	One Bark Boiler within 60 days of start-up. The other Bark Boiler within 120 days of start-up	PM	EPA Reference Method 5
		VE	EPA Reference Method 9
3 Recovery Boilers	One Recovery Boiler within 90 days of start-up. The other two Recovery Boilers within 120 days of start-up	PM	EPA Reference Method 5
3 Lime Kilns	One Lime Kiln within 90 days after start-up. The other two Lime Kilns within 120 days after start-up	PM	EPA Reference Method 5
		VE	EPA Reference Method 9
3 Smelt Dissolving Tanks	One Smelt Dissolving Tank within 90 days of start-up. The other two within 120 days of start-up	PM	EPA Reference Method 5
		VE	EPA Reference Method 9

Note: All testing shall be completed as per above schedule.

Note: Special testing condition outlined in Table I, FAC Rule 17-2.700, shall be followed as applicable to each source and test method.

EXHIBIT IV

COMPLIANCE SCHEDULE - POWER BOILERS

Milestones

- Day 1 -date that the plan(s) are due to DER for installation of particulate emissions add-on control equipment.
- Day 90 -let bids for equipment
- Day 120 -begin on-site construction
- Day 300 -complete on-site construction
- Day 365 - demonstrate final compliance by reference test methods

Note: Day 1 begins 90 days after a failed stack test.

DEPARTMENT OF HEALTH, WELFARE  
& BIO-ENVIRONMENTAL SERVICES  
Bio-Environmental Services Division  
Air and Water Pollution Control

March 6, 1986



Mr. R. G. Carovano  
Jacksonville Kraft Paper Company  
P. O. Box 18019  
Jacksonville, FL 32219

Re: Operating Permit Applications - Recovery Boilers, Lime Kilns,  
Smelt Dissolving Tanks, Digester System, Tall Oil Plant

Dear Mr. Carovano:

The applications for the following operating permit applications have been determined incomplete and have been placed in abeyance pending receipt/clarification and acceptance of the following information:

A. Digester System

1. A check (processing fee) in the amount of \$100.00 payable to the Florida Department of Environmental Regulation.
2. A check (application review fee) for an amount determined according to the attached schedule payable to the Tax Collector-City of Jacksonville.
3. Please provide:
  - a) Digester dimensions
  - b) Volume of wood chips per batch and % moisture (by weight)
  - c) Cooking (batch) time
  - d) Cross sectional sketch of digester
  - e) Blow tank dimensions
  - f) Cross sectional sketch of blow tank
  - g) Hot water accumulator dimensions.
  - h) Cross sectional sketch of hot water accumulator
  - i) Calculations demonstrating:
    - i) Maximum, minimum, and average gas flow rate (ACFM & DSCFM), and maximum, minimum, and average velocities, out of each hot water accumulator
    - ii) Gas exit temperature into non-condensable gas system



Mr. R. G. Carovano

March 6, 1986

j) Average length of each blow

k) No. of blows per day; average and maximum

l) What is average and maximum no. of concurrent blows into each blow tank?

4. When and for how long during each cooking batch do the digesters vent to the condensers (turpentine system)?
5. A professional engineer's signature and seal is required for the digester permit application. An alternative to the statement in Section I.B. is attached.
6. Three additional copies of the permit application.
7. Signature and date of applicant, and date signed.
8. Operation and maintenance procedures which will be (are) implemented to minimize TRS emissions until such time as final compliance with Rule 17-2.600(4), Florida Administrative Code (FAC), is required.
9. Calculations (or test results) verifying (demonstrating) current TRS emission levels.
10. Calculations providing allowable TRS emission rates when final compliance with Rule 17-2.600(4), FAC, is required.  
NOTE: Allowable emissions should be documented in ppm (corrected), lbs/hr and T/yr.
11. Sketch, flow diagram, and operational description of non-condensable gas system. Include pressure relief systems and settings.

B. Multiple Effect Evaporators (MEE) (Nos. 1, 2, and 3)

1. A check (processing fee) in the amount of \$100.00 payable to the Florida Department of Environmental Regulation for each MEE.
2. A check (application review fee) in the amount of \$750.00 payable to the Tax Collector-City of Jacksonville for each MEE.
3. Signature of applicant, and date signed.
4. A professional engineer's signature and seal is required for each MEE permit application. An alternative to the statement in I. B. is attached.
5. Please indicate specific gravity of:
  - a) Black Liquor fed into MEE
  - b) Black Liquor discharged from MEE

March 6, 1986

6. Please provide:
  - a) MEE dimensions.
  - b) Is multiple effect evaporation a batch or continuous operation?
  - c) Identify emission point(s) on sketch
  - d) Emission stack geometry required by Section III.H.
7. Operation and maintenance procedures which will be (are) implemented to minimize TRS emissions until such time as final compliance with Rule 17-2.600(4), FAC, is required.
8. Calculations (or test results) verifying (demonstrating) current TRS emissions levels.
9. Calculations providing allowable TRS emission rates when final compliance with Rule 17-2.600(4), FAC, is required.  
NOTE: Allowable emissions should be documented in ppm (corrected), lbs/hr and T/yr.
10. Information on FW spray and FW jets. Is this the cooling tower? Please describe purpose of system.

C. Tall Oil Plant

1. A check (processing fee) in the amount of \$100.00 payable to the Florida Department of Environmental Regulation.
2. A check (application review fee) for an amount determined according to the attached schedule payable to the Tax Collector-City of Jacksonville.
3. Signature of applicant, and date signed.
4. A professional engineer's signature and seal is required for the permit application. An alternative to the statement in I. B. is attached.
5. Operation and maintenance procedures which will be (are) implemented to minimize TRS emissions until such time as final compliance with Rule 17-2.600(4), FAC, is required.
6. Calculations (or test results) verifying (demonstrating) current TRS emissions levels.
7. Calculations providing allowable TRS emission rates when final compliance with Rule 17-2.600(4), FAC, is required.  
NOTE: Allowable emissions should be documented in ppm (corrected), lbs/hr and T/yr.

8. Please indicate if any tanks (storage/operation) have the potential to emit TRS compounds to the atmosphere. If so, please list the tanks and describe emission point(s), and provide quantities of TRS emissions in ppm (corrected) lbs/hr and T/yr.

The following permit revision applications have been deemed incomplete and have been placed in abeyance pending receipt/clarification and acceptance of the information below:

A. Lime Kiln No. 1

1. Operation and maintenance procedures which will be (are) implemented to minimize TRS emissions until such time as final compliance with Rule 17-2.600(4), FAC, is required.
2. Calculations (or test results) verifying (demonstrating) current TRS emissions levels.
3. Calculations providing allowable TRS emission rates when final compliance with Rule 17-2.600(4), FAC, is required.  
NOTE: Allowable emissions should be documented in ppm (corrected), lbs/hr and T/yr.

B. Lime Kiln No. 2

The same information is required as in A. above.

C. Lime Kiln No. 3

The same information is required as in A. above.

D. Smelt Dissolving Tank No. 1

The same information is required as in A. above.

E. Smelt Dissolving Tank No. 2

The same information is required as in A. above.



March 6, 1986

F. Smelt Dissolving Tank No. 3

The same information is required as in A. above.

Permit revision applications were not received for the recovery boilers. Although TRS is referenced in the current operating permits, the following additional information is required:

A. Recovery Boiler No. 1

1. Provide calculations showing the pounds per hour of black liquor solids (dry basis) fed into the recovery boiler.
2. Type of Kraft Recovery Furnace as described in Rule 17-2.600(4)(c)3., FAC.
3. Calculations demonstrating (providing) allowable TRS emission levels in ppm (corrected) lbs/hr and T/yr.

It is noted that Rule 17-2.971(1), FAC, requires an acceptable TRS continuous emission monitor to be installed on or before April 1, 1986, and certified on or before July 1, 1986. Performance specifications must conform with Rule 17-2.710, FAC, requirements. Please indicate the status of Jacksonville Kraft Paper Company concerning a TRS CEM on the recovery furnace.

B. Recovery Boiler No. 2

The same information is required as in A. above.

C. Recovery Boiler No. 3

The same information is required as in A. above.

Please direct the response, and any questions, to the undersigned.

Very truly yours,

Jerry E. Woosley  
Associate Engineer

Enclosure

cc: Mr. Bill Stewart, P.E., DER, w/o enc.  
Mr. Johnny Cole, w/o enc.  
BESD File 1735 BB w/enc.

JEW/bgm

## 10.5 MONITORING PROGRAMS

Several environmental monitoring programs or surveys have been conducted on or near the project site. These programs have been carried out to provide base-line information about the site and surrounding areas. The following measurement/survey programs were included.

- Noise. Ambient noise measurements were taken in the site vicinity. These data are included in Subsection 2.3.8.
- Terrestrial Ecology. Surveys were conducted of the project site as well as the proposed coal conveyor and rail line corridors. Complete descriptions of the vegetation and wildlife ecology are included in Subsections 2.3.5, 2.3.6, 6.2.7.1, 6.2.7.3, 6.3.7.1, and 6.3.7.3.
- Lithology. Many core borings have been drilled by Law Engineering on the Seminole Kraft property since 1970. These borings define the subsurface geological structure and are believed representative of the Cedar Bay Cogeneration Project site. Information from many of the borings and auger holes is presented in Subsection 2.3.1.2. Additional information and data are included in Appendix 10.10.
- Ground Water Quality. Ground water quality has been monitored periodically onsite from 1972 to 1983 by Law Engineering. Additional ground water quality testing was performed by ERM in 1988. Results of the water quality testing programs are presented and discussed in Subsection 2.3.2.1. Additional measurement information is given in Appendix 10.11.
- Surface Water Quality. Water quality data for the Broward River, just upstream of its confluence with the St. Johns River, were obtained from the City of Jacksonville, Department of Health, Welfare and Bio-Environmental Services. River water is classified as Class III, generally marine. Water test data are given in Appendix 10.12.

- Air Quality. Air quality data, collected in the Jacksonville area by the Florida DER, have been used on this project to describe the background air quality of the site and impact areas. These data are described and representative background values are presented in Subsection 2.3.7.5.

10.6 STATE PERMIT APPLICATIONS OR APPROVALS

100488

10-18

10.6.1 Operate/Construct Air Pollution Sources

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION



NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207

BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

G. DOUG DUTTON  
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Circulating Fluidized Bed Boiler [X] New<sup>1</sup> [ ] Existing<sup>1</sup>

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: AES Cedar Bay, Inc. COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime  
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Three unit Fluidized  
Bed Boiler

SOURCE LOCATION: ~~XXXXXX~~ Street Cedar Bay Cogeneration Facility City Jacksonville

UTM: East 441.7 km North 3365.6 km

Latitude 30 ° 25 ' 21 "N Longitude 81 ° 36 ' 23 "W

APPLICANT NAME AND TITLE: AES Cedar Bay, Inc.

APPLICANT ADDRESS: 1001 North 19th Street, Suite 2000, Arlington, Virginia 22209

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of AES Cedar Bay, Inc.

I certify that the statements made in this application for a construction  
permit are true, correct and complete to the best of my knowledge and belief. Further,  
I agree to maintain and operate the pollution control source and pollution control  
facilities in such a manner as to comply with the provision of Chapter 403, Florida  
Statutes, and all the rules and regulations of the department and revisions thereof. I  
also understand that a permit, if granted by the department, will be non-transferable  
and I will promptly notify the department upon sale or legal transfer of the permitted  
establishment.

\*Attach letter of authorization

Signed: Jeffrey V. Swain

Jeffrey V. Swain, Project Director  
Name and Title (Please Type)

Date: 10-9-89 Telephone No. 703-522-1315

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have  
been designed/examined by me and found to be in conformity with modern engineering  
principles applicable to the treatment and disposal of pollutants characterized in the  
permit application. There is reasonable assurance, in my professional judgment, that

1 See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed *D D Schultz*

Donald Dean Schultz

Name (Please Type)

Black & Veatch, Engineers-Architects

Company Name (Please Type)

P. O. Box 8405, Kansas City, Missouri 64114

Mailing Address (Please Type)

Florida Registration No. 30304

Date: November 20, 1980 Telephone No. 913-339-2000

#### SECTION II: GENERAL PROJECT INFORMATION

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

The project will result in full compliance. See Sections 3.4 and 5.6 of the Site Certification Application

- B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction January 1990 Completion of Construction September 1992

- C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

See BACT pollution control cost in Section 10.8 of Application.

- D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None. See Section 10.4 for existing source permits.

E. Requested permitted equipment operating time: hrs/day 24; days/wk 7; wks/yr 52  
if power plant, hrs/yr 8760; if seasonal, describe: NA

F. If this is a new source or major modification, answer the following questions.  
(Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes  
a. If yes, has "offset" been applied? Yes\*  
b. If yes, has "Lowest Achievable Emission Rate" been applied? NA  
c. If yes, list non-attainment pollutants. Ozone.

2. Does best available control technology (BACT) apply to this source?  
If yes, see Section VI. Yes

3. Does the State "Prevention of Significant Deterioration" (PSD)  
requirement apply to this source? If yes, see Sections VI and VII. Yes

4. Do "Standards of Performance for New Stationary Sources" (NSPS)  
apply to this source? Yes

5. Do "National Emission Standards for Hazardous Air Pollutants"  
(NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply  
to this source? No

e. If yes, for what pollutants? NA

b. If yes, in addition to the information required in this form,  
any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justifi-  
cation for any answer of "No" that might be considered questionable.

\*Onsite source reductions yield net emission reductions for VOC.



**SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)**

**A. Raw Materials and Chemicals Used in your Process, if applicable:**

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
NA				

**B. Process Rate, if applicable: (See Section V, Item 1)**

1. Total Process Input Rate (lbs/hr): NA
2. Product Weight (lbs/hr): NA

**C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)**

Name of Contaminant	Emission <sup>1</sup>		Allowed Emission Rate per Rule 17-2	Allowable Emission lbs/hr <sup>3</sup>	Potential <sup>4</sup> Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
(See Sections 3.4 and 5.6 of the Application.)							

<sup>1</sup>See Section V, Item 2.

<sup>2</sup>Reference applicable emission standards and units (e.g. Rule 17-2.600(3)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

<sup>3</sup>Calculated from operating rate and applicable standard.

<sup>4</sup>Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
(See Section 3.4 of Application)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Combined Coal and Bark		281,788 lbs/h	3,189
No. 2 Fuel Oil (Startup)		160,000 gal/year	1,120

\*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: Combined coal and bark (No. 2 Fuel Oil)

Percent Sulfur: 1.70 to 3.30 (Max. 0.3) Percent Ash: 14.52 to 18.0

Density: (7.05 AP-42) lbs/gal Typical Percent Nitrogen: 1.19

Heat Capacity: 11,000 BTU/lb (140,000 AP-42) BTU/gal

Other Fuel Contaminants (which may cause air pollution): See Section 10.8 of the Site

Certification Application for other fuel contaminants.

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average None Maximum None

G. Indicate liquid or solid wastes generated and method of disposal.

Ash will be generated as coal combustion and SO<sub>2</sub> removal by-products. Wastes will be removed from the site for final disposal. The ash will be disposed of by the coal supplier out of state or potentially marketed in the materials industry.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 435 Ft. Stack Diameter: 14 Ft.  
 Gas Flow Rate: 1,004,000 Total ACFM 667,000 DSCFM Gas Exit Temperature: 265 °F.  
 Water Vapor Content: 5 % Velocity: 109 FPS

SECTION IV: INCINERATOR INFORMATION

NA

Type of Waste	Type D (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste \_\_\_\_\_

Total Weight Incinerated (lbs/hr) \_\_\_\_\_ Design Capacity (lbs/hr) \_\_\_\_\_

Approximate Number of Hours of Operation per day \_\_\_\_\_ day/wk \_\_\_\_\_ wks/yr. \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Date Constructed \_\_\_\_\_ Model No. \_\_\_\_\_

	Volume (ft) <sup>3</sup>	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: \_\_\_\_\_ Ft. Stack Diameter: \_\_\_\_\_ Stack Temp. \_\_\_\_\_

Gas Flow Rate: \_\_\_\_\_ ACFM \_\_\_\_\_ DSCFM\* Velocity: \_\_\_\_\_ FPS

\*IF 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control devices:  Cyclone  Wet Scrubber  Afterburner  
 Other (specify) \_\_\_\_\_

Brief description of operating characteristics of control devices: \_\_\_\_\_

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

#### SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

**SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY**

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes  No Subpart Da *new*

Contaminant	Rate or Concentration
SO <sub>2</sub>	0.6 lb/MBtu and 70 percent removal for coals being considered
NO <sub>x</sub>	0.60 lb/MBtu
Particulate Matter	0.03 lb/MBtu
Opacity	20 Percent (27 percent--6 minutes/hour)
SO <sub>2</sub> , NO <sub>x</sub> , Opacity, Oxygen (O <sub>2</sub> )	Continuous emission monitoring

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

Yes  No Case by case determination

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Sections 3.4 and 10.8 of the Application.

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Sections 3.4 and 10.4 of the Application.

- |                           |                          |
|---------------------------|--------------------------|
| 1. Control Device/System: | 2. Operating Principles: |
| 3. Efficiency:            | 4. Capital Costs:        |

Explain method of determining

5. Useful Life:

7. Energy:

9. Emissions:

6. Operating Costs:

8. Maintenance Cost:

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height:

ft.

b. Diameter:

ft.

c. Flow Rate:

ACFM

d. Temperature:

°F.

e. Velocity:

FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary). See Sections 3.4 and 10.9 of the Application.

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

<sup>1</sup> Explain method of determining efficiency.

<sup>2</sup> Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: See Section 3.4 of Application

1. Control Device:

2. Efficiency:<sup>1</sup>

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:<sup>2</sup>

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

<sup>1</sup> Explain method of determining efficiency.

<sup>2</sup> Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration


(8) Process Rate:<sup>1</sup>

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration


(8) Process Rate:<sup>1</sup>

10. Reason for selection and description of systems:

<sup>1</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

**SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION**

A. Company Monitored Data No preconstruction monitoring is required. See Section 2.3 of the Application.

1. \_\_\_\_\_ no. sites \_\_\_\_\_ TSP \_\_\_\_\_ ( ) SO<sub>2</sub> \_\_\_\_\_ Wind spd/dir

Period of Monitoring \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
month day year month day year

Other data recorded \_\_\_\_\_

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).



2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent?  Yes  No
- b. Was instrumentation calibrated in accordance with Department procedures?  
 Yes  No  Unknown

B. Meteorological Data Used for Air Quality Modeling

- 1. 5 Year(s) of data from 01 / 01 / 81 to 01 / 01 / 85  
month day year month day year
- 2. Surface data obtained from (location) Jacksonville, Florida
- 3. Upper air (mixing height) data obtained from (location) Waycross, Georgia
- 4. Stability wind rose (STAR) data obtained from (location) NA

C. Computer Models Used

- 1. PTPLU-2 (UNAMAP 6) Modified? If yes, attach description.
- 2. ISCST (UNAMAP 6) Modified? If yes, attach description.
- 3. \_\_\_\_\_ Modified? If yes, attach description.
- 4. \_\_\_\_\_ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	<u>8.06</u>	grams/sec
SO <sub>2</sub>	<u>241.03</u>	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

STATE OF FLORIDA BEST AVAILABLE COPY  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

6 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY  
G. DOUG BUTTS  
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Kraft Recovery Boiler  New<sup>1</sup>  Existing<sup>1</sup>

APPLICATION TYPE:  Construction  Operation  Modification

COMPANY NAME: Seminole Kraft Corporation COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime  
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Kraft Recovery Boiler

SOURCE LOCATION: ~~SEMINOLE~~ Cedar Bay Cogeneration Facility City Jacksonville

UTM: East 442.3 km North 3366.4 km

Latitude 30° 25' 20" N Longitude 81° 36' 10" W

APPLICANT NAME AND TITLE: Seminole Kraft Corporation

APPLICANT ADDRESS: 9469 Eastport Road, Jacksonville, Florida 32218-0998

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of Seminole Kraft Corporation

I certify that the statements made in this application for a construction  
permit, are true, correct and complete to the best of my knowledge and belief. Further  
I agree to maintain and operate the pollution control source and pollution control  
facilities in such a manner as to comply with the provision of Chapter 403, Florida  
Statutes, and all the rules and regulations of the department and revisions thereof.  
I also understand that a permit, if granted by the department, will be non-transferable  
and I will promptly notify the department upon sale or legal transfer of the permit  
establishment.

\*Attach letter of authorization

Signed: [Signature]

T. Frank Lee, General Manager  
Name and Title (Please Type)

Date: 10/14/88 Telephone No. 904-751-6400

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have  
been designed/examined by me and found to be in conformity with modern engineering  
principles applicable to the treatment and disposal of pollutants characterized in this  
permit application. There is reasonable assurance, in my professional judgment, that

<sup>1</sup> See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed DE Schultz

Donald Dean Schultz

Name (Please Type)

Black & Veatch, Engineers-Architects

Company Name (Please Type)

P. O. Box 8405, Kansas City, Missouri 64114

Mailing Address (Please Type)

Florida Registration No. 30304 Date: November 20, 1980 Telephone No. 913-339-2000

### SECTION II: GENERAL PROJECT INFORMATION

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

The project will result in full compliance. See Sections 3.4 and 5.6 of the Site

Certification Application.

- B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction January 1990 Completion of Construction March 1992

- C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

The electrostatic precipitator will cost approximately \$5.00 x 10<sup>6</sup>.

- D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

See Section 10.4 for existing source permits.

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;  
if power plant, hrs/yr NA ; if seasonal, describe: Not seasonal

F. If this is a new source or major modification, answer the following questions.  
(Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes  
a. If yes, has "offset" been applied? \*  
b. If yes, has "Lowest Achievable Emission Rate" been applied? NA  
c. If yes, list non-attainment pollutants. Ozone

2. Does best available control technology (BACT) apply to this source?  
If yes, see Section VI. Yes

3. Does the State "Prevention of Significant Deterioration" (PSD)  
requirement apply to this source? If yes, see Sections VI and VII. Yes

4. Do "Standards of Performance for New Stationary Sources" (NSPS)  
apply to this source? Yes

5. Do "National Emission Standards for Hazardous Air Pollutants"  
(NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply  
to this source? No

a. If yes, for what pollutants? NA

b. If yes, in addition to the information required in this form,  
any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justifi-  
cation for any answer of "No" that might be considered questionable.

\*Onsite source reductions yield net emission reduction for VOC.

**SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)**

**A. Raw Materials and Chemicals Used in your Process, if applicable:**

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
See III E.				

**B. Process Rate, if applicable: (See Section V, Item 1)**

1. Total Process Input Rate (lbs/hr): NA
2. Product Weight (lbs/hr): NA

**C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)**

Name of Contaminant	Emission <sup>1</sup>		Allowed <sup>2</sup> Emission Rate per Rule 17-2	Allowable <sup>3</sup> Emission lbs/hr	Potential <sup>4</sup> Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
(See Sections 3.4 and 5.6 of the Application.)							

<sup>1</sup>See Section V, Item 2.

<sup>2</sup>Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

<sup>3</sup>Calculated from operating rate and applicable standard.

<sup>4</sup>Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
(See Section 3.4 of Application)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
Black liquor by-product		248,800 lbs/h	1,125
No. 6 Fuel Oil (Startup, Shutdown, and malfunction)		750,000 gal/year	

\*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: Black Liquor By-Product (No. 6 Fuel Oil)

Percent Sulfur: 2.60 (wet basis) (2.27) Percent Ash: 14.63 (wet basis)

Density: (7.88 AP-42) lbs/gal Typical Percent Nitrogen: 0.04

Heat Capacity: 4,522 BTU/lb (150,000 AP-42) BTU/gal

Other Fuel Contaminants (which may cause air pollution): See Section 10.9 of the Site Certification Application for other fuel contaminants.

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average None Maximum None

G. Indicate liquid or solid wastes generated and method of disposal.

No solid wastes will be generated. Although ash (smelt) is produced, it is processed in the smelt dissolving tank and recycled within the process. Boiler blowdown will be reused as makeup to the cooling towers. See SCA Section 3.5 for full wastewater treatment and disposal discussion.

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 425 ft. Stack Diameter: 11.25 ft.  
 Gas Flow Rate: 399,938 ACFM 202,328 DSCFM Gas Exit Temperature: 400 °F  
 Water Vapor Content: 17.6 % Velocity: 67.1 FPS

SECTION IV: INCINERATOR INFORMATION

NA

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste \_\_\_\_\_

Total Weight Incinerated (lbs/hr) \_\_\_\_\_ Design Capacity (lbs/hr) \_\_\_\_\_

Approximate Number of Hours of Operation per day \_\_\_\_\_ day/wk \_\_\_\_\_ wks/yr. \_\_\_\_\_

Manufacturer \_\_\_\_\_

Date Constructed \_\_\_\_\_ Model No. \_\_\_\_\_

	Volume (ft) <sup>3</sup>	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: \_\_\_\_\_ ft. Stack Diameter: \_\_\_\_\_ Stack Temp. \_\_\_\_\_

Gas Flow Rate: \_\_\_\_\_ ACFM \_\_\_\_\_ DSCFM\* Velocity: \_\_\_\_\_ FPS

\*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device:  Cyclone  Wet Scrubber  Afterburner  
 Other (specify) \_\_\_\_\_

Brief description of operating characteristics of control devices: \_\_\_\_\_

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

#### SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.



9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

**SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY**

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes  No Subpart BB

*new*

Contaminant	Rate or Concentration
Particulate	0.044 gr/dscf corrected to 8% O <sub>2</sub>
Total Reduced Sulfur (TRS)	5 ppmvd corrected to 8% O <sub>2</sub>
Opacity	35 percent

B. Has EPA declared the best available control technology for this class of sources (if yes, attach copy)

Yes  No Case by case determination

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Sections 3.4.3 and 10.9 of the Application.

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Sections 3.4 and 10.4 of the Application.

- |                           |                          |
|---------------------------|--------------------------|
| 1. Control Device/System: | 2. Operating Principles: |
| 3. Efficiency:*           | 4. Capital Costs:        |

Explain method of determining

5. Useful Life:

7. Energy:

9. Emissions:

6. Operating Costs:

8. Maintenance Cost:

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height:

Ft.

b. Diameter:

Ft.

c. Flow Rate:

ACFM

d. Temperature:

°F.

e. Velocity:

FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary). See Sections 3.4 and 10.9 of the Application.

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

<sup>1</sup> Explain method of determining efficiency.

<sup>2</sup> Energy to be reported in units of electrical power - KWH design rate.

- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:<sup>1</sup>
- d. Capital Cost:
- e. Useful Life:
- f. Operating Cost:
- g. Energy:<sup>2</sup>
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

- a. Control Device:
- b. Operating Principles:
- c. Efficiency:<sup>1</sup>
- d. Capital Costs:
- e. Useful Life:
- f. Operating Cost:
- g. Energy:<sup>2</sup>
- h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: See Section 3.4 of Application

- 1. Control Device:
- 2. Efficiency:<sup>1</sup>
- 3. Capital Cost:
- 4. Useful Life:
- 5. Operating Cost:
- 6. Energy:<sup>2</sup>
- 7. Maintenance Cost:
- 8. Manufacturer:
- 9. Other locations where employed on similar processes:
- a. (1) Company:
- (2) Mailing Address:
- (3) City:
- (4) State:

<sup>1</sup>Explain method of determining efficiency.

<sup>2</sup>Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration


(8) Process Rate:<sup>1</sup>

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration


(8) Process Rate:<sup>1</sup>

10. Reason for selection and description of systems:

<sup>1</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

**SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION**

A. Company Monitored Data No preconstruction monitoring is required. See Section 2.3 of the Application.

1. \_\_\_\_\_ no. sites \_\_\_\_\_ TSP \_\_\_\_\_ ( ) SO<sub>2</sub> \_\_\_\_\_ Wind spd/dir

Period of Monitoring \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
month day year month day year

Other data recorded \_\_\_\_\_

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent?  Yes  No
- b. Was instrumentation calibrated in accordance with Department procedures?  
 Yes  No  Unknown

B. Meteorological Data Used for Air Quality Modeling

- 1. 5 Year(s) of data from 01 / 01 / 81 to 12 / 31 / 85  
month day year month day year
- 2. Surface data obtained from (location) Jacksonville, Florida
- 3. Upper air (mixing height) data obtained from (location) Waycross, Georgia
- 4. Stability wind rose (STAR) data obtained from (location) NA

C. Computer Models Used

- 1. PTPLU-2 (UNAMAP 6) Modified? If yes, attach description.
- 2. ISCST (UNAMAP 6) Modified? If yes, attach description.
- 3. \_\_\_\_\_ Modified? If yes, attach description.
- 4. \_\_\_\_\_ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	<u>13.5</u>	grams/sec
SO <sub>2</sub>	<u>42.8</u>	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

BEST AVAILABLE COPY STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKA  
SECRETARY  
G. DOUG OUTTO  
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Smelt Dissolving Tank  New<sup>1</sup>  Existing<sup>1</sup>

APPLICATION TYPE:  Construction  Operation  Modification

COMPANY NAME: Seminole Kraft Corporation COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime  
Smelt Dissolving Tank  
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) with liquid contact  
scrubber

SOURCE LOCATION: ~~SMELT~~ Cedar Bay Cogeneration Facility City Jacksonville

UTM: East 442.3 km North 3366.4 km

Latitude 30° 25' 20" N Longitude 81° 36' 10" W

APPLICANT NAME AND TITLE: Seminole Kraft Corporation

APPLICANT ADDRESS: 9469 Eastport Road, Jacksonville, Florida 32218-0998

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of Seminole Kraft Corporation

I certify that the statements made in this application for a construction  
permit, are true, correct and complete to the best of my knowledge and belief. Further,  
I agree to maintain and operate the pollution control source and pollution control  
facilities in such a manner as to comply with the provision of Chapter 403, Florida  
Statutes, and all the rules and regulations of the department and revisions thereof,  
and I also understand that a permit, if granted by the department, will be non-transferable  
and I will promptly notify the department upon sale or legal transfer of the permit  
establishment.

\*Attach letter of authorization

Signed: [Signature]

T. Frank Lee, General Manager  
Name and Title (Please Type)

Date: 10/14/88 Telephone No. 904-751-6400

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have  
been designed/examined by me and found to be in conformity with modern engineering  
principles applicable to the treatment and disposal of pollutants characterized in  
permit application. There is reasonable assurance, in my professional judgment,

<sup>1</sup> See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed D D Schultz

Donald Dean Schultz  
Name (Please Type)

Black & Veatch, Engineers-Architects  
Company Name (Please Type)

P. O. Box 8405, Kansas City, Missouri 64114  
Mailing Address (Please Type)

Florida Registration No. 30304 Date: November 20, 1980 Telephone No. 913-339-2000

**SECTION II: GENERAL PROJECT INFORMATION**

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

The project will result in full compliance. See Sections 3.4 and 5.6 of the Site Certification Application.

- B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction NA Completion of Construction NA

- C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Approximately \$100,000 to \$150,000 for scrubbers.

- D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

See Section 10.4 for existing source permits.

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;  
if power plant, hrs/yr NA ; if seasonal, describe: Not seasonal

F. If this is a new source or major modification, answer the following questions.  
(Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes  
a. If yes, has "offset" been applied? \*  
b. If yes, has "Lowest Achievable Emission Rate" been applied? No  
c. If yes, list non-attainment pollutants. Ozone

2. Does best available control technology (BACT) apply to this source?  
If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioration" (PSD)  
requirement apply to this source? If yes, see Sections VI and VII. Yes

4. Do "Standards of Performance for New Stationary Sources" (NSPS)  
apply to this source? Yes

5. Do "National Emission Standards for Hazardous Air Pollutants"  
(NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply  
to this source? No

a. If yes, for what pollutants? NA

b. If yes, in addition to the information required in this form,  
any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justifi-  
cation for any answer of "No" that might be considered questionable.

\*Onsite source reductions yield net emission reductions for VOC.



**SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)**

**A. Raw Materials and Chemicals Used in your Process, if applicable:**

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
NA				

**B. Process Rate, if applicable: (See Section V, Item 1)**

- 1. Total Process Input Rate (lbs/hr): NA
- 2. Product Weight (lbs/hr): NA

**C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)**

Name of Contaminant	Emission <sup>1</sup>		Allowed <sup>2</sup> Emission Rate per Rule 17-2	Allowable <sup>3</sup> Emission lbs/hr	Potential <sup>4</sup> Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
(See Sections 3.4 and 5.6 of the Application.)							

<sup>1</sup>See Section V, Item 2.  
<sup>2</sup>Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)  
<sup>3</sup>Calculated from operating rate and applicable standard.  
<sup>4</sup>Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
(See Section 3.4 of Application)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
NA			

\*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: \_\_\_\_\_ Percent Ash: \_\_\_\_\_

Density: \_\_\_\_\_ lbs/gal Typical Percent Nitrogen: \_\_\_\_\_

Heat Capacity: \_\_\_\_\_ BTU/lb \_\_\_\_\_ BTU/gal

Other Fuel Contaminants (which may cause air pollution): \_\_\_\_\_

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average None Maximum None

G. Indicate liquid or solid wastes generated and method of disposal.

No solid wastes or wastewater will be generated.

## H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 240 ft. Stack Diameter: 5 ft.  
 Gas Flow Rate: 55,000 ACFM 35,000 DSCFM Gas Exit Temperature: 160 °F  
 Water Vapor Content: 25 % Velocity: 47 FPS

## SECTION IV: INCINERATOR INFORMATION

NA

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lb/hr)							

Description of Waste \_\_\_\_\_

Total Weight Incinerated (lbs/hr) \_\_\_\_\_ Design Capacity (lbs/hr) \_\_\_\_\_

Approximate Number of Hours of Operation per day \_\_\_\_\_ day/wk \_\_\_\_\_ wks/yr. \_\_\_\_\_

Manufacturer \_\_\_\_\_

Date Constructed \_\_\_\_\_ Model No. \_\_\_\_\_

	Volume (ft) <sup>3</sup>	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: \_\_\_\_\_ ft. Stack Diameter: \_\_\_\_\_ Stack Temp. \_\_\_\_\_

Gas Flow Rate: \_\_\_\_\_ ACFM \_\_\_\_\_ DSCFM\* Velocity: \_\_\_\_\_ FPS

\*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device:  Cyclone  Wet Scrubber  Afterburner Other (specify) \_\_\_\_\_

Brief description of operating characteristics of control devices: \_\_\_\_\_

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

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

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

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

**SECTION V: SUPPLEMENTAL REQUIREMENTS**

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]
2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

**SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY**

- A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?  
 Yes  No Subpart BB *new (yes)*

Contaminant	Rate or Concentration
Total Reduced Sulfur (TRS)	0.033 lb/ton BLS (as H <sub>2</sub> S)
Particulate	0.2 lb particulate/ton BLs (dry weight)

- B. Has EPA declared the best available control technology for this class of sources (if yes, attach copy)  
 Yes  No

Contaminant	Rate or Concentration

- C. What emission levels do you propose as best available control technology? See Section 3.4 of Application

Contaminant	Rate or Concentration

- D. Describe the existing control and treatment technology (if any). See Sections 3.4 and 10.4 of the Application.

- |                           |                          |
|---------------------------|--------------------------|
| 1. Control Device/System: | 2. Operating Principles: |
| 3. Efficiency:*           | 4. Capital Costs:        |

\* Explain method of determining

5. Useful Life:

6. Operating Costs:

7. Energy:

8. Maintenance Cost:

9. Emissions:

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height:

ft.

b. Diameter:

ft.

c. Flow Rate:

ACFM

d. Temperature:

°F.

e. Velocity:

FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary). See Section 3.4 of Application.

1.

a. Control Devices:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Devices:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

<sup>1</sup>Explain method of determining efficiency.

<sup>2</sup>Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: See Section 3.4 of Application

1. Control Device:

2. Efficiency:<sup>1</sup>

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:<sup>2</sup>

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

<sup>1</sup>Explain method of determining efficiency.

<sup>2</sup>Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration


(8) Process Rate:<sup>1</sup>

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration


(8) Process Rate:<sup>1</sup>

10. Reason for selection and description of systems:

<sup>1</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

**SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION**

A. Company Monitored Data No preconstruction monitoring is required. See Section 2.3 of the Application.

1. \_\_\_\_\_ no. sites \_\_\_\_\_ TSP \_\_\_\_\_ ( ) SO<sub>2</sub> \_\_\_\_\_ Wind spd/dir

Period of Monitoring \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
month day year month day year

Other data recorded \_\_\_\_\_

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).



## 2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent?  Yes  No
- b. Was instrumentation calibrated in accordance with Department procedures?  
 Yes  No  Unknown

## B. Meteorological Data Used for Air Quality Modeling

1. 5 Year(s) of data from 01 / 01 / 81 to 12 / 31 / 85  
month day year month day year
2. Surface data obtained from (location) Jacksonville, Florida
3. Upper air (mixing height) data obtained from (location) Waycross, Georgia
4. Stability wind rose (STAR) data obtained from (location) NA

## C. Computer Models Used

1. PTPLU-2 (UNAMAP 6) Modified? If yes, attach description.
2. ISCST (UNAMAP 6) Modified? If yes, attach description.
3. \_\_\_\_\_ Modified? If yes, attach description.
4. \_\_\_\_\_ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

## D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	<u>2.2</u>	grams/sec
SO <sub>2</sub>	<u>0.3</u>	grams/sec

## E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

## F. Attach all other information supportive to the PSD review.

## G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

## H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

BEST AVAILABLE COPY STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

1426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAM  
GOVERNOR  
VICTORIA J. SCHINKE  
SECRETARY  
G. DOUG BUTTS  
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Multiple Effects Evaporator [X] New<sup>1</sup> [ ] Existing<sup>1</sup>

APPLICATION TYPE: [X] Construction [ ] Operation [ ] Modification

COMPANY NAME: Seminole Kraft Corporation COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime  
Kiln No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Lime Kiln Stack

SOURCE LOCATION: ~~SECRET~~ Cedar Bay Cogeneration Facility City Jacksonville

UTM: East 442.3 km North 3366.4 km

Latitude 30 ° 25 ' 20 "N Longitude 81 ° 36 ' 10 "W

APPLICANT NAME AND TITLE: Seminole Kraft Corporation

APPLICANT ADDRESS: 9469 Eastport Road, Jacksonville, Florida 32218-0998

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of Seminole Kraft Corporation

I certify that the statements made in this application for a construction  
permit, are true, correct and complete to the best of my knowledge and belief. Further,  
I agree to maintain and operate the pollution control source and pollution control  
facilities in such a manner as to comply with the provision of Chapter 403, Florida  
Statutes, and all the rules and regulations of the department and revisions thereof  
also understand that a permit, if granted by the department, will be non-transferable  
and I will promptly notify the department upon sale or legal transfer of the permit  
establishment.

\*Attach letter of authorization

Signed: [Signature]

T. Frank Lee, General Manager

Name and title (Please type)

Date: 10/14/88 Telephone No. 904-751-6400

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project  
been designed/examined by me and found to be in conformity with modern engineering  
principles applicable to the treatment and disposal of pollutants characterized in  
permit application. There is reasonable assurance, in my professional judgment,

See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed Donald Dean Schultz

Donald Dean Schultz

Name (Please Type)

Black & Veatch, Engineers-Architects

Company Name (Please Type)

P. O. Box 8405, Kansas City, Missouri 64114

Mailing Address (Please Type)

Florida Registration No. 30304

Date: November 20, 1980 Telephone No. 913-339-2000

**SECTION II: GENERAL PROJECT INFORMATION**

- A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

The project will result in full compliance. See Section 3.4 of the Site Certification

Application

- B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction NA Completion of Construction NA

- C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

NA

- D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None

E. Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;  
if power plant, hrs/yr NA ; if seasonal, describe: Not seasonal

F. If this is a new source or major modification, answer the following questions.  
(Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes  
a. If yes, has "offset" been applied? \*  
b. If yes, has "Lowest Achievable Emission Rate" been applied? NA  
c. If yes, list non-attainment pollutants. Ozone

2. Does best available control technology (BACT) apply to this source?  
If yes, see Section VI. No

3. Does the State "Prevention of Significant Deterioration" (PSD)  
requirement apply to this source? If yes, see Sections VI and VII. Yes

4. Do "Standards of Performance for New Stationary Sources" (NSPS)  
apply to this source? Yes

5. Do "National Emission Standards for Hazardous Air Pollutants"  
(NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply  
to this source? No

a. If yes, for what pollutants? NA

b. If yes, in addition to the information required in this form,  
any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justifi-  
cation for any answer of "No" that might be considered questionable.

\*Onsite source reductions yield net emission reductions for VOC.

**SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)**

**A. Raw Materials and Chemicals Used in your Process, if applicable:**

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
NA				

**B. Process Rate, if applicable: (See Section V, Item 1)**

1. Total Process Input Rate (lbs/hr): NA
2. Product Weight (lbs/hr): NA

**C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)**

Name of Contaminant	Emission <sup>1</sup>		Allowed Emission Rate per Rule 17-2	Allowable Emission lbs/hr <sup>3</sup>	Potential <sup>4</sup> Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
(See Section 3.4 of the Application.							

<sup>1</sup>See Section V, Item 2.

<sup>2</sup>Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E. (1) - 0.1 pounds per million BTU heat input)

<sup>3</sup>Calculated from operating rate and applicable standard.

<sup>4</sup>Emission, if source operated without control (See Section V, Item 3).

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
(See Section 3.4 of the Application)				

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
NA			

\*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis:

Percent Sulfur: \_\_\_\_\_ Percent Ash: \_\_\_\_\_

Density: \_\_\_\_\_ lbs/gal Typical Percent Nitrogen: \_\_\_\_\_

Heat Capacity: \_\_\_\_\_ BTU/lb \_\_\_\_\_ BTU/gal

Other Fuel Contaminants (which may cause air pollution): \_\_\_\_\_

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average None Maximum None

G. Indicate liquid or solid wastes generated and method of disposal.

No additional solid wastes or wastewater will be generated. 3

H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):

Stack Height: 75 ft. Stack Diameter: 3.7 ft.  
 Gas Flow Rate: 22,000 ACFM 14,300 DSCFM Gas Exit Temperature: 150 °F  
 Water Vapor Content: 25 % Velocity: 34 FPS

SECTION IV: INCINERATOR INFORMATION  
 NA

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lb/hr)							

Description of Waste \_\_\_\_\_

Total Weight Incinerated (lb/hr) \_\_\_\_\_ Design Capacity (lb/hr) \_\_\_\_\_

Approximate Number of Hours of Operation per day \_\_\_\_\_ day/wk \_\_\_\_\_ wks/yr. \_\_\_\_\_

Manufacturer \_\_\_\_\_

Date Constructed \_\_\_\_\_ Model No. \_\_\_\_\_

	Volume (ft) <sup>3</sup>	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height: \_\_\_\_\_ ft. Stack Diameter: \_\_\_\_\_ Stack Temp. \_\_\_\_\_

Gas Flow Rate: \_\_\_\_\_ ACFM \_\_\_\_\_ DSCFM\* Velocity: \_\_\_\_\_ FPS

\*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device:  Cyclone  Wet Scrubber  Afterburner  
 Other (specify) \_\_\_\_\_

Brief description of operating characteristics of control devices: \_\_\_\_\_

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

#### SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]  
To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)
5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).
6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.



9. The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.
10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

**SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY**

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes [ ] No Subpart BB *New*

Contaminant	Rate or Concentration
Total Reduced Sulfur	5 ppmvd corrected to 10% O <sub>2</sub>

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

[ ] Yes [X] No

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology? See Section 3.4 of the Application

Contaminant	Rate or Concentration

D. Describe the existing control and treatment technology (if any). See Section 3.4 of the Application.

- |                           |                          |
|---------------------------|--------------------------|
| 1. Control Device/System: | 2. Operating Principles: |
| 3. Efficiency:            | 4. Capital Costs:        |

Explain method of determining

5. Useful Life:

7. Energy:

9. Emissions:

6. Operating Costs:

8. Maintenance Cost:

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

10. Stack Parameters

a. Height:

ft.

b. Diameter:

ft.

c. Flow Rate:

ACFM

d. Temperature:

°F.

e. Velocity:

FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary). See Section 3.4 of the Application.

1.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

1. Explain method of determining efficiency.

2. Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected: See Section 3.4 of the Application.

1. Control Device:

2. Efficiency:<sup>1</sup>

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:<sup>2</sup>

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

<sup>1</sup> Explain method of determining efficiency.

<sup>2</sup> Energy to be reported in units of electrical power - KWH design rate.

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration


(8) Process Rate:<sup>1</sup>

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration


(8) Process Rate:<sup>1</sup>

10. Reason for selection and description of systems:

<sup>1</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

**SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION**

A. Company Monitored Data No preconstruction monitoring is required. See Section 2.3 of the Application.

1. \_\_\_\_\_ no. sites \_\_\_\_\_ TSP \_\_\_\_\_ ( ) SO<sub>2</sub> \_\_\_\_\_ Wind spd/dir

Period of Monitoring \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
month day year month day year

Other data recorded \_\_\_\_\_

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).

2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent?  Yes  No
- b. Was instrumentation calibrated in accordance with Department procedures?  
 Yes  No  Unknown

B. Meteorological Data Used for Air Quality Modeling

- 1. 5 Year(s) of data from 01 / 01 / 81 to 01 / 01 / 85  
month day year month day year
- 2. Surface data obtained from (location) Jacksonville, Florida
- 3. Upper air (mixing height) data obtained from (location) Waycross, Georgia
- 4. Stability wind rose (STAR) data obtained from (location) NA

C. Computer Models Used

- 1. PTPLU-2 (UNAMAP 6) Modified? If yes, attach description.
- 2. ISCST (UNAMAP 6) Modified? If yes, attach description.
- 3. \_\_\_\_\_ Modified? If yes, attach description.
- 4. \_\_\_\_\_ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

D. Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	<u>NA</u>	grams/sec
SO <sub>2</sub>	<u>NA</u>	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

10.6.2 Operate/Construct Industrial Wastewater Treatment and Disposal System

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT  
3426 BILLS ROAD  
JACKSONVILLE, FLORIDA 32207



BOB GRAHAM  
GOVERNOR  
VICTORIA J. TSCHINKEL  
SECRETARY  
G. DOUG DUTTON  
DISTRICT MANAGER

APPLICATION TO OPERATE/CONSTRUCT AIR POLLUTION SOURCES

SOURCE TYPE: Limestone Dryers  New<sup>1</sup>  Existing<sup>1</sup>  
APPLICATION TYPE:  Construction  Operation  Modification  
COMPANY NAME: AES Cedar Bay, Inc. COUNTY: Duval

Identify the specific emission point source(s) addressed in this application (i.e. Lime  
Two Unit  
Kila No. 4 with Venturi Scrubber; Peaking Unit No. 2, Gas Fired) Limestone Dryer

SOURCE LOCATION: ~~SEWER~~ Cedar Bay Cogeneration Facility City Jacksonville  
UTM: East 441.6 North 3365.7  
Latitude 30 ° 25 ' 24 "N Longitude 81 ° 36 ' 26 "W

APPLICANT NAME AND TITLE: AES Cedar Bay, Inc.

APPLICANT ADDRESS: 1001 North 19th Street, Arlington, Virginia 22209

SECTION I: STATEMENTS BY APPLICANT AND ENGINEER

A. APPLICANT

I am the undersigned owner or authorized representative\* of AES Cedar Bay, Inc.

I certify that the statements made in this application for a Construction permit are true, correct and complete to the best of my knowledge and belief. Further, I agree to maintain and operate the pollution control source and pollution control facilities in such a manner as to comply with the provision of Chapter 403, Florida Statutes, and all the rules and regulations of the department and revisions thereof. I also understand that a permit, if granted by the department, will be non-transferable and I will promptly notify the department upon sale or legal transfer of the permitted establishment.

\*Attach letter of authorization

Signed: *Jeffrey V. Swain*  
Jeffrey V. Swain, Project Director  
Name and Title (Please Type)

Date: 10-9-89 Telephone No. 703-522-1315

B. PROFESSIONAL ENGINEER REGISTERED IN FLORIDA (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that

See Florida Administrative Code Rule 17-2.100(57) and (104)

the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules and regulations of the department. It is also agreed that the undersigned will furnish, if authorized by the owner, the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signed Donald Dean Schultz

Donald Dean Schultz  
Name (Please Type)

Black & Veatch, Engineers-Architects  
Company Name (Please Type)

P.O. Box 8405, Kansas City, Missouri 64114  
Mailing Address (Please Type)

Florida Registration No. 30304 Date: November 20, 1980 Telephone No. 913-339-2000

**SECTION II: GENERAL PROJECT INFORMATION**

A. Describe the nature and extent of the project. Refer to pollution control equipment, and expected improvements in source performance as a result of installation. State whether the project will result in full compliance. Attach additional sheet if necessary.

The project will result in full compliance. See Sections 3.4 and 5.6 of the

Site Certification Application.

B. Schedule of project covered in this application (Construction Permit Application Only)

Start of Construction January 1990 Completion of Construction September 1992

C. Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for individual components/units of the project serving pollution control purposes. Information on actual costs shall be furnished with the application for operation permit.)

Included in the cost of the limestone pulverizer.

D. Indicate any previous DER permits, orders and notices associated with the emission point, including permit issuance and expiration dates.

None. See Section 10.4 for existing source permits.

3



Requested permitted equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 ;  
if power plant, hrs/yr \_\_\_\_\_ ; if seasonal, describe: \_\_\_\_\_

F. If this is a new source or major modification, answer the following questions.  
(Yes or No)

1. Is this source in a non-attainment area for a particular pollutant? Yes  
a. If yes, has "offset" been applied? \*  
b. If yes, has "Lowest Achievable Emission Rate" been applied? NA  
c. If yes, list non-attainment pollutants. Ozone

2. Does best available control technology (BACT) apply to this source?  
If yes, see Section VI. Yes

3. Does the State "Prevention of Significant Deterioration" (PSD)  
requirement apply to this source? If yes, see Sections VI and VII. Yes

4. Do "Standards of Performance for New Stationary Sources" (NSPS)  
apply to this source? Yes

5. Do "National Emission Standards for Hazardous Air Pollutants"  
(NESHAP) apply to this source? No

H. Do "Reasonably Available Control Technology" (RACT) requirements apply  
to this source? No

a. If yes, for what pollutants? NA

b. If yes, in addition to the information required in this form,  
any information requested in Rule 17-2.650 must be submitted.

Attach all supportive information related to any answer of "Yes". Attach any justifi-  
cation for any answer of "No" that might be considered questionable.

\*Onsite source reductions yield net emissions reductions for VOC.

**SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)**

A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization Rate - lbs/hr	Relate to Flow Diagram
	Type	% Wt		
NA				

B. Process Rate, if applicable: (See Section V, Item 1)

1. Total Process Input Rate (lbs/hr): \_\_\_\_\_

2. Product Weight (lbs/hr): \_\_\_\_\_

C. Airborne Contaminants Emitted: (Information in this table must be submitted for each emission point, use additional sheets as necessary)

Name of Contaminant	Emission <sup>1</sup>		Allowed <sup>2</sup> Emission Rate per Rule 17-2	Allowable <sup>3</sup> Emission lbs/hr	Potential <sup>4</sup> Emission		Relate to Flow Diagram
	Maximum lbs/hr	Actual T/yr			lbs/yr	T/yr	
(See Sections 3.4 and 5.6 of the Application)							

<sup>1</sup> See Section V, Item 2.

<sup>2</sup> Reference applicable emission standards and units (e.g. Rule 17-2.600(5)(b)2. Table II, E- (1) - 0.1 pounds per million BTU heat input)

<sup>3</sup> Calculated from operating rate and applicable standard.

<sup>4</sup> Emission, if source operated without control (See Section V, Item 3).

Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles Size Collected (in microns) (If applicable)	Basis for Efficiency (Section V Item 5)
Fabric Filter for Limestone Separation	TSP	99.9 Percent	Later	Later

E. Fuels

Type (Be Specific)	Consumption*		Maximum Heat Input (MMBTU/hr)
	avg/hr	max./hr	
No. 2 Fuel Oil		238 Gal	31.4

\*Units: Natural Gas--MMCF/hr; Fuel Oils--gallons/hr; Coal, wood, refuse, other--lbs/hr.

Fuel Analysis: No. 2 Fuel Oil

Percent Sulfur: 0.3 Max Percent Ash: Trace

Density: 7.05 (AP-42) lbs/gal Typical Percent Nitrogen: 0.2

Heat Capacity: BTU/lb (140,000 AP-42) BTU/gal

Other Fuel Contaminants (which may cause air pollution): See Section 10.9 of the Site

Certification Application for other fuel contaminants.

F. If applicable, indicate the percent of fuel used for space heating.

Annual Average None Maximum None

G. Indicate liquid or solid wastes generated and method of disposal.

Small quantities of solid waste will be generated. The fabric filter will collect  
99.9 percent of the solid waste and pneumatically transport it to the boilers.

**Emission Stack Geometry and Flow Characteristics (Provide data for each stack):**

Stack Height: 30 ft. Stack Diameter: 3.42 ft.  
 Gas Flow Rate: 77,362 ACFM          DSCFM Gas Exit Temperature: 180 °F.  
 Water Vapor Content:          % Velocity: 70 FPS

**SECTION IV: INCINERATOR INFORMATION**

NA

Type of Waste	Type 0 (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq. & Gas By-prod.)	Type VI (Solid By-prod.)
Actual lb/hr Incinerated							
Uncontrolled (lbs/hr)							

Description of Waste           
 Total Weight Incinerated (lbs/hr)          Design Capacity (lbs/hr)           
 Approximate Number of Hours of Operation per day          day/wk          wks/yr.           
 Manufacturer           
 Date Constructed          Model No.         

	Volume (ft) <sup>3</sup>	Heat Release (BTU/hr)	Fuel		Temperature (°F)
			Type	BTU/hr	
Primary Chamber					
Secondary Chamber					

Stack Height:          ft. Stack Diameter:          Stack Temp.           
 Gas Flow Rate:          ACFM          DSCFM\* Velocity:          FPS

\*If 50 or more tons per day design capacity, submit the emissions rate in grains per standard cubic foot dry gas corrected to 50% excess air.

Type of pollution control device:  Cyclone  Wet Scrubber  Afterburner  
 Other (specify)         

3

Brief description of operating characteristics of control devices: \_\_\_\_\_

Ultimate disposal of any effluent other than that emitted from the stack (scrubber water, ash, etc.):

NOTE: Items 2, 3, 4, 6, 7, 8, and 10 in Section V must be included where applicable.

### SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

1. Total process input rate and product weight -- show derivation [Rule 17-2.100(127)]

To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.

3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).

4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, design pressure drop, etc.)

5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3 and 5 should be consistent: actual emissions = potential (1-efficiency).

6. An 8 1/2" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.

7. An 8 1/2" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).

8. An 8 1/2" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

The appropriate application fee in accordance with Rule 17-4.05. The check should be made payable to the Department of Environmental Regulation.

10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

**SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY**

A. Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source?

Yes  No

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

B. Has EPA declared the best available control technology for this class of sources (If yes, attach copy)

Yes  No

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

C. What emission levels do you propose as best available control technology?

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration
NA	

D. Describe the existing control and treatment technology (if any).

1. Control Device/System:

2. Operating Principles:

3. Efficiency:\*

4. Capital Costs:

Explain method of determining

5. Useful Life:

7. Energy:

9. Emissions:

6. Operating Costs:

8. Maintenance Cost:

Contaminant

Rate or Concentration

Contaminant	Rate or Concentration

10. Stack Parameters

- a. Height: ft.      b. Diameter: ft.
- c. Flow Rate: ACFM      d. Temperature: °F.
- e. Velocity: FPS

E. Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary).

1.

- a. Control Device:      b. Operating Principles:
- c. Efficiency:<sup>1</sup>      d. Capital Cost:
- e. Useful Life:      f. Operating Cost:
- g. Energy:<sup>2</sup>      h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:
- j. Applicability to manufacturing processes:
- k. Ability to construct with control device, install in available space, and operate within proposed levels:

2.

- a. Control Device:      b. Operating Principles:
- c. Efficiency:<sup>1</sup>      d. Capital Cost:
- e. Useful Life:      f. Operating Cost:
- g. Energy:<sup>2</sup>      h. Maintenance Cost:
- i. Availability of construction materials and process chemicals:

<sup>1</sup>Explain method of determining efficiency.

<sup>2</sup>Energy to be reported in units of electrical power - KWH design rate.

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

3.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Cost:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

4.

a. Control Device:

b. Operating Principles:

c. Efficiency:<sup>1</sup>

d. Capital Costs:

e. Useful Life:

f. Operating Cost:

g. Energy:<sup>2</sup>

h. Maintenance Cost:

i. Availability of construction materials and process chemicals:

j. Applicability to manufacturing processes:

k. Ability to construct with control device, install in available space, and operate within proposed levels:

F. Describe the control technology selected:

1. Control Device:

2. Efficiency:<sup>1</sup>

3. Capital Cost:

4. Useful Life:

5. Operating Cost:

6. Energy:<sup>2</sup>

7. Maintenance Cost:

8. Manufacturer:

9. Other locations where employed on similar processes:

a. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

<sup>1</sup>Explain method of determining efficiency.

<sup>2</sup>Energy to be reported in units of electrical power - KWH design rate.



(5) Environmental Manager:

(6) Telephone No.: ;

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration


(8) Process Rate:<sup>1</sup>

b. (1) Company:

(2) Mailing Address:

(3) City:

(4) State:

(5) Environmental Manager:

(6) Telephone No.:

(7) Emissions:<sup>1</sup>

Contaminant

Rate or Concentration


(8) Process Rate:<sup>1</sup>

10. Reason for selection and description of systems:

<sup>1</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

**SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION**

A. Company Monitored Data No preconstruction monitoring is required. See Section 2.3 of the Application.

1. \_\_\_\_\_ no. sites \_\_\_\_\_ TSP \_\_\_\_\_ ( ) SO<sub>2</sub>\* \_\_\_\_\_ Wind spd/dir

Period of Monitoring \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ to \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
month day year month day year

Other data recorded \_\_\_\_\_

Attach all data or statistical summaries to this application.

Specify bubbler (B) or continuous (C).

3

2. Instrumentation, Field and Laboratory

- a. Was instrumentation EPA referenced or its equivalent?  Yes  No
- b. Was instrumentation calibrated in accordance with Department procedures?  
 Yes  No  Unknown

B. Meteorological Data Used for Air Quality Modeling

- 1. 5 Year(s) of data from 01 / 01 / 81 to 12 / 31 / 85  
month day year month day year
- 2. Surface data obtained from (location) Jacksonville, Florida
- 3. Upper air (mixing height) data obtained from (location) Waycross, Georgia
- 4. Stability wind rose (STAR) data obtained from (location) NA

C. Computer Models Used

- 1. ISCST (UNAMAP6) Modified? If yes, attach description.
- 2. \_\_\_\_\_ Modified? If yes, attach description.
- 3. \_\_\_\_\_ Modified? If yes, attach description.
- 4. \_\_\_\_\_ Modified? If yes, attach description.

Attach copies of all final model runs showing input data, receptor locations, and principle output tables.

Applicants Maximum Allowable Emission Data

Pollutant	Emission Rate	
TSP	<u>Negligible</u>	grams/sec
SO <sup>2</sup>	<u>1.20</u>	grams/sec

E. Emission Data Used in Modeling

Attach list of emission sources. Emission data required is source name, description of point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

## DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHEAST DISTRICT

BILLS ROAD  
JACKSONVILLE, FLORIDA 32207BOB GRAHAM  
GOVERNORVICTORIA J. TSCHINKEL  
SECRETARYG. DOUG DUTTON  
DISTRICT MANAGERAPPLICATION TO OPERATE/CONSTRUCT INDUSTRIAL  
WASTEWATER TREATMENT AND DISPOSAL SYSTEMS

Type application:  Operation  Temporary Operation  Construction  
 Source Status:  New  Existing  Modification  
 Source Name: Cedar Bay Cogeneration Project County: Duval  
 Source Location: Street: 9469 Eastport Road City: Jacksonville  
 Latitude 30° 24' 55" Longitude 81° 35' 45"  
 Applicant Name and Title: Jeffrey Swain, Project Director  
 Applicant Address: 1001 North 19th Street, Suite 2000, Arlington, VA 22209 3

## DIRECTIONS

1. All applicable items must be completed in full in order to avoid delay in processing this application. Where attached sheets or other technical documentations are utilized in lieu of the space provided, indicate appropriate cross references.
2. Please type or print in ink.
3. Four (4) copies of this application and any supplemental information, and a check for the application fee in accordance with Florida Administrative Code Rule 17-4.05, made payable to the State of Florida Department of Environmental Regulation, must be submitted to the appropriate District office or approved local program.
4. Projects involving construction shall be accompanied by two (2) sets of engineering drawings, specifications and design data as prepared by a Professional Engineer registered in the State of Florida, where required by Chapter 471, Florida Statutes.
5. A map showing site location, property boundaries, layout of installation and other buildings, discharge point(s), etc., shall accompany the application. It shall also include any surface water bodies or potable water supply wells beyond the property boundaries that may be affected by a discharge plume, if any effluent is to be discharged to groundwater.
6. If effluent or sludges generated as wastes in the treatment process qualify as hazardous wastes as defined by Florida Administrative Code Rule 17-30, additional hazardous waste permits may be required.

PART I - STATEMENTS BY APPLICANT AND ENGINEER

A. Applicant

The undersigned owner or authorized representative\* of AES Cedar Bay, Inc.

is fully aware that the statements made in this application for a Construction/Operation permit are true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to maintain and operate the pollution source and pollution control facilities in such a manner as to comply with the provisions of Chapter 403, Florida Statutes, and all the rules of the department. He also understands that a permit, if granted by the department, will be non-transferable and he will promptly notify the department upon sale or legal transfer of the permitted establishment.

*Jeffrey V. Swain*  
Signature of the owner or authorized representative

Jeffrey V. Swain, Project Director  
Name and Title (Please type)

Date: 10-25-88 Telephone No. (703) 522-1315

\*Attach letter of authorization

B. Professional Engineer Registered in Florida (where required by Chapter 471, F.S.)

This is to certify that the engineering features of this pollution control project have been designed/examined by me and found to be in conformity with modern engineering principles, applicable to the treatment and disposal of pollutants characterized in the permit application. There is reasonable assurance, in my professional judgment, that the pollution control facilities, when properly maintained and operated, will discharge an effluent that complies with all applicable statutes of the State of Florida and the rules of the department. It is also agreed that the undersigned, if authorized by the owner, will furnish the applicant a set of instructions for the proper maintenance and operation of the pollution control facilities and, if applicable, pollution sources.

Signature: *D D Schultz*

Company Name: Black & Veatch, Engineers-Architects

Name (please type) Donald Dean Schultz

Address: P. O. Box 8405

Florida Registration No. 30304

Kansas City, Missouri 64114

Telephone No. (913) 339-2000

Date: October 26, 1988



PART II - DETAILED DESCRIPTION OF SOURCE

- A. Describe the nature and extent of the project. Refer to existing pollution control facilities, expected improvements in performance of the facilities and state whether the project will result in full compliance. Attach additional sheet if necessary.

The Cedar Bay Cogeneration Project will include three fluidized bed coal-fired combustion boilers. The facility will produce approximately 225 MW of electricity for sale to Florida Power & Light, and will produce approximately 640,000 lb/hr of process steam for sale to the Seminole Kraft paper mill. Wastewater treatment facilities are described in Sections 3.5 and 5.2 of the SCA and are expected to result in full compliance.

- B. Construction schedule, if applicable.

Start of Construction (Date): January 1990

Completion of Construction (Date): 1992

- C. Cost of Construction (Show a breakdown of costs for individual components/units of the project serving pollution control purposes only). Information on actual costs shall be furnished with the application for operation permit.

Later

- D. For this source indicate any previous DER permits; issuance dates, and expiration dates; and orders and notices.

Existing permits for Seminole Kraft papermill, including its wastewater treatment system, are included in Section 10.4 of the SCA.

- E. Indicate the relationship between this project and area regional planning for wastewater treatment. List steps to be taken for this industrial waste facility to become part of an area wide wastewater treatment system.

NA

- F. Indicate EPA-NPDES permit, effective date and expiration date.

Permit No. FL: 0000400\*

October 1, 1983

September 30, 1988

Issue Date

Expiration Date

Modified February  
20, 1985

(In the process of  
being reissued)

DER Form 17-1.204(2)

Effective November 30, 1982

Page 3 of 9

\*Existing permit for Seminole Kraft paper mill which will be maintained. Application is being made for a separate permit for additional discharges from Cedar Bay Cogeneration Project.



**PART IV - INDUSTRIAL WASTEWATER CHARACTERISTICS**

Information furnished in this section for construction permit shall be based on reasonable prediction and good professional judgment. However, actual data shall be submitted when applying for an operation permit. Note: If there is more than one discharge point, submit the following data for each point.

**A. Flow (MGD):**

0.91  
Average
1.97  
Maximum
1.97  
Design

**B. Water Quality Characteristics of Effluent**

**PARAMETER**

**CONCENTRATION (note units)**

**Organic:**

- volatile or purgeable
- base/neutral extractable
- acid extractables
- total organic carbon (TOC)
- biological oxygen demand (BOD)

**Inorganic**

- heavy metals
- major ions

**Physical**

- pH
- specific conductivity
- temperature
- suspended solids

	Minimum	Maximum	30-day Average
		10 mg/l	<10 mg/l
		10 mg/l	<10 mg/l
		See Table 5.2-8 of SCA	
		See Table 5.2-8 of SCA	
		8.0	7.2
		4500	3300
		95 F	90 F
		30 mg/l	20 mg/l

**PART IV - INDUSTRIAL WASTEWATER CHARACTERISTICS**

Information furnished in this section for construction permit shall be based on reasonable prediction and good professional judgment. However, actual data shall be submitted when applying for an operation permit. Note: If there is more than one discharge point, submit the following data for each point.

**A. Flow (MGD):**

0.007  
Average

0.50  
Maximum

0.50  
Design

**B. Water Quality Characteristics of Effluent**

**PARAMETER**

**CONCENTRATION (note units)**

	Minimum	Maximum	30-day Average
Organic:			
volatile or purgeable			
base/neutral extractable			
acid extractables			
total organic carbon (TOC)		<20 mg/l	<10 mg/l
biological oxygen demand (BOD)		<20 mg/l	<10 mg/l
Inorganic			
heavy metals		Not Present	
major ions		Not Present	
Physical			
pH	6.0	8.5	7.0
specific conductivity			
temperature	60 F	80 F	90 F
suspended solids		50 mg/l	30 mg/l



**PART IV - INDUSTRIAL WASTEWATER CHARACTERISTICS**

Information furnished in this section for construction permit shall be based on reasonable prediction and good professional judgment. However, actual data shall be submitted when applying for an operation permit. Note: If there is more than one discharge point, submit the following data for each point.

**A. Flow (MGD):**

0.213	0.340	0.340
Average	Maximum	Design

**B. Water Quality Characteristics of Effluent**

**PARAMETER** **CONCENTRATION (note units)**

**Organic:**

- volatile or purgeable
- base/neutral extractable
- acid extractables
- total organic carbon (TOC)
- biological oxygen demand (BOD)

**Inorganic**

- heavy metals
- major ions

**Physical**

- pH
- specific conductivity
- temperature
- suspended solids

Minimum	Maximum	30-day Average
	10 mg/l	< 10 mg/l
	10 mg/l	< 10 mg/l
	See 10.1.1 NPDES Application	
See 10.1.1	NPDES Application	
5.0	9.0	7.1
60 F	90 F	80 F Summer 60 F Winter
	80 mg/l	40 mg/l

2

PART V - EFFLUENT DISPOSAL

A. If effluent is discharged to surface waters, complete the following for each discharge point.

1. Immediate receiving body of water (RBW):

a. Name St. Johns River

b. Type of receiving water:  Fresh  Salt or brackish

Drainage Ditch  Landlocked Lake  
 Canal  Lake with Outfall  
 Creek  Tidal Estuary  
 River  Ocean or Gulf  
 Other (Specify) \_\_\_\_\_

c. Classification of receiving water (in accordance with Rule 17-3): Class III

d. Minimum 7-day 10 year low flow of the RBW at the discharge point (if appropriate):  
5000 cfs (EPA letter to Seminole Kraft Corp. dated 9-28-88)

e. Identify and describe the flow of effluent from the point of discharge to a major body of water. A suitably marked map or aerial photograph may be used. Discharge structure within St. Johns River.

2. Outfall Information:

a. Discharge location: St. Johns River

Latitude 30° 24' 55" N Longitude 81° 35' 45" W

b. Design configuration and construction materials:  
Single 72 inch concrete pipe splits and reduces to four separate 36 inch pipes located near edge of ship channel.

c. Distance from shore: Approximately 156 ft.

d. Diameter: Four 36 inch discharges

e. Elevation of discharge invert: - 20 ft. MSL

f. Receiving water bottom depth at point of discharge: -30 ft. MSL

3. Do you request a mixing zone (refer to Fla. Admin. Code Rule 17-4.244)? If yes, for what parameters or pollutants?

Refer to Section 5.2 of SCA.

B. If effluent is discharged to groundwater, complete the following: N/A

1. Disposal method:  Slow Rate  Percolation/Evaporation Pond  
 Rapid Rate  Combination (specify) \_\_\_\_\_  
 Overland Flow  Other (specify) \_\_\_\_\_  
 Absorption Field \_\_\_\_\_

PART V - EFFLUENT DISPOSAL

A. If effluent is discharged to surface waters, complete the following for each discharge point.

1. Immediate receiving body of water (RBW):

a. Name St. Johns River

b. Type of receiving water: [ ] Fresh [X] Salt or brackish

- [ ] Drainage Ditch
- [ ] Canal
- [ ] Creek
- [X] River
- [ ] Other (Specify) \_\_\_\_\_
- [ ] Landlocked Lake
- [ ] Lake with Outfall
- [ ] Tidal Estuary
- [ ] Ocean or Gulf

c. Classification of receiving water (in accordance with Rule 17-3): Class III

d. Minimum 7-day 10 year low flow of the RBW at the discharge point (if appropriate): 5000 cfs (EPA letter to Seminole Kraft Corp. dated 9-28-88)

e. Identify and describe the flow of effluent from the point of discharge to a major body of water. A suitably marked map or aerial photograph may be used. Discharge structure within St. Johns River.

2. Outfall Information:

a. Discharge location: St. Johns River

Latitude 30° 24' 55" N Longitude 81° 35' 45" W

b. Design configuration and construction materials: Single 72 inch concrete pipe splits and reduces to four separate 36 inch pipes located near edge of ship channel.

c. Distance from shore: Approximately 156 ft.

d. Diameter: Four 36 inch discharges

e. Elevation of discharge invert: - 20 ft. MSL

f. Receiving water bottom depth at point of discharge: -30 ft. MSL

3. Do you request a mixing zone (refer to Fla. Admin. Code Rule 17-4.244)? If yes, for what parameters or pollutants?

Yes, for thermal discharges, refer to Section 5.1 of SCA.

B. If effluent is discharged to groundwater, complete the following: N/A

- 1. Disposal method: [ ] Slow Rate [ ] Percolation/Evaporation Pond
- [ ] Rapid Rate [ ] Combination (specify) \_\_\_\_\_
- [ ] Overland Flow [ ] Other (specify) \_\_\_\_\_
- [ ] Absorption Field \_\_\_\_\_

PART V - EFFLUENT DISPOSAL

A. If effluent is discharged to surface waters, complete the following for each discharge point.

1. Immediate receiving body of water (RBW):

a. Name Broward River

b. Type of receiving water: [ ] Fresh [ ] Salt or brackish

- [ ] Drainage Ditch
- [ ] Canal
- [ ] Creek
- [X] River
- [ ] Other (Specify) \_\_\_\_\_
- [ ] Landlocked Lake
- [ ] Lake with Outfall
- [ ] Tidal Estuary
- [ ] Ocean or Gulf

c. Classification of receiving water (in accordance with Rule 17-3): Class III

d. Minimum 7-day 10 year low flow of the RBW at the discharge point (if appropriate): N/A cfs

e. Identify and describe the flow of effluent from the point of discharge to a major body of water. A suitably marked map or aerial photograph may be used. Discharge chute to Broward River.

2. Outfall Information:

a. Discharge location: Broward River

Latitude 30 ° 25 ' 22 "N Longitude 81 ° 36 ' 35 "W

b. Design configuration and construction materials: Single concrete discharge chute from construction dewatering pond to Broward River shoreline.

c. Distance from shore: N/A

d. Diameter: N/A

e. Elevation of discharge invert: N/A MSL

f. Receiving water bottom depth at point of discharge: N/A MSL

3. Do you request a mixing zone (refer to Fla. Admin. Code Rule 17-4.244)? If yes, for what parameters or pollutants?

Yes, for nickel and zinc in dewatering discharge.

8. If effluent is discharged to groundwater, complete the following: N/A

- 1. Disposal method: [ ] Slow Rate [ ] Percolation/Evaporation Pond
- [ ] Rapid Rate [ ] Combination (specify) \_\_\_\_\_
- [ ] Overland Flow [ ] Other (specify) \_\_\_\_\_
- [ ] Absorption Field \_\_\_\_\_

1  
3

2. Location(s) of application area(s):

-----  
-----

3. Ownership of land (if different from applicant): \_\_\_\_\_  
Attach approval from owner for use of land for effluent disposal.

4. Describe the hydrology and geologic structures of the affected area, using site specific information, including the general vertical and lateral limits of each classification of groundwater. (Maps and cross sections are suggested.)

5. What is the direction of groundwater flow? \_\_\_\_\_

6. Water table levels generally range from a high of \_\_\_\_\_ feet to a low of \_\_\_\_\_ feet below average land surface elevation.

7. Surface or sub-surface irrigation:

a. Description of disposal structure(s).

b. Area under irrigation; total \_\_\_\_\_ per rotation.

Latitude \_\_\_\_° \_\_\_\_' \_\_\_\_"N Longitude \_\_\_\_° \_\_\_\_' \_\_\_\_"W

c. Irrigation rate: \_\_\_\_\_

d. Percolation rate: \_\_\_\_\_

e. Ultimate disposal of surface/sub-surface runoff: \_\_\_\_\_

f. Type of cover crop and general routine operation of the system:

8. Surface Impoundments:

a. Number of cells and latitude and longitude of each. \_\_\_\_\_

b. Bottom area of cells: \_\_\_\_\_ ft<sup>2</sup> \_\_\_\_\_ acres

c. Design depth of water in cells: \_\_\_\_\_ ft

d. Cell configuration (if rectangular): Length \_\_\_\_\_ ft; Width \_\_\_\_\_ ft

e. Average hydraulic loading rate: \_\_\_\_\_ inches/day \_\_\_\_\_ GPD/ft<sup>2</sup>

f. Hydraulic loading period: \_\_\_\_\_ days; resting period \_\_\_\_\_ days

g. Percolation rate: \_\_\_\_\_ gpd/ft<sup>2</sup>

9. Number and location of monitoring wells: \_\_\_\_\_

**ADDITIONAL DATA FOR TEMPORARY OPERATION PERMIT**  
(For Existing Sources Not Meeting Department Standards)

**Justification for Temporary Operation Permit Request**

A. Attach additional sheets responding to the following items:

1. The facts and reasons which support that:

- a. the applicant has a waste for which no feasible and acceptable method of treatment or disposal is known and the applicant is making a bona fide effort through research and other means to discover and implement such a method;
- b. the applicant needs permission to pollute the waters within the state for a period of time necessary to complete research, planning, construction, installation or operation of an approved abatement facility or alternate waste disposal system;
- c. there is no present reasonable, alternative means of disposing of applicant's waste other than by discharging into waters of the state;
- d. the denial of a temporary operation permit would work an extreme hardship upon the applicant;
- e. granting of a temporary operation permit will be in the public interest;
- f. the schedule for meeting compliance in C. is reasonable;
- g. the discharge will not be unreasonably destructive to the quality of the receiving waters.

B. Technical Data:

1. Condition of receiving body of water:

2. Proposed Time Discharge is Required: \_\_\_\_\_

3. Reasons for Time Required:

4. Reasons why conditions of Chapter 403, F.S., and Florida Administrative Code Rules 17-3, 17-4 and 17-6 have not been met:

C. Plans for meeting full compliance with Chapter 403, F.S., and Rules 17-3, 17-4 and 17-6.

Schedule of Increments of Progress to meet compliance:

1. Date when planning is expected to be complete \_\_\_\_\_
2. Date when engineering will be complete \_\_\_\_\_
3. Date construction application will be submitted to upgrade or replace the existing plant or build lift station and force main to phase out the present facility \_\_\_\_\_
4. Date contract will be let \_\_\_\_\_
5. Date construction will commence \_\_\_\_\_
6. Date construction is to be complete and so certified \_\_\_\_\_
7. Date that wastewater collection/transmission/treatment/effluent disposal systems will be certified "in compliance" with your permit \_\_\_\_\_

(cross out inappropriate components)

D. Who will be responsible for overseeing that the above time schedule will be met?

NAME \_\_\_\_\_  
(Print or type)

TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_  
\_\_\_\_\_

TELEPHONE NUMBER \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

10.6.3 Joint Application for Permit, Dredge, Fill, and Structures  
(Deleted)



#### 10.6.4 Florida Ground Water Monitoring Plan Approval

10.6.4.1 Monitoring Well Locations. The AES Cedar Bay Cogeneration facility is located on a portion of the existing Seminole Kraft Mill Plant site. Ground water quality has been monitored periodically on the mill site since 1972.

The geohydrology, plant facility arrangement and plant water use have been documented previously in Sections 2.3, 3.2, and 3.5 of this application. The general trend of the ground water flow is across the project site to the Broward and St. Johns Rivers. The proposed new monitoring wells are located around the perimeter of the project site, as shown on Figure 5.3-2. Wells CB-1 and CB-2 are located upgradient from the project site. Wells CB-3 through CB-6 are downgradient from the plant facilities adjacent to the Broward River. Due to the confined area of the project, the wells are located relatively close to the plant facilities.

Wells CB-3 and CB-4 are downgradient of the ash pellet storage area. Wells CB-5 and CB-6 are downgradient of the coal storage area and storage area runoff pond, respectively. Only one intermediate monitoring well, CB-3, is provided since the plant facilities are located relatively close to the boundary of the zone of discharge.

10.6.4.2 Monitoring Well Installation. Risers for piezometers will consist of 2-inch diameter Schedule 40 PVC or equal pipe. The lower 60 inches of each riser will be a slotted screen section with 0.01-inch wide slots. The bottom of each riser will be capped.

Couplings for joining pipe sections will be the same material as the rise pipe. Joining cement will be as recommended by the pipe manufacturer.

Bentonite drilling mud will not be used to advance the hole in which a piezometer is to be installed. However, Johnson's "Revert" or an equivalent organic drilling fluid may be used.

Uniformly graded silica sand will be used as a backfill around the slotted section and will extend a minimum of 24 inches above the section. The sand filter will extend a minimum of 12 inches below the bottom of the screen. The sand filter will be placed in a slow, steady stream around the screen.

Directly above the sand filter will be an 18-inch impervious clay bentonite pellet seal and above the bentonite seal the entire length of the monitoring well to the ground surface will be backfill consisting of cement and sand grout.

The riser will extend a minimum of 24 inches above the ground surface and will receive a slip-on protective cap. The cap will have a 1/8-inch diameter drilled hole in it for venting. Each piezometer installation will have a protective casing with cover.

The standard protective casing will be 5-inch minimum diameter galvanized steel with lockable cap and heavy-duty padlock acceptable to the Engineer. All locks will be keyed alike. The steel protective casing will have a 1/8-inch diameter vent hole drilled in it 1 foot above the ground surface.

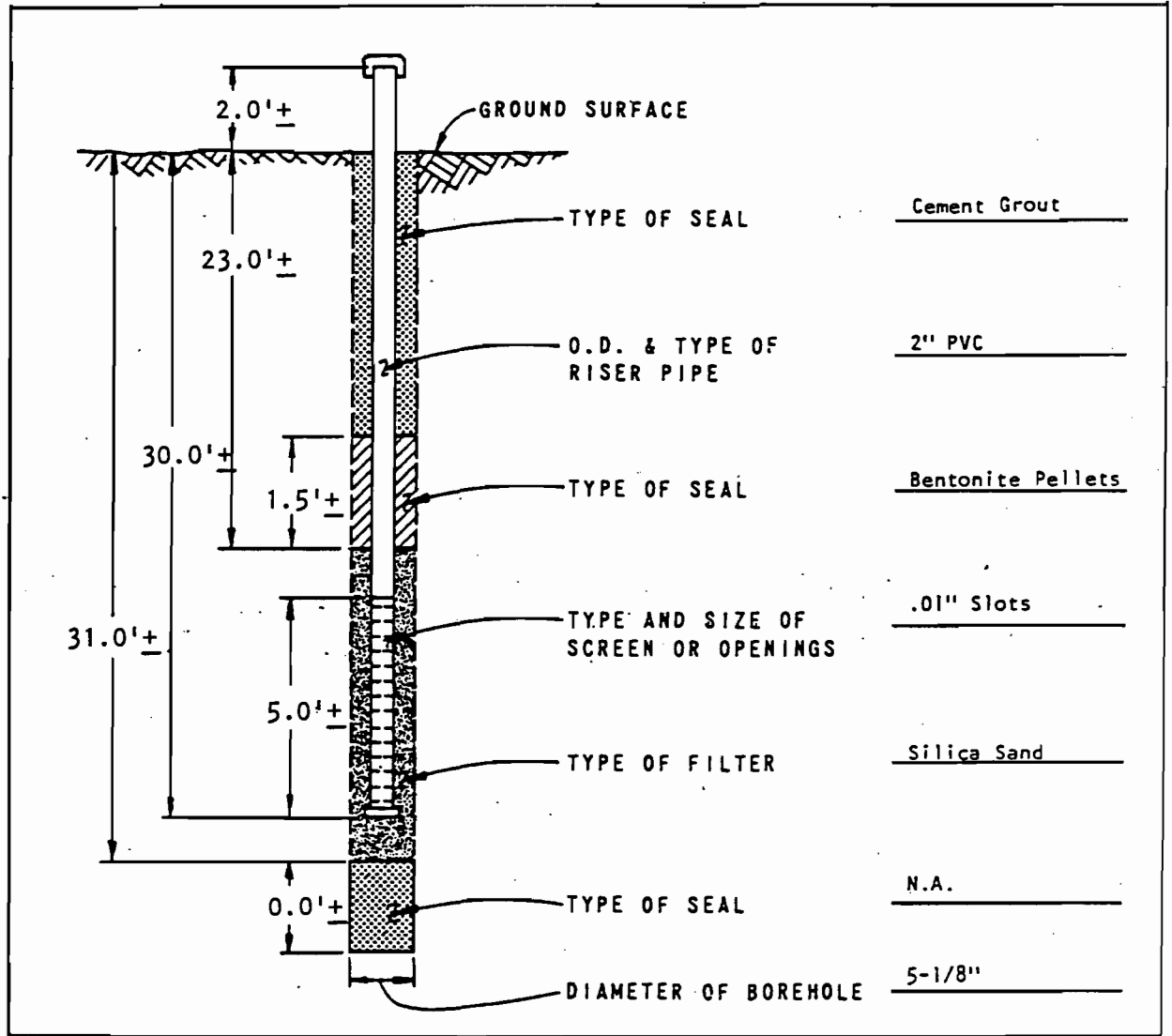
Following installation of the well, filter, and backfilling, the well will be developed by airlifting or pumping until the discharge water is clear and sounding indicates all loose material has been removed from the bottom of the piezometer. If an organic drilling fluid is used, Johnson's "Fast-Brake" or an equivalent will be added to the piezometer prior to development.

Each well will be marked with three vertical 6-foot long nominal 2-inch steel pipe with caps projecting a minimum of 3 feet above the ground surface and placed at the points of an equilateral triangle around the piezometer. The pipes will be painted white. The stakes will be embedded at least 30 inches in concrete.

The attached Figure 10.6-1 shows a complete monitoring well installation.

10.6.4.3 Sampling and Analysis Procedures. The ground water will be monitored to measure fluctuations in the potentiometric surface and water quality. Ground water levels in the water table zone will be recorded monthly throughout all phases of the project from preliminary investigation through operation. Water quality analyses of samples of the ground water

TYPICAL MONITORING  
WELL INSTALLATION



TYPICAL MONITORING WELL INSTALLATION

Figure 10.6-1

will be completed monthly until the base-line water quality is established, then bimonthly through the first year of plant operation and semiannually thereafter. Parameters monitored and sample collection method for this are presented in Tables 10.6-1 and 10.6-2. A summary of the monitoring frequency is given in Table 10.6-3. Chemical analyses using standard methods required by the Florida Department of Environmental Regulation will be performed on ground water samples.

TABLE 10.6-1. LIST OF PHYSICAL AND CHEMICAL PARAMETERS FOR GROUND WATER QUALITY ANALYSIS

Inorganic Constituents

Ammonia (as  $\text{NH}_4$ )  
 Calcium  
 Chloride  
 Fluoride  
 Hardness (as  $\text{CaCO}_3$ )  
 Hydrogen Sulfide  
 Magnesium  
 Nitrate ( $\text{NO}_3^-$ )  
 Nitrite ( $\text{NO}_2^-$ )  
 Phosphate  
 Potassium  
 Silica (colloidal and dissolved)  
 Sodium  
 Strontium  
 Sulfate

Organic Constituents

PCB  
 Phenols  
 Total Organic Carbon

Metals (Total)

Aluminum  
 Arsenic  
 Barium  
 Boron

Metals (Total) (Continued)

Cadmium  
 Chromium (Hexavalent)  
 Copper  
 Iron  
 Lead  
 Manganese  
 Mercury  
 Molybdenum  
 Nickel  
 Selenium  
 Silver  
 Vanadium  
 Zinc

Miscellaneous

Alkalinity (as  $\text{CaCO}_3$ )\*  
 Alkalinity (as  $\text{HCO}_3$ )\*  
 Color  
 Conductivity\*  
 Gross Alpha  
 pH\*  
 Temperature\*  
 Total Dissolved Solids  
 Total Suspended Solids  
 Turbidity

\*Field and laboratory measurements.

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TABLE 10.6-2. SAMPLE COLLECTION AND PRESERVATION METHODS

<u>Container</u>	<u>Volume</u>	<u>Preservation</u>	<u>Measurements</u>
Plastic	0.5 gal	None	Gross alpha radiation
Plastic	1.0 gal	None	pH, alkalinity, chloride, fluoride, conductivity, total dissolved solids, total suspended solids, chromium (hexavalent), silica, sulfate, color, turbidity
Plastic	0.25 gal	Nitric acid to pH less than 2	Hardness, mercury, arsenic, calcium, potassium, sodium, strontium, aluminum, barium, selenium, vanadium, cadmium, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, silver, zinc
Plastic	0.25 gal	Sulfuric acid to pH less than 2	Ammonia, nitrate, nitrite, phosphate, boron, total organic carbon
Glass	0.25 gal	Phosphoric acid to pH less than 4. 1 gram copper sulfate per liter of sample added after collection	Phenol
Glass (Amber) with Teflon Cap	1.0 gal	None	PCB
Plastic	250 ml	1 ml of 1 molar zinc acetate, plus 1 ml of 1 normal sodium hydroxide	Hydrogen sulfide

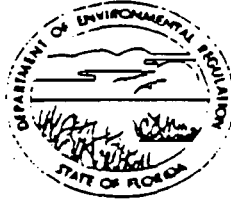
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TABLE 10.6-3. MONITORING FREQUENCY OF SITE MONITORING WELLS

<u>Measurement</u>	<u>Project Phase</u>				
	<u>Pre-Site Preparation</u>	<u>Site Preparation</u>	<u>Plant Construction</u>	<u>Plant Operation Year 0-1</u>	<u>Plant Operation Year 1</u>
Water Level	Monthly	Monthly	Monthly	Monthly	Monthly
Water Quality	Monthly*	Monthly*	Monthly*	Monthly*	Semiannually

\*Water quality analyses will be bimonthly after base-line quality is established.

## DEPARTMENT OF ENVIRONMENTAL REGULATION

NORTHWEST DISTRICT  
BRANCH OFFICEWIN TOWERS OFFICE BUILDING  
500 BLAIR STONE ROAD  
TALLAHASSEE, FLORIDA 32301BOB GRAHAM  
GOVERNORVICTORIA J. TSCHINKEL  
SECRETARYAPPLICATION FOR MONITORING PLAN APPROVAL  
(Existing Sources)

INSTRUCTIONS: Submit four copies of this application and four copies of supporting information such as laboratory reports, maps and other documents to the appropriate District Office.

## PART I - General Information

In compliance with Florida Administrative Code Rule 17-4.245(6)(c)2., the undersigned installation owner applies for approval from the Department for the monitoring criteria on the following property owned by:

<u>AES Cedar Bay, Inc.</u>			<u>Permit No.</u>	
Corporation or Owner's Name			4913, 4961	
<u>Cedar Bay Cogeneration Plant</u>			<u>SIC Code</u>	
Installation Name				
<u>9469 Eastport Road, Jacksonville</u>	<u>32218</u>	<u>Duval</u>	<u>30°25'21"N</u>	<u>81°36'23"W</u>
Street Address	City	Zip County	Latitude	Longitude
		<u>X 1/4 X 1/4 X 1/4 of</u>	<u>46</u>	<u>T1S, R27E</u>
			Section, Township, Range	

OWNER OR AUTHORIZED REPRESENTATIVE (If representative, attach letter of authorization.)

<u>Jeffrey V. Swain, Project Director</u>			
Name and Official Title (Print or Type)			
<u>1001 North 19th Street,</u>	<u>Arlington,</u>	<u>Virginia 2209</u>	<u>703-522-1315</u>
Street	City	State Zip	Telephone Number
Signature: <u>[Signature]</u>			Date: <u>10-9-89</u>

## PART II - Content of Monitoring Plan

Pursuant to Rule 17-4.245(6)(d), the plan shall contain findings, recommendations and plans for ground water monitoring derived from site specific information. For the type of information to be considered in the development and assessment of the plan, see page two of this form. In any case, the following items must be included:

1. Location(s) of proposed well(s) to sample natural unaffected background water quality and the intermediate and compliance well(s) in the down gradient direction.
2. Construction details of the monitor well(s), including type of casing material, diameter of casing, depth of casing and location of screens.
3. A water sampling and chemical analysis procedure which can determine the natural unaffected background quality of the ground water, and the quality of the receiving ground water in the downgradient intermediate and compliance wells.



The following information is the type generally required for detailed assessment of the most complex plans, with less complex cases not needing this degree of evaluation:

1. Hydrogeological, physical and chemical data for the site, including:
  - a. Direction and rate of ground water flow, and background ground water quality;
  - b. Porosity, horizontal and vertical permeability for the aquifer(s) and the depth to, and lithology of, the first confining bed(s);
  - c. Vertical permeability, thickness, and extent of any confining beds;
  - d. Topography, soil information and surface water drainage systems surrounding the site;
2. Waste disposal rate and frequency, chemical composition, method of discharge, pond volume, spray-field dimension, or other applicable site specific information;
3. Toxicity of waste;
4. Present and anticipated wastewater volume, seepage rate to the receiving ground water, physical, chemical, microbiological (whichever is applicable) characteristics of the leachate;
5. Disposal system water balance;
6. Present and reasonably expected future pollution sources located within one mile radius of the site;
7. Inventory depth, construction details, and cones of depression of water supply wells and monitor wells located within one mile radius of the site or potentially affected by the discharge;
8. Site specific economic and feasibility considerations;
9. Chronological information on water levels in the monitor wells and water quality data on water supplies collected from the water supply and monitor wells;
10. Type and number of waste disposal facilities within the installation;
11. Chronological information on surface water flows and water quality upstream and downstream from the site;
12. Construction and operation details of disposal facilities;
13. History of construction and land development in the vicinity of the site.

A monitoring program instituted under some other state, federal, or local government regulation or permit may be substituted (or referenced if contained in an existing department permit) if such program is in substantial compliance with Part II.

10.7 LOCAL PERMIT APPLICATIONS OR APPROVALS

10.7.1 St. Johns River Water Management District Water Use Permit Application

Water needs for the Cedar Bay Cogeneration Project are described in Section 3.5 of the SCA. Total average and maximum water requirements are approximately 5.4 mgd and 7 mgd, respectively. Water will be obtained from the existing Seminole Kraft Corporation (SK) well field. SK has current authorization (Permit No. 2-032-0002U) for a maximum annual withdrawal not to exceed 9.13 Bgal/yr (25 mgd). Existing permits are included in Section 10.4. The water use permit application included in this section is a new application for estimated water needs for the proposed cogeneration project.



**SUMMARY DATA SHEET**  
Please print all information clearly - Complete applicable blocks only  
Attach additional list (if necessary) to list all sources/wells

**EXISTING SOURCE(S) OF WATER INFORMATION**

WATER SOURCE NUMBER	LOCATION OF WITHDRAWAL	MAXIMUM WITHDRAWAL CAPACITY	AVERAGE DAILY USE	NAME OF SOURCE OR AQUIFER
ONE	Existing Seminole Kraft Corporation Well Field (see map in Figure 2.3-28 of SCA)	7* MGD	5.4 MGD	Floridan
TWO		MGD	MGD	
THREE		MGD	MGD	

REASON FOR NEW SOURCE(S): \*See attached description. No new source is planned. Existing Seminole Kraft well field has capability of supplying additional needed capacity.

**COMPLETE THIS BLOCK ONLY IF NEW SOURCE(S) IS A WELL(S) NA**

WELL NUMBER	OPEN HOLE DIAMETER	SURFACE CASING DIAMETER	TOTAL DEPTH IN FT.	CASING DEPTH IN FT.	AVERAGE WITHDRAWAL IN GPM	PUMP CAPACITY IN GPM	PREVIOUS PERMIT NUMBER	NAME OF SOURCE AQUIFER
ONE	IN.	IN.	FT.	FT.	GPM	GPM		
TWO	IN	IN	FT	FT	GPM	GPM		
THREE	IN	IN	FT	FT	GPM	GPM		

**COMPLETE THIS BLOCK ONLY IF NEW SOURCE(S) IS NOT A WELL(S)**

SOURCE NUMBER	PUMP CAPACITY	PROPOSED YIELD	CONTINGENT PROPERTY	IMPOUNDED AREA	PREVIOUS PERMIT NUMBER	NAME OF WATER SOURCE
ONE	GPM	GPM	ACRES	ACRES		
TWO	GPM	GPM	ACRES	ACRES		
THREE	GPM	GPM	ACRES	ACRES		

**WATER QUALITY INFORMATION - IF AVAILABLE**

SOURCE	CHLORIDE	COLIFORM	HARDNESS	PH	DEPTH TO WATER
ONE	PPM	PPM	PPM		FE
TWO	PPM	PPM	PPM		FE
THREE	PPM	PPM	PPM		FE

**ADJACENT LAND OWNER(S) INFORMATION \***

- | Name  | Address                 | Town or City       |
|---|-------------------------|--------------------|
| 1. Seminole Kraft Corporation, c/o Stone Container Corp.,   | 150 N. Michigan Avenue, | Chicago, IL 60601  |
| 2. Zion Jacksonville Limited Partnership, c/o Abraham Zion, | 41 Madison Avenue,      | New York, NY 10010 |
| 3. Champion International Corp., P.O. Box 18020,            | Jacksonville, FL        | 32229              |

If permit is for modification of a pumping facility which will change quantity withdrawn, indicate.....

OLD PUMP \* \* HP \_\_\_\_\_ GPM. NEW PUMP NA \_\_\_\_\_ HP \_\_\_\_\_ GPM

If well is for agricultural irrigation - Complete Form No. 161-2C-1178

If well is for commercial, industrial or public supply - Complete Form No. 161-2D-1178 (Form attached)

\*\*Seven existing wells, not all used at any one time.

**INSTRUCTIONS FOR PREPARATION OF DRAWING**

Drawings are required regardless of the purpose of the application. They must be a maximum of 8 1/2 x 14 and four (4) copies must be enclosed. The following should be clearly indicated on the drawings: Refer to Figures 3.2-1, 3.8-1, and 3.2-3 in the SCA.

- BOUNDARIES OF PROPERTY OWNED AT SITE(S) OF WITHDRAWAL.
- THE LOCATION OF THE PROPERTY WITH RESPECT TO SECTION LINES, ROADS, CANALS, LEVEES, LAKES, ETC. IDENTIFY KNOWN LANDMARKS BY NAME.
- ANY DRAINAGE OUTLETS FROM THE PROPERTY. INDICATE LENGTH AND DIAMETER OF CULVERTS AND CAPACITY (GPM) OF PUMPS.
- SURFACE WATER INLET, CULVERTS INCLUDING LENGTH AND DIAMETER, AND PUMPS FOR IRRIGATION, AND THE CAPACITY (GPM).
- LOCATIONS OF ALL EXISTING AND PROPOSED WELLS AND POINTS OF SURFACE WATER WITHDRAWALS ON YOUR PROPERTY AND NUMBER EACH CORRESPONDING WITH SUPPLEMENTARY DATA SHEETS.
- LOCATE ALL POINTS OF DISCHARGE OFF PROPERTY OR POINTS OF EFFLUENT DISCHARGE

If information provided on this application is insufficient to describe your operation, attach an additional sheet or sheets.

\*4 Amerada Hess Corporation, 2617 Heckscher Drive, Jacksonville, FL 32226

NOTE: If the following information is not considered adequate for a complete review of this application, additional information or a comprehensive engineering report may be required.

COMPLETE THIS SECTION WHEN USE IS FOR PUBLIC SUPPLY NA

Area owned at site of withdrawal \_\_\_\_\_ Acres Area served \_\_\_\_\_ Acres
Estimated population \_\_\_\_\_ Proposed average daily usage \_\_\_\_\_ MGD
Proposed maximum single day usage \_\_\_\_\_ MGD
Projected date of maximum capacity use \_\_\_\_\_ Mo./Yr.
Location of service area \_\_\_\_\_

Disposal method(s) and percent of each 1) \_\_\_\_\_ %
2) \_\_\_\_\_ % 3) \_\_\_\_\_ %

Location of disposal(s) 1) \_\_\_\_\_ 2) \_\_\_\_\_
3) \_\_\_\_\_

Type of treatment Primary [ ] Secondary [ ] Advanced [ ]

Daily average disposal \_\_\_\_\_ MGD

Method of reuse \_\_\_\_\_

Quantity reused \_\_\_\_\_ MGD Future reuse plans \_\_\_\_\_

Coefficient of transmissivity \_\_\_\_\_ sq. ft./day

Storage \_\_\_\_\_ Leakage \_\_\_\_\_ ft./day

Maximum drawdown at central point of withdrawal \_\_\_\_\_ ft.

Time of day of maximum pumpage \_\_\_\_\_

COMPLETE THIS SECTION WHEN USE IS FOR INDUSTRIAL OR COMMERCIAL

(Seminole Kraft Corporation) (Approximately 28 acres will be used for the Cedar Bay Cogeneration Project.)

Area owned at site of withdrawal \_\_\_\_\_ 425 Acres

Type of business Cogeneration

Specific use of water Condenser cooling, cycle makeup, service water, potable, fire protection

Average daily requirement during period of use \_\_\_\_\_ 5.4 MGD

Proposed maximum single daily use \_\_\_\_\_ 7 MGD

Months of year to be used
J F M A M J J A S O N D
[X] [X] [X] [X] [X] [X] [X] [X] [X] [X] [X] [X]

1.1 MGD from AES Cedar

Maximum quantity of effluent disposed per day Bay Cogeneration Plant MGD

Method of effluent treatment: Neutralization, oil-water separation, clarification, aeration,

and chlorination

Effluent disposal: On Site [ ] Off Site [X]

Method of disposal Discharged to St. Johns River

Is effluent quality monitored: [X] Yes [ ] No If treatment off site, name of

treatment facility NA

Location of off site treatment facility \_\_\_\_\_

Is water reused: [ ] Yes [ ] No If yes, what method: \_\_\_\_\_

#### 10.7.2 Jacksonville Bio-Environmental Services Division Construction Noise Permit Application

The Jacksonville Environmental Protection Board's Noise Pollution Control Rule 4.0 (May 11, 1987, Revision 5) states that most construction activities between the hours of 10:00 p.m. and 7:00 a.m. are not allowed unless specifically permitted by the City of Jacksonville. During the construction phase of the proposed project, it may become necessary to conduct some construction activities during the above nighttime hours. Therefore, approval for such activities is requested.

No permit application form is included in this section because the Jacksonville Bio-Environmental Services Division (BESD) noise permit program has never been implemented (personal communication between Steven M. Day of Black & Veatch and James O. Sewell of BESD on September 22, 1988).

#### 10.8 CFB BOILER BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

The 1977 Clean Air Act Amendments establish revised conditions for the approval of preconstruction permit applications under the PSD program. One of these requirements is that the best available control technology (BACT) be installed for all pollutants regulated under the Act. Under the revised Act, BACT determinations must be made on a case-by-case basis considering technical, economic, energy, and environmental impacts for various BACT alternatives. To bring consistency to the BACT process, the EPA has authorized development of guidance documents on the use of a "top-down" approach to BACT determinations.\*

The first step in a top-down BACT analysis is to determine, for each applicable pollutant, the most stringent control alternative available for a similar source or source category. If it can be shown that this level of control is infeasible on the basis of technical, economic, energy, or environmental impacts for the source in question, then the next most stringent

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\*Reference US EPA memorandum from J. C. Potter (Assistant Administrator for Air and Radiation) to Regional Administrators dated December 1, 1987.

level of control is identified and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any technical, economic, energy, or environmental consideration.

Subsection 3.4.1 determined that nitrogen oxides, carbon monoxide, lead, and applicable noncriteria pollutants must be analyzed in a BACT analysis. This appendix supplies the detailed BACT analysis for the Cedar Bay Cogeneration Plant for these applicable pollutants. A summary of this analysis is presented in Subsection 3.4.3.

#### 10.8:1 Basis of Analysis

Certain assumptions are made to permit the evaluation of BACT alternatives. To the maximum extent possible, these assumptions are updated as detailed design of the plant progresses. The following is a summary of some directly pertinent requirements and assumptions on which this BACT evaluation is based.

- Federal and state ambient air quality standards, emission limitations, significant deterioration increments, solid waste standards, and the requirements of other applicable regulations will be met.
- Federal New Source Performance Standards (NSPS) establish limiting criteria for pollutant emissions from the Cedar Bay Cogeneration Plant.
- The operating reliability of the air quality control system (AQCS) will not limit the generating capacity of the Cedar Bay Cogeneration Plant.
- The Cedar Bay Cogeneration Plant will generate 2,300,000 lb/h of steam at the maximum design conditions. The largest commercial CFB boiler produces 925,000 lb/h of steam. There are numerous pulverized coal (PC) fired boilers operating that are larger than 2,300,000 lb/h of steam. Consequently, this BACT analysis will consider either three CFB boilers (each providing 33 percent of the total capacity), or a single full-capacity PC boiler.



- The BACT analysis is based on the economic evaluation criteria and the coal quality data listed in Tables 10.8-1 and 10.8-2, respectively.

TABLE 10.8-1. ECONOMIC EVALUATION CRITERIA

<u>Item</u>	<u>Value</u>
Fuel Burn Rate	3,189 MBtu/h
Initial Operation	July 1992
Economic Recovery Period	20 Years
Contingency Cost Factor	10 percent
Escalation Rate	4 percent
Levelized Fixed Charge Rate*	15.4 percent
Present Worth Discount Rate	12 percent
Levelization Factor**	1.29
Indirects Cost Factor	16 percent
Allowance For Funds Used During Construction	12 percent
Capacity Factor	100 percent
1988 Limestone Cost	12 \$/ton
1988 Labor Cost	48,500 \$/man-year
1988 Energy Cost	70 mills/kWh
1988 Waste Disposal Cost	19 \$/ton

\*Calculated based on the economic recovery period, cost of money, and margins for insurance and taxes.

\*\*Calculated based on the economic recovery period, escalation rate, and present worth discount rate.

TABLE 10.8-2. DESIGN FUEL QUALITY ANALYSIS

<u>Ultimate Analysis</u>	<u>Typical percent</u>
Carbon	63.60
Hydrogen	4.40
Sulfur	3.30*
Moisture	7.20
Nitrogen	1.30
Chlorine	0.03
Oxygen	5.07
Ash	16.30
 Higher Heating Value	 11,000 Btu/lb

\*For short-term air quality modeling, design sulfur content is 1.70 percent for calculating annual SO<sub>2</sub> emissions.

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## 10.8.2 Cogeneration Plant NO<sub>x</sub> and CO Emissions Control

The objective of this analysis is to determine BACT for nitrogen oxides (NO<sub>x</sub>) and carbon monoxide (CO) emissions. Due to the mutually dependent formation characteristics of NO<sub>x</sub> and CO, it is necessary to consider BACT concurrently for these emissions.

### 10.8.2.1 Additional Requirements and Assumptions.

- Nitrogen oxide emissions are limited by New Source Performance Standards to 0.60 lb/MBtu of heat input to the boiler for bituminous coal. The coal listed in Table 10.8-2 is a bituminous coal.
- There are no coal fired boiler NSPS limiting the emission of CO.
- A review of information contained in the BACT/LAER Clearinghouse (1985 edition, and first and second supplements) indicates that the most stringent NO<sub>x</sub> emission limit issued to date is 0.039 lb/MBtu for a proposed project located in California. The installation will use a CFB boiler with a selective noncatalytic NO<sub>x</sub> reduction (SNCR) system. There are several other California CFB boiler permits that require the use of SNCR systems to meet NO<sub>x</sub> emission requirements. However, only two of these boilers are operating (the Cogeneration National and Corn Products projects located in California; both plants are currently in startup).
- The most stringent CO emission limit issued to date is a requirement of 0.014 lb/MBtu for a pulverized coal fired boiler project operating in Florida.

10.8.2.2 Formation Characteristics. Nitrogen oxides are formed by the oxidation of nitrogen contained in the fuel (fuel NO<sub>x</sub>) and in the combustion air (thermal NO<sub>x</sub>). Nitrogen oxide emissions are limited by lowering combustion temperatures, minimizing excess combustion air, and staging combustion. Carbon monoxide emissions are formed by incomplete combustion of coal. Increasing combustion temperatures, increasing excess air, and better fuel/air mixing during combustion minimize CO emissions. Therefore, limiting NO<sub>x</sub> emissions by lowering combustion temperatures and excess combustion air are counterproductive relative to CO emissions. Because NO<sub>x</sub> is the dominant pollutant in terms of total impact, this BACT analysis establishes BACT for CO based on BACT for NO<sub>x</sub>.

10.8.2.3 Emissions Control Alternatives. Nitrogen oxides and CO emission controls are divided into two categories: in-furnace formation control and post-combustion emission reduction. In-furnace combustion control processes reduce the quantity of NO<sub>x</sub> and CO formed during the combustion process. Post-combustion NO<sub>x</sub> controls reduce a portion of the NO<sub>x</sub> exiting the boiler to nitrogen. Post-combustion CO emission controls oxidize a portion of these pollutants to carbon dioxide and water.

#### In-Furnace Combustion Control

The commercial installation of CFB boilers over the last several years represents an advance in the control of NO<sub>x</sub> emissions from coal fired boilers.

In a CFB boiler, low combustion temperatures coupled with staged combustion effectively limit the formation of NO<sub>x</sub>. Low combustion temperatures primarily limit the formation of thermal NO<sub>x</sub>, and staged combustion (creating a reducing atmosphere in the lower portion of the boiler) inhibits the formation of fuel NO<sub>x</sub>.

CFB boilers are a relatively new coal combustion technology. Due to the lack of long-term CFB boiler NO<sub>x</sub> and CO emission performance data, it is difficult to predict reliable, day-to-day emission limits. However, a CFB boiler will be able to achieve a NO<sub>x</sub> emission rate of 0.36 lb/MBtu (40 percent below NSPS requirements) on a 30-day rolling average basis when burning the coal listed in Table 10.8-2. A CFB boiler could have initial NO<sub>x</sub> emissions lower than 0.36 lb/MBtu. However, because of uncertainties regarding long-term boiler performance, these lower initial levels cannot be guaranteed over the life of the plant.

A survey of other facilities and boiler manufacturers indicates that a CFB boiler should be capable of meeting a CO emission rate of 0.19 lb/MBtu while meeting previously discussed NO<sub>x</sub> and SO<sub>2</sub> emission requirements.

#### Post-Combustion Emission Controls

Post-combustion NO<sub>x</sub> control processes are based on the reaction of ammonia or urea with conversion of NO<sub>x</sub> to form nitrogen and water. Selective noncatalytic reduction and selective catalytic reduction (SCR) NO<sub>x</sub> reduction technologies are the only technologies adequately demonstrated to

be considered for installation on CFB boilers. While there is limited experience with these two NO<sub>x</sub> control processes on pulverized coal fired boilers in Europe and Japan, oil and natural gas fired boilers account for the majority of post-combustion NO<sub>x</sub> control system experience.

In actual operations, both post-combustion NO<sub>x</sub> control processes experience common problems. These problems include equipment fouling, poor control and distribution of the ammonia or urea injected, limited equipment service life, and ammonia slip (unreacted ammonia that is subsequently released to the environment). This, combined with the limited amount of experience downstream of a coal fired CFB boiler, results in considerable uncertainty associated with the long-term reliability of these systems for coal fired applications. Despite lack of applicable experience and technical problems, a description and technical assessment of these two alternatives follow and are included for thoroughness of analysis.

Selective Noncatalytic Reduction. Selective noncatalytic reduction is a post-combustion method for controlling NO<sub>x</sub> emissions. The process selectively reduces NO<sub>x</sub> by reaction with ammonia or urea without the use of a catalyst bed. A SNCR system could potentially reduce NO<sub>x</sub> emissions generated by a coal fired CFB boiler by 40 to 60 percent.

The CFB boiler bed temperature required for optimum SO<sub>2</sub> removal is about 1,560 F. This low bed temperature in a CFB boiler helps prevent NO<sub>x</sub> formation, but is outside of the optimum performance range for SNCR operation. The optimum temperature range for injection of ammonia or urea is 1,600 to 1,900 F, and the efficiency of the SNCR system falls off rapidly outside this temperature range. Operation at temperatures above this range can actually increase NO<sub>x</sub> emissions. Localized injection of hydrogen or other additives can extend this temperature window below the 1,600 F criterion.

A problem encountered with pilot SNCR systems installed on coal fired boilers is the formation of ammonium bisulfate salts in low temperature zones. These salts are produced at low temperatures when unreacted ammonia or urea reacts with sulfur trioxide in the flue gas. These salts form

tenacious deposits on the cold side of the air heater, significantly increasing pressure drops across the air heater. Ammonium bisulfate deposits also have a detrimental effect on fabric filter operation. Consequently, boilers with SNCR must include equipment for frequent washing of the air heater and processing of the resulting wastes.

Ammonia or urea must be uniformly distributed over the entire flue gas flow path at the appropriate flue gas temperature necessary to ensure completion of the SNCR chemical reaction. Failure to achieve uniform distribution of the additive could lead to inadequate  $\text{NO}_x$  removal rates and increased emission of unreacted ammonia.

One coal fired cyclone boiler in Germany was recently retrofitted with a SNCR system. The system was retrofitted as part of a demonstration program to evaluate the SNCR technology. The design of this boiler permitted ammonia injection into a region where flue gas temperatures ranged from 1,800 F to 1,900 F. Although  $\text{NO}_x$  removal performance has been acceptable at normal boiler loads, ammonia slip problems have been encountered due to reduced flue gas temperatures at lower loads.

In addition to the lack of commercial coal combustion experience, ammonia slip, and ammonium bisulfate deposit formation, it is not possible to determine the effects which CFB boiler in-bed desulfurization might have on the performance of a SNCR system. The presence of  $\text{SO}_2$  removal reaction products and unused desulfurization additive could potentially produce undesirable effects.

Selective Catalytic Reduction. Selective catalytic reduction is a post-combustion method for control of  $\text{NO}_x$  emissions which is being developed by a number of companies, principally in Japan and Europe.

The SCR process combines vaporized ammonia with  $\text{NO}_x$  in the presence of a catalyst to form nitrogen and water. The SCR process can achieve between 80 and 90 percent reduction of  $\text{NO}_x$ . The vaporized ammonia is injected into the exhaust gases prior to passage through a catalyst bed. The optimum flue gas temperature range for SCR operation is approximately 700 to 850 F. The SCR catalyst is housed in a reactor vessel which is separate from the boiler. Therefore, an economizer bypass may be required to maintain the



reactor temperature during low load operation. This would reduce boiler efficiency at lower loads.

The SCR NO<sub>x</sub> control technology was first developed for petroleum fueled combustion processes. Stricter NO<sub>x</sub> emission requirements, first in Japan, and then in Europe, encouraged development of the SCR technology for oil and gas fired boilers. More recently, significant developmental work has been done to improve this process for use on coal fired boilers in Japan and Europe. As of mid-1986, there were 22 coal fired utility boilers in Japan, either in operation or under construction, which have SCR NO<sub>x</sub> control systems. The first SCR system on a coal fired boiler went into operation in 1979. Five full-scale SCR systems on coal fired boilers are currently operating in the Federal Republic of Germany, and two in Austria.

Domestic experience with SCR is limited to natural gas and oil fired units. Pilot scale testing was conducted several years ago at the EPRI Integrated Environmental Control Pilot Plant located at the Arapahoe Generating Station in Colorado. These tests were performed using a 5,000 scfm flue gas slipstream from the Arapahoe station's pulverized coal fired boiler. To date, no SCR systems are installed for use on coal fired CFB boilers.

The SCR process also experiences many of the same problems encountered with the SNCR process. Ammonia injection control systems are continuing to be refined to achieve the desired control accuracy. Ammonia slip continues to be a significant problem and is the focus of ongoing research efforts.

Coal fired SCR systems in Europe and Japan have experienced significant problems with plugging and poisoning of the catalyst by fly ash. In addition, SCR systems in coal fired applications have experienced erosion of the catalyst. Research efforts aimed at solving these problems focus on catalyst configurations and the velocity of the flue gas within the catalytic reactor. The presence of calcined, unreacted limestone and desulfurization reaction products from a CFB boiler could further complicate these problems. At best, maintenance costs would increase significantly.

Carbon Monoxide Emissions Reduction Systems. Lower CO emissions are possible if combustion temperatures are increased. However, SO<sub>2</sub> removal

efficiency would be reduced and NO<sub>x</sub> formation would increase. Therefore, consistent with the approach of evaluating BACT for CO emissions based on BACT with NO<sub>x</sub>, increasing combustion temperatures to limit CO emissions is not an option for CO control. Tests on fluidized bed boilers have indicated that additive molar ratios would increase by at least 1.5 for the increased temperature. This results in an incremental CO emission reduction cost of \$4,200 per incremental ton of CO emission avoided due to increased limestone use.

A catalytic CO emissions reduction method is available for use on the exhaust from combustion turbines and petroleum refining operations. The process oxidizes up to 90 percent of the CO, resulting in the emission of carbon dioxide and water. The process is a straight catalytic oxidation/reduction reaction requiring no additives. However, the platinum coated catalyst is extremely expensive.

This process has never been applied to a coal fired power plant. The catalytic reaction is effective at a temperature of approximately 700 F. In PC and CFB boilers, a temperature of 700 F is available just upstream of the air heater. However, because of the potential for erosion and pluggage of the platinum catalyst by abrasive combustion products, this process is unsuited to coal fired applications, and is, therefore, not considered technically feasible for the Cedar Bay Cogeneration Plant.

10.8.2.4 Economic Evaluation of Viable Alternatives. Based on the previous discussion, the following will be the NO<sub>x</sub> reduction alternatives evaluated consistent with a top-down approach.

- (1) A SCR system designed for 90 percent NO<sub>x</sub> reduction.
- (2) A SNCR system designed for 60 percent NO<sub>x</sub> reduction.
- (3) CFB boiler designed to limit NO<sub>x</sub> emissions to 0.36 lb/MBtu.

Table 10.8-3 lists estimated NO<sub>x</sub> and CO emissions for the various control alternatives.

Table 10.8-4 lists estimated capital costs for NO<sub>x</sub> emission reduction systems for the Cedar Bay Cogeneration Plant. No costs are assessed for the alternatives without post-combustion NO<sub>x</sub> reduction systems.

TABLE 10.8-3. NITROGEN OXIDES AND CARBON MONOXIDE EMISSIONS

<u>Alternative</u>	<u>Uncontrolled Emission</u> lb/MBtu	<u>Removal Rate</u> percent	<u>Emission Rate</u> lb/MBtu	<u>Annual Emission</u> t/y
<b>Nitrogen Oxides Emissions</b>				
CFB Boiler/SCR System	0.36	90	0.036	503
CFB Boiler/SNCR	0.36	60	0.14	2,011
CFB Boiler	0.36	NA	0.36	5,028
<b>Carbon Monoxide Emissions</b>				
CFB Boiler	0.19	NA	0.19	2,654

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TABLE 10.8-4. NITROGEN OXIDES REDUCTION SYSTEMS CAPITAL COSTS

	90 Percent Reduction <u>SCR System</u> \$1,000	60 Percent Reduction <u>SNCR System</u> \$1,000
SNCR System	0	2,940
SCR Reactor System	9,170	0
SCR Ammonia Storage and Injection	1,050	0
Incremental Air Heater	1,250	0
Incremental ID Fan and Ductwork	1,540	0
Differential Balance-of-Plant	<u>900</u>	<u>680</u>
1988 Capital Cost	13,910	3,620
Contingency	<u>1,390</u>	<u>360</u>
1988 Direct Capital Cost	15,300	3,980
Escalation	<u>1,580</u>	<u>410</u>
Direct Capital Cost*	16,880	4,390
Indirects	2,700	700
Interest During Construction	<u>4,570</u>	<u>1,190</u>
1992 Total Capital Cost	24,150	6,280

\*Assumed to be at the midpoint of construction.

The table shows all capital costs for a complete post-combustion NO<sub>x</sub> control system. For the selective catalytic reduction process, the capital costs include the catalytic reactor, ammonia additive injection system, balance-of-plant costs, and the incremental air heater and ID fan. Economic criteria used to develop capital costs are listed in Table 10.8-1.

Levelized annual operating costs are presented in Table 10.8-5. Operating costs include operating personnel, maintenance, ammonia additive, and steam and electric energy. For the SCR alternative, operation and maintenance costs include replacement and disposal of spent catalysts. The most significant cost for both the SNCR and the SCR NO<sub>x</sub> control system alternatives is for ammonia additive. For the SCR system, ammonia additive and catalyst replacements account for almost 85 percent of the levelized annual costs. This is due to the relatively short service life (two to three year) of the expensive vanadium pentoxide catalyst for coal fired applications. Although the intent in recent SCR research and development is to ultimately recycle the spent catalyst, no recycle facilities are currently in operation. Consequently, the catalyst must be disposed of as a hazardous waste. The potential costs associated with the handling and disposal of the spent catalyst, as a hazardous waste, have not been included in the BACT economic analysis. This results in a more conservative estimate of costs associated with the use of an SCR system.

Installation of an SCR system designed to reduce 90 percent of the NO<sub>x</sub> exiting the boiler would add approximately \$24 million to the capital cost of the project for installation downstream of a CFB boiler. Addition of a SCR NO<sub>x</sub> control system increases levelized annual costs for the project by \$14 million.

A SNCR system designed to reduce 60 percent of the inlet NO<sub>x</sub> would add approximately \$6.3 million to the capital cost of the project. The total levelized annual cost for a SNCR system would be approximately \$3.8 million.

10.8.2.5 Conclusions. Installation of a 90 percent efficient SCR system on a CFB boiler as compared to a 60 percent efficient SNCR system results in an incremental reduction cost of \$6,800 per ton of NO<sub>x</sub> emission avoided.

TABLE 10.8-5. NITROGEN OXIDES REDUCTION SYSTEMS LEVELIZED ANNUAL COSTS

	90 Percent Reduction <u>SCR System</u> \$1,000	60 Percent Reduction <u>SNCR System</u> \$1,000	2
<b>Levelized Annual Operating Costs</b>			
Operating personnel	110	190	
Maintenance	300	600	
Additive and catalyst	9,100	850	2
Energy	1,030	1,500	
Catalyst disposal	<u>90</u>	<u>0</u>	
1992 annual operating costs	10,630	3,140	2
<b>Levelized Total Annual Costs</b>			
Fixed charges on capital	3,720	970	
Annual operating costs	<u>10,630</u>	<u>3,140</u>	2
1992 total annual costs	14,350	4,110	

The SNCR system has an incremental reduction cost of \$1,400 per ton as compared to a CFB boiler designed to achieve a NO<sub>x</sub> emission of 0.36 lb/MBtu. Addition of a SNCR system would add \$6.3 million to the capital cost of a CFB boiler plant.

Therefore, based on the limited experience with post-combustion NO<sub>x</sub> reduction systems installed on coal fired boilers, the additional energy use, and the economies associated with the incremental NO<sub>x</sub> removal, BACT for NO<sub>x</sub> and CO emissions from the Cedar Bay Cogeneration Plant is a CFB boiler with combustion controls without post-combustion emission controls.

The consideration of environmental factors also supports the selection of combustion controls as BACT. Use of a SCR or a SNCR system will result in the emission of various amine compounds formed by the unreacted ammonia exiting these NO<sub>x</sub> reduction systems. This represents a potential adverse human health effect, since many amine compounds are known or suspected carcinogens. Although ammonia emissions are not regulated nationally, at least one district in California recently set a limit of 10 ppm. Unreacted ammonia emissions would be approximately 10 ppm from a SCR system, and 30 ppm from a SNCR system.

### 10.8.3 Lead and Non-Criteria Pollutant Emissions Control

An additional benefit of flue gas desulfurization and particulate removal air quality control efforts is the removal of other pollutants from the flue gas stream. Removal occurs as gas temperatures decrease as a result of condensation of gaseous emissions onto fly ash particles and subsequent removal of particulates in the fabric filter.

A BACT review is required for all pollutants which exceed PSD significance levels. Table 10.8-6 lists estimated emissions and PSD significance levels for lead and applicable non-criteria PSD pollutants.

Coal does not contain asbestos or vinyl chloride, and none is formed during combustion. Therefore, asbestos and vinyl chloride emissions will be less than PSD significance levels.

Hydrogen sulfide and reduced sulfur compounds form in a reducing atmosphere. Combustion in a CFB boiler occurs in an oxidizing atmosphere.

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TABLE 10.8-6. LEAD AND OTHER NON-CRITERIA POLLUTANT EMISSION\*

<u>Trace Element/Compound</u>	<u>Uncontrolled Emission</u> lb/MBtu	<u>Estimated Removal Efficiency</u> percent	<u>Estimated Emission</u> lb/MBtu	<u>Estimated Emission</u> t/yr	<u>PSD Significance Level</u> t/yr
Lead	0.0078	10.0	0.0070	91	0.10
Fluorides	0.17	50.0	0.086	1,122	3
Mercury	0.00029	10.0	0.00026	3.4	0.10
Beryllium	10.0023	95.0	0.00011	1.5	0.0004
Sulfuric acid mist	0.047	50.0	0.024	308	7

\*Emissions are total for a three boiler plant at 93 percent capacity factor.

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Therefore, emissions of these compounds will be less than PSD significance levels.

Hydrogen sulfide and reduced sulfur compounds form in a reducing atmosphere. Combustion in a CFB boiler occurs in an oxidizing atmosphere. Therefore, emissions of these compounds will be less than PSD significance levels.

Estimated emissions of lead, fluorine (except the wet limestone scrubber AQCS), mercury, beryllium, and sulfuric acid mist exceed PSD significance levels.

Coal trace element quantities are difficult to obtain from coal suppliers. Even though a specific coal has been selected, specific trace element data are not available. Therefore, coal trace element quantities are calculated from values contained in Trace Elements in Coal (Vlado Valkovic, CRC Press, 1983). If the ranges of coal trace quantities in this reference are examined, it becomes evident that there is a large amount of uncertainty in estimating uncontrolled emissions. Trace element emission estimates based upon this published information are considered conservative since high range values are typically used in calculations.

There is also a lack of data regarding removal efficiency of coal trace elements from fluidized bed boiler flue gas. However, estimates can be calculated on the basis of limited test results from other types of coal combustors and control alternatives. Use of these data compounds the uncertainty previously mentioned, but is the best information available to predict emissions.

During combustion, lead forms molten volatile free metal, fluorine volatilizes to hydrogen fluoride, and mercury and beryllium form volatilized metal. As the flue gas cools, lead, fluorine, and beryllium condense onto fly ash and are collected in the fabric filter. Mercury does not tend to condense as readily.

Approximately 1 percent of sulfur dioxide converts to sulfur trioxide ( $SO_3$ ) in pulverized coal boilers. Sulfur trioxide can combine with moisture in the flue gas to form sulfuric acid mist ( $H_2SO_4$ ). Removal of sulfuric acid mist with sulfur dioxide can be expected. Tests on a PC boiler with a wet limestone scrubber AQCS indicate that 50 percent removal can be

expected. Lime spray dryers and CFB boilers are expected to perform at similar levels.

Since removal of these pollutants occurs as part of flue gas desulfurization and particulate removal operations, BACT regarding lead, fluorine, mercury, beryllium, and sulfuric acid mist emissions is the operation of the plant in accordance with SO<sub>2</sub> and particulate removal permit requirements.

#### 10.8.4 Cogeneration Plant Emissions Control Summary

The following is a summary of BACT for the Cedar Bay Cogeneration Plant and the associated emission rates.

- Nitrogen Oxides and Carbon Monoxide--A CFB boiler with combustion controls designed to meet 0.36 lb NO<sub>x</sub>/MBtu, and 0.19 lb CO/MBtu emission limits.
- Other Criteria and Non-Criteria Pollutants--Control consistent with flue gas desulfurization and particulate removal systems.

#### 10.9 KRAFT RECOVERY BOILER BEST AVAILABLE CONTROL TECHNOLOGY ANALYSIS

The 1977 Clean Air Act Amendments establish revised conditions for the approval of preconstruction permit applications under the PSD program. One of these requirements is that the best available control technology (BACT) be installed for all pollutants regulated under the Act. Under the revised Act, BACT determinations must be made on a case-by-case basis considering technical, economic, energy, and environmental impacts for various BACT alternatives. To bring consistency to the BACT process, the EPA has authorized development of guidance documents on the use of a "top-down" approach to BACT determinations.\*

The first step in a top-down BACT analysis is to determine, for each applicable pollutant, the most stringent control alternative available for a similar source or source category. If it can be shown that this level of

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\*Reference US EPA memorandum from J. C. Potter (Assistant Administrator for Air and Radiation) to Regional Administrators dated December 1, 1987.

control is infeasible on the basis of technical, economic, energy, or environmental impacts for the source in question, then the next most stringent level of control is identified and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any technical, economic, energy or environmental consideration.

Subsection 3.4.1 determined that nitrogen oxides, carbon monoxide, lead, and applicable non-criteria pollutants must be analyzed in a BACT analysis. This analysis supports the selection of BACT for the Cedar Bay kraft recovery boiler (KRB) for these applicable pollutants. Emissions of these pollutants from the smelt dissolving tank and the multiple effect evaporator are negligible and therefore, will not be evaluated as part of this BACT analysis.

#### 10.9.1 Basis of Analysis

Certain assumptions are made to permit the evaluation of BACT alternatives. To the maximum extent possible, these assumptions are updated as detailed design of the plant progresses. The following is a summary of some directly pertinent requirements and assumptions on which this BACT evaluation is based.

- Federal and state ambient air quality standards, emission limitations, significant deterioration increments, and the requirements of other applicable regulations will be met.
- Federal NSPS do not set emission limits for NO<sub>x</sub> or CO emissions from kraft recovery boilers.
- Black liquor solids do not contain significant quantities of lead, beryllium, fluoride, or mercury.
- The BACT analysis is based on the black liquor analysis listed in Table 10.9-1.
- Due to the mutually dependent formation characteristics of NO<sub>x</sub> and CO emissions, it is not possible to consider BACT for these emissions independently. Nitrogen oxides are formed by the oxidation of nitrogen contained in the fuel (fuel NO<sub>x</sub>) and in the combustion air (thermal NO<sub>x</sub>). Nitrogen oxide emissions are limited by lowering combustion temperatures, minimizing excess

TABLE 10.9-1. DESIGN BLACK LIQUOR ANALYSIS

<u>Ultimate Analysis</u>	<u>Typical percent</u>
Carbon	25.99
Hydrogen	2.72
Sulfur	2.60
Moisture	30.00
Nitrogen	0.04
Chlorine	0.42
Oxygen	23.60
Sodium	14.15
Potassium	0.48
Higher Heating Value	4,522 Btu/lb

combustion air and staging combustion. Carbon monoxide emissions are formed by incomplete combustion of the fuel. Increasing combustion temperatures, increasing excess air, and better fuel/air mixing during combustion minimize CO emissions. Therefore, limiting NO<sub>x</sub> emissions by lowering combustion temperatures and excess combustion air are counterproductive relative to CO emissions. For the purposes of this analysis BACT for CO will be based on BACT for NO<sub>x</sub>.

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#### 10.9.2 Nitrogen Oxides Emissions Control

A review of information contained in the BACT/LAER Clearinghouse documents indicates that the lowest NO<sub>x</sub> emission requirement is 0.073 lb/MBtu (approximately 39 ppmvd) for a proposed KRB located in Texas. In discussions with EPA Region VI, it was found that this plant has never been built and that the permit has expired. The minimum NO<sub>x</sub> emission limit that is being met through actual operation is approximately 140 ppmvd at a KRB located in North Charleston, South Carolina.

In general, kraft recovery boilers have relatively low NO<sub>x</sub> emissions. Low combustion temperatures and staged combustion (creating a reducing atmosphere in the lower portion of the boiler) inhibit the formation of NO<sub>x</sub>. The combustion temperature above the primary air injection is estimated to be approximately 1,800 F. This relatively low combustion temperature is maintained by adjusting the furnace bed height and decreasing the primary air temperature.

KRB manufacturers are willing to guarantee various maximum NO<sub>x</sub> emission rates. Emission guarantees vary, not only because of manufacturer differences, but also because of different black liquor fuel qualities. To maintain flexibility in procurement of equipment for the Cedar Bay KRB, it is necessary to propose the lowest NO<sub>x</sub> emission guarantee common to all potential manufacturers, plus a small allowance for performance deterioration. Manufacturers indicate that on the basis of the design black liquor fuel analysis listed in Table 10.9-1 they can reliably meet a NO<sub>x</sub> emission requirement of 180 ppmvd with appropriate combustion controls.

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In addition to combustion controls, NO<sub>x</sub> emissions might be controlled by a postcombustion NO<sub>x</sub> reduction system. Review of BACT/LAER Clearing-house documents did not indicate any kraft recovery boilers using NO<sub>x</sub> reduction systems. Consequently, there is no operating experience with NO<sub>x</sub> reduction systems operating downstream of a kraft recovery boiler. However, to comply with the requirements for a "top-down" BACT analysis, NO<sub>x</sub> reduction systems will be considered for use downstream of the KRB.

Performance of a selective catalytic reduction system (described in Subsection 10.8.3.3) downstream of a kraft recovery boiler is difficult to predict. This NO<sub>x</sub> reduction system relies heavily on a vanadium pentoxide catalyst to ensure a complete efficient reaction of the ammonia with the NO<sub>x</sub>. The presence of sodium compounds is likely to cause a multitude of catalyst fouling (plugging) problems. In addition, the formation of ammonia bisulfate would compound the uncertainty associated with this NO<sub>x</sub> reduction system. Therefore, it appears that this NO<sub>x</sub> reduction system is poorly suited for installation on a KRB and will not be considered further.

The SNCR system (described in Subsection 10.8.3.3) does not rely on the use of a catalyst, but relies mainly on the chemical/ temperature reaction between ammonia and NO<sub>x</sub>. A large amount of uncertainty is associated with the use of this NO<sub>x</sub> reduction technology downstream of a KRB, but conceptually it is likely to be a more effective NO<sub>x</sub> control technology than a SCR system. Ammonia bisulfate deposits downstream of the boiler are still likely to present operational/maintenance problems. In addition, it is not possible to determine the catalytic effects that the presence of sodium compounds might have on the reaction efficiency of the chemical reduction process.

Ammonia is also fairly soluble and is likely to be absorbed by water in the bottom of the wet bottom precipitator. Blowdown from the wet bottom precipitator will be returned to the pulping process loop. Therefore, absorbed ammonia could ultimately contaminate the pulp product with an ammonia smell. However, despite the uncertainties, for the purposes of this evaluation it will be assumed that a SNCR system would be adapted for this application. A SNCR system designed for 60 percent NO<sub>x</sub> reduction would result in a NO<sub>x</sub> emission of approximately 72 ppmvd.

Table 10.9-1b lists the estimated capital and levelized annual costs for a SNCR system located downstream of a KRB. A SNCR system designed for 60 percent NO<sub>x</sub> reduction would add approximately \$3.5 million to the capital cost and \$2.0 million to the annual cost of the kraft recovery boiler. Capital costs include costs for additive storage, ammonia additive injection system, and balance-of-plant costs. Annual costs include fixed charges on capital investment, operating personnel, ammonia additive, maintenance, and energy. Annual costs do not account for any costs associated with pulp process loop impacts from ammonia contamination.

A levelized annual cost of \$2.0 million results in an incremental NO<sub>x</sub> emissions reduction cost of \$2,000 per ton of NO<sub>x</sub> reduced. The SNCR system would consume electrical energy equivalent to approximately 1 percent of the KRB fuel consumption rate.

The consideration of environmental factors also supports the selection of combustion controls as BACT. Use of a SNCR system will result in the emission of various amine compounds formed by the unreacted ammonia exiting these NO<sub>x</sub> reduction systems. This represents a potential adverse human health effect, since many amine compounds are known or suspected carcinogens. As previously discussed in Subsection 10.8.3, although ammonia emissions are not regulated nationally, at least one district in California recently set a limit of 10 ppm. Unreacted ammonia emissions from a SNCR system would be between 30 and 40 ppm.

Therefore, based on economics, energy, and environmental considerations, a NO<sub>x</sub> emission limit of 180 ppmvd corrected to 8 percent oxygen is proposed as BACT for the Cedar Bay KRB.

### 10.9.3 Carbon Monoxide Emissions Control

A review of information contained in the BACT/LAER Clearinghouse documents indicates that the lowest CO emission requirement is 0.09 lb/MBtu (approximately 78 ppmvd) for a proposed KRB located in Texas. In discussions with EPA Region VI, it was found that this plant has never been built and that the permit has expired.

TABLE 10.9-1b. NITROGEN OXIDES REDUCTION SYSTEM CAPITAL AND ANNUAL COSTS

	<u>SNCR</u> \$1,000
<b>Capital Costs</b>	
NO <sub>x</sub> Reduction Equipment	1,730
Differential Balance-of-Plant	<u>400</u>
1988 Capital Cost	2,130
Contingency	<u>210</u>
1988 Direct Capital Cost	2,340
Escalation	<u>240</u>
Direct Capital Cost	2,580
Indirects	410
Interest During Construction	<u>550</u>
1992 Total Capital Cost	3,540
<b>Levelized Annual Operating Cost</b>	
Operating Personnel	210
Maintenance	350
Additive	330
Energy	<u>590</u>
1992 Annual Operating Cost	1,480
Fixed Charges on Capital	<u>550</u>
1992 Total Annual Cost	2,030

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Due to the pyrolytic nature of kraft recovery boiler combustion, carbon monoxide emissions are relatively high. Maintaining low combustion temperatures and staged combustion for NO<sub>x</sub> emissions control is counter-productive with regard to CO emissions. Therefore, by being consistent with the approach of evaluating BACT for CO emissions based on BACT for NO<sub>x</sub>, increasing combustion temperatures to limit CO emissions is not an option for CO control. Manufacturers predict that a properly designed KRB could consistently meet a CO emission limit of 400 ppmvd while maintaining previously mentioned SO<sub>2</sub> and NO<sub>x</sub> emission limits.

With no experimental or commercial operating experience downstream of KRB boilers, CO reduction technologies such as catalytic reduction are insufficiently developed to consider for use. Therefore, BACT for CO emissions from the KRB is proper boiler design and operation (consistent with meeting previously proposed NO<sub>x</sub> and SO<sub>2</sub> emission requirements) to meet a CO emission limit of 400 ppmvd corrected to 8 percent oxygen.

#### 10.9.4 KRB Emissions Control Summary

The following is a summary of BACT for the Cedar Bay kraft recovery boiler.

- Nitrogen Oxides--A KRB designed to meet a 180 ppmvd (corrected to 8 percent oxygen) NO<sub>x</sub> emission limit.
- Carbon Monoxide--A KRB designed to meet a 400 ppmvd (corrected to 8 percent oxygen) CO emission limit.

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10.10 SITE SUBSURFACE DATA

10.11 GROUND WATER QUALITY DATA

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10.12 SURFACE WATER QUALITY DATA

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10.10 SITE SUBSURFACE DATA



**LAW ENGINEERING**

GEOTECHNICAL ENVIRONMENTAL  
& CONSTRUCTION MATERIALS  
CONSULTANTS

June 16, 1978

St. Regis Paper Company  
P. O. Box 18020  
Jacksonville, Florida 32229

Attention: Mr. Cliff Mattox

Subject: Report of Subsurface Investigation  
Canal Road Pavement Design  
St. Regis Paper Co.  
Jacksonville, Florida  
Job No. J-3066

Gentlemen:

Law Engineering Testing Company has completed a subsurface investigation for the proposed paving program of the canal road within the St. Regis Paper Co. mill in Jacksonville, Florida. This investigation was made in accordance with our Proposal No. 78-837S, dated April 18, 1978 and your Construction/ Maintenance Agreement No. 4527-JK, dated April 24, 1978. This report briefly outlines the investigative procedures we employed along with documenting the data collected. Included in Part IV of this report are our recommendations for site preparation and pavement design for the canal road.

We appreciate the opportunity to be of continued service as your geotechnical consultant. If you have any questions regarding this report or if we may be of further service, please contact us.

Very truly yours,

LAW ENGINEERING TESTING COMPANY

Terrill V. Smith, E.I.  
Civil Engineer

Randy A. Knott, P.E.  
Senior Engineer  
Registered, Florida 20340

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PROJECT INFORMATION & STRUCTURAL CONDITIONS

As indicated on the Site Location Map and the Field Investigation Plan, both in the Appendix, the canal road extends westerly from the mill to the Broward River. The road is bounded on the north by the cooling towers and the settling pond and on the south by the lime waste area. The road turns (approximately 90°) at the Atlantic Coast Line Railroad spur and proceeds to the north adjacent to the spur. The roadway is approximately 700 feet in length prior to the turn and about 15 to 20 feet wide. We understand that the roadway was constructed of dredge soils obtained from the construction of the settling pond and other nearby ponds adjacent to Broward River.

Initial traffic conditions on the roadway consisted of light truck traffic. Present traffic conditions on the roadway, however, consist of 18 cubic yard capacity dump trucks and a 100 ton capacity rubber-tired crane. The crane is used to remove lime deposits from the settling pond and stockpile this material in the lime waste area. During this operation, water is dropped on the roadway resulting in inundated conditions which result in potholes and washouts. When the lime material has sufficiently dried out in the lime waste area, the crane is used to place the lime material into the dump trucks for removal. During the stockpiling and removing operations, considerable deterioration of the roadway has occurred.



The pavement design recommendations given in Part IV of this report will provide guidance in the paving of the road. The roadway at the turn will be widened and extended shortly, we have assumed not more than a 100 foot extension to the north for a traffic turn-around area.

PART II: FIELD AND LABORATORY INVESTIGATION

Field Investigation

To investigate the subsurface soil conditions along the roadway, 10 auger borings were made to depths ranging from 3 to 9 feet below the existing ground surface. The locations of the borings are indicated on the Field Investigation Plan in the Appendix. The borings were located by an engineer and field crew using tape measurements from the existing concrete block structure adjacent to the cooling towers. The borings were made on April 12, 27, and May 22, 1978.

The Auger Boring Records, in the Appendix, tabulate the results of the auger borings. Ground surface elevations at the boring locations have not been firmly established. Detailed descriptions of the drilling, sampling, and testing techniques used by our field personnel are given in the Appendix in the Field and Laboratory Test Procedures section.

In addition to the above investigative work, an engineer inspected the site to determine the general surface conditions along the roadway. This inspection was made on April 12, 1978.

Laboratory Investigation

Laboratory testing was performed on representative samples of the upper surface soils encountered in the auger

borings. The laboratory tests determined the bearing ratio of the tested soils when compacted according to the Modified Proctor maximum dry density and optimum moisture content. In addition, the Modified Proctor compaction characteristics and grain size distribution of the tested soils were determined. These tests were necessary in order to properly classify the soils and determine their compaction and strength characteristics for pavement design.

The laboratory results are indicated on the Bearing Ratio, Compaction, and Grain Size Distribution Test results in the Appendix. A brief description of the laboratory test procedures is given in the Appendix in the Field and Laboratory Test Procedures section.

PART III: SITE AND SUBSURFACE CONDITIONS

Site Conditions

From our site inspection, we noted that the roadway surface has deteriorated in some areas resulting in pot holes in the roadway. The majority of the roadway has been covered with approximately 6 to 12 inches of wood chips and tree bark. The crown along the centerline of the roadway is very low giving the appearance of a flat road resulting in minimal surface runoff. A slight vertical rise in the roadway, however, does exist at about the middle of the roadway. In areas where wood chips and tree bark have not been deposited upon the roadway surface, the surface soils were composed primarily of loose to firm grey fine sands.

Subsurface Conditions

General - A graphical representation of the subsurface conditions along the roadway is indicated on the Generalized Subsurface Profile in the Appendix. This profile and the soil conditions outlined below highlight the major subsurface stratification. For a detailed description of the soil conditions encountered, please refer to the Auger Boring Records in the Appendix. When reviewing these records and the soil profile, it should be understood that the soil conditions could vary between the boring locations.

Soils - As previously stated, the majority of the roadway is covered with wood chips and tree bark. Beneath this fill material, the upper surface soil layer which is approximately 3 to 4 feet thick is composed primarily of loose to firm grey slightly silty fine sands. The next soil layer encountered to the maximum boring depth of approximately 9 feet below the existing ground surface, was composed primarily of loose to firm grey to dark grey slightly silty to silty fine sands with gravel and cemented fine grained particles.

In auger boring A-7, we encountered a soft blue-grey sandy silt (lime waste) beneath the upper wood chips layer. The lime waste was encountered from approximately one foot to 5½ feet below the existing ground surface and underlain by a loose grey to dark grey silty fine sand. The approximate 4½ feet of lime waste appears to have been deposited in a depression on the roadway during the lime waste removal operations.

Groundwater - The groundwater level was recorded at all auger boring locations at the time of drilling, except at auger boring A-8. The levels as recorded are indicated on the Auger Boring Records in the Appendix. The groundwater level was generally encountered at a depth of approximately 4½ feet below the existing ground surface of the roadway. The groundwater level encountered during this investigation,

however, should be expected to vary according to seasonal climatic conditions and tidal fluctuations in the adjacent Broward River.

PART IV: RECOMMENDATIONS FOR PAVEMENT DESIGN  
AND SITE PREPARATION

General Evaluation

The following recommendations are based upon the previously presented project information and structural conditions along with the data obtained in this investigation. The field and laboratory test data have been compared with previous correlations of soil classification, bearing capacities, and settlements for soils similar to those at this site. If the structural information is incorrect, please contact us so that our recommendations can be reviewed. In addition, the discovery of any site and/or subsurface condition during construction which deviates from the data obtained in this investigation should also be reported to us for our evaluation.

In general, we consider the upper surface soils beneath the existing wood chips and tree bark layer suitable to support the roadway pavement structure. Site preparation will be required, however, in order to obtain uniform support and to minimize erosion and washouts of the roadway during and after construction.

Pavement Design

The pavement structure should consist of the following:

- (1) Asphalt Wearing Surface
- (2) Base Course

(3) Subbase Course or Prepared Subgrade

The asphalt wearing surface should be a Type S-1 asphalt concrete (AC) as defined in the Florida D.O.T. Standard Specifications for Road and Bridge Construction (1977). We recommend that the wearing surface be at least 3 inches in thickness. Placement and compaction of the asphalt wearing surface should be governed by the specifications within the above referenced manual.

We recommend that the base course consist of either (1) Florida limerock, (2) crushed stone or gravel, or (3) an approved alternative. The limerock should meet the specifications outlined in the previously stated manual. Crushed stone or gravel should be adequately graded and comply with the specifications pertaining to coarse aggregate as outlined in Section 901 of the Florida D.O.T. Standard Specifications for Road and Bridge Construction (1977). We recommend, however, that 100% of the crushed stone or gravel pass a 1½" square sieve and not more than 10% pass the No. 4 (4.74 mm square) sieve. The base course should be at least 8 inches thick.

Following placement of the base course, the base course surface should be "primed" with any of the following cut-back asphalt grades: RC-70, RC-250, MC-70, or MC-250. At least 0.2 gallons per square yard should be applied to the base course surface. Care should be taken to prevent over



priming the base course surface. Prior to asphalt placement, the prime coat should be fully set and cured.

The primed base course should be sanded if: (1) more than one day (24 hours) will elapse prior to laying the asphalt wearing surface and excess prime is not absorbed, or (2) construction equipment will operate over the unprotected primed base course. If sanding is required, approximately 0.15 cubic feet of sand per square yard of surface (i.e. about  $\frac{1}{4}$  inch of sand) should be spread over the primed base course. The sand surface coating should contain less than 10 percent fines (material passing the No. 200 sieve) and be composed of non-plastic, inorganic soil.

The specifications governing the placement of prime coats on pavement base course surfaces and sanding as outlined in Section 300 of the Florida D.O.T. Standard Specifications for Road and Bridge Construction (1977) should be followed.

It is our opinion that the majority of the existing upper surface soils beneath the surface wood chips and tree bark layer are suitable for use as the subbase course of the pavement structure, however, some preparation of these soils is required in order to obtain uniform support beneath the pavement base. Isolated areas of these soils are very silty, as indicated in auger boring A-7, and will require removal and backfilling with structural fill during the preparation of these soils.

The pavement surface may be sloped, either towards the settling pond or away from it or crowned in the center. The slope of the pavement surface should be approximately 3%, i.e. about three-eighths of an inch rise per foot of run. This slope should allow rapid runoff of water which drops on the roadway during removal of lime waste from the settling pond or during rainfall.

A drainage ditch should be provided, regardless of the slope direction of the pavement surface, between the roadway and the lime waste area. This ditch should be graded to drain toward an existing ditch at the southeast end of the roadway. The ditch should have the following minimum dimensions: (1) depth - 3 feet, (2) bottom width - one foot, (3) side slopes - minimum 2:1 (H to V) and (4) drainage slope - 0.2%. Periodic maintenance of this ditch will be required to keep it free flowing.

In addition to the ditch, the roadway should have side shoulders at least 3 feet wide. These non-paved shoulders should have the same slope or a slightly steeper slope than the pavement surface. The roadway embankments should have side slopes no steeper than 2:1 (H to V), however, slopes of 3:1 (H to V) or less should enable easier maintenance. In order to reduce washouts, bank erosion, and continual maintenance work, we recommend the placement of "jute" or similar

mesh or material covering over the roadway shoulder and embankment to minimize surface erosion. Concrete or soil cement filled bags could be used on the roadway embankment adjacent to the settling pond and drainage ditch.

#### Site Preparation

Initial site preparation of the roadway will include the removal of the surface wood chips and tree bark layer. Following this clearing operation, the roadway should be graded, if necessary, to the base course bottom elevation. Any surface soils removed should be stockpiled for use as backfill in any areas which may require further excavation and subsequent backfilling.

Following the clearing and grading operation, an engineer from our office should inspect the exposed soils. This inspection is recommended in order to verify and isolate any soft silty subgrade soils requiring further removal. Any areas excavated, as recommended by our engineer, should be backfilled with suitable soils from the stockpile. Suitability of stockpiled soils can be determined by our engineer during his inspection. If limited grading work is performed or the quantity of the stockpiled soils is insufficient, structural fill should be used in the excavated areas. Structural fill is defined as a non-plastic, inorganic, granular soil (relatively clean sand) containing less than 10 percent fines (material passing the No. 200 sieve).

Following any excavation and backfill work, the exposed surface soils should be proof-rolled with a 3 to 5 ton static at drum weight vibratory roller. The initial proof rolling operation should be performed with the vibratory action disengaged. Some pumping or strength loss of some of the exposed soils may be caused by engaging the vibratory action of the roller. Since the vibratory action enables deeper compaction, our engineer should witness the initial proof rolling operation in order to recommend areas of the roadway where the vibratory action should be engaged.

All exposed soils within the roadway, excluding those soils which are slightly cemented by dessicated lime, should be compacted to densities of at least 95% of the Modified Proctor maximum dry density (ASTM D-1557). Stockpiled soils or structural fill used to raise the roadway to grade should be compacted to similar densities, however, all soil (excluding the slightly cemented soil) within one foot of the base course bottom should be compacted to densities of at least 100 percent of the Modified Proctor maximum dry density. The compacted surface soils and structural fill should have a bearing ratio value of at least 20. Densities of at least 100 percent of the Modified Proctor, based on laboratory testing, should result in bearing ratio values of at least 20. Uncompacted fill lift thicknesses, when using the recommended roller, should not exceed 12 inches.

In-place field density tests should be performed in order to verify that the recommended densities are obtained. At least one density test should be made in each 200 feet of roadway in the exposed surface soils and any fill soils.

The base course may be placed in uncompacted lifts not exceeding 4 inches in thickness. If Florida limerock is used, densities of at least 98 percent of the Modified Proctor maximum dry density should be obtained. Density tests in the limerock base should be taken in every 150 feet of the roadway. If crushed stone or gravel is used, a minimum of 6 complete coverages of each lift with the recommended roller (no vibratory action) should be performed. After placement and compaction of the base course, the surface should be primed and sanded, if required, as previously outlined.

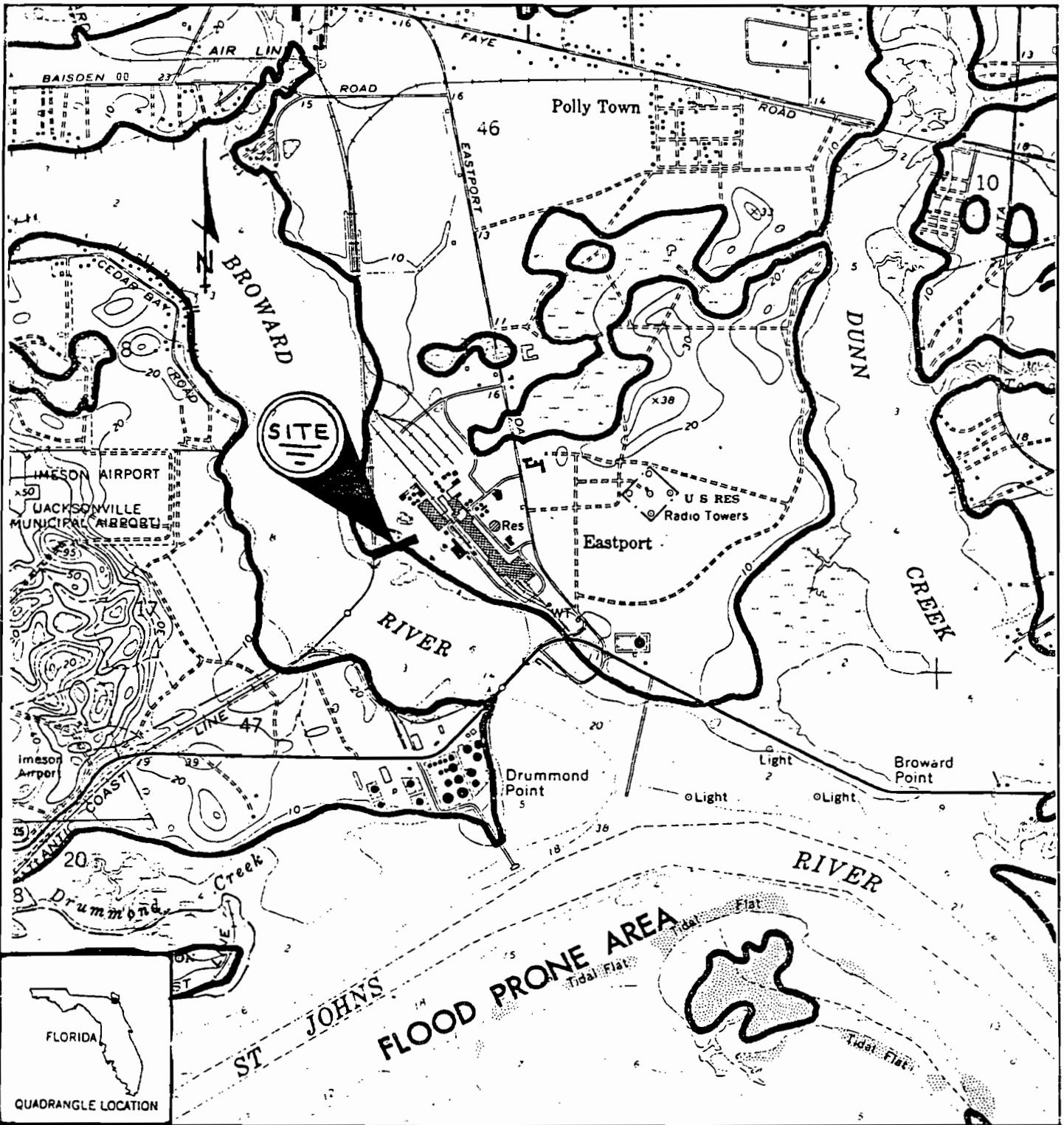
Prior to placement of the asphalt wearing surface, any sanded base course surface should be broomed of excess loose sand. Asphalt placement and compaction should be governed by Section 330 in the Florida D.O.T. Standard Specifications for Road and Bridge Construction (1977). Coring of the asphalt wearing surface for thickness verification and density testing should be made every 200 feet of the roadway.

Following the placement and compaction of the asphalt wearing surface, the pavement shoulders may be prepared. If

fill soils are required to build up the shoulders to the pavement surface, these soils should be compacted to densities of at least 95 percent of the Modified Proctor maximum dry density. The erosion control measures, such as the jute mesh, should then be placed and adequately secured to the shoulder.

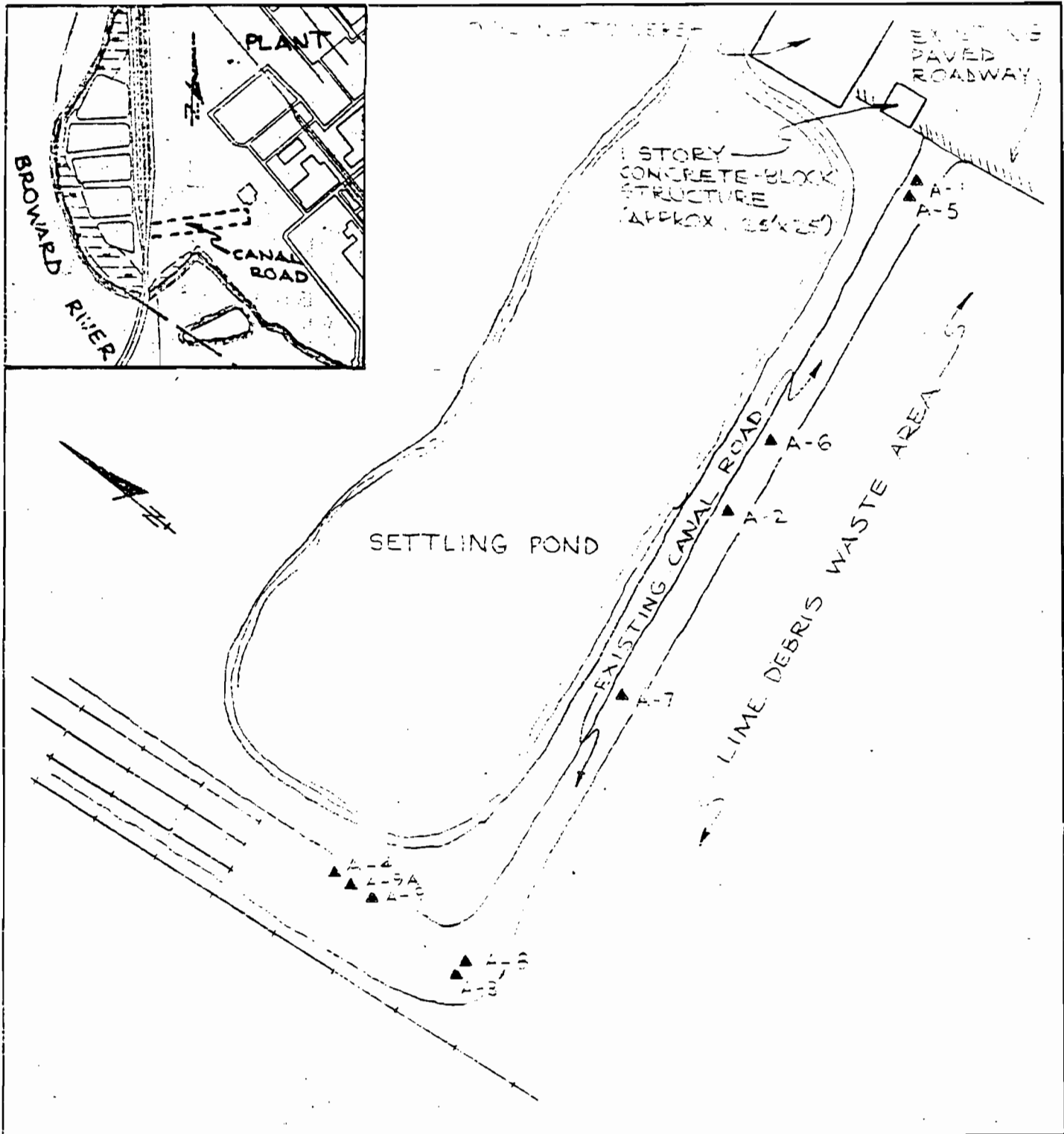
During the preparation of the shoulder adjacent to the lime waste area, preparation of the drainage ditch may also be performed. Care should be taken so that construction equipment is not allowed to operate on the new roadway until the asphalt wearing surface has had proper time to cure (harden). A period of at least one week should expire prior to allowing vehicular traffic on the roadway.

APPENDIX



<p><b>LEGEND</b></p> <p>Reference: Eastport Quadrangle Florida, (1964) Map of Flood Prone Areas U.S. Geological Survey</p>	<p><b>SITE LOCATION MAP</b></p>	
	<p>Canal Road Pavement Design St. Regis Paper Company Jacksonville, Florida</p>	
	<p>DRAWN: JMG <i>JMG</i></p>	
	<p>CHECKED: TVS <i>TVS</i></p>	<p>JOB NO: J-3066</p>
	<p>DATE: 6/6/78</p>	<p>SCALE: 1"=2000' (Approx.)</p>
<p>LAW ENGINEERING JACKSONVILLE, FLORIDA</p>		





LEGEND

▲ - Auger Boring Location

FIELD INVESTIGATION PLAN  
 Canal Road Pavement Design  
 St. Regis Paper Company  
 Jacksonville, Florida

DRAWN: JMG <i>JMG</i>	
CHECKED: TYS <i>TYS</i>	JOB NO: J-3066
DATE: 6/7/78	SCALE: 1"=100'
LAW ENGINEERING JACKSONVILLE, FLORIDA	

AUGER BORING RECORDS

CANAL ROAD PAVEMENT DESIGN  
ST. REGIS PAPER COMPANY  
JACKSONVILLE, FLORIDA

JOB NO. J-3066

<u>AUGER BORING NUMBER</u>	<u>DEPTH (FEET)</u>	<u>S O I L D E S C R I P T I O N</u>
A-1	0.0-0.6	LOOSE dark grey slightly silty fine SAND
	0.6-2.8	FIRM to LOOSE dark grey to grey slightly silty to silty fine SAND
	2.8-3.0	LOOSE light grey-tan fine SAND
	3.0-4.0	LOOSE dark grey-black silty fine SAND
	4.0-4.3	FIRM to VERY FIRM dark grey fine SAND w/gravel & few wood chips
	A.B.T.*	GWL** not encountered
A-2	0.0-1.3	LOOSE WOOD CHIPS
	1.3-1.8	LOOSE grey tan slightly silty fine SAND w/traces of organics
	1.8-2.0	VERY FIRM to DENSE dark grey slightly cemented fine SAND w/some gravel
	2.0-2.8	LOOSE grey slightly silty fine SAND
	2.8-3.2	FIRM grey slightly silty fine SAND
	3.2-3.5	FIRM dark grey brown slightly silty fine SAND w/decayed wood chips and tree bark
	3.5-3.6	FIRM to VERY FIRM dark grey fine SAND w/gravel
	A.B.T.	GWL not encountered
A-3	0.0-1.8	LOOSE WOOD CHIPS
	1.8-2.5	FIRM grey slightly cemented slightly silty fine SAND
	2.5-2.7	VERY FIRM dark grey fine SAND w/gravel
	A.B.T.	GWL not encountered
A-4	0.0-0.7	LOOSE tan fine SAND
	0.7-1.2	FIRM dark grey slightly silty fine SAND
	1.2-2.8	FIRM brown fine SAND w/gravel
	2.8-3.3	LOOSE grey slightly silty fine SAND
	A.B.T.	GWL @ 3.2'

AUGER BORING RECORDS

CANAL ROAD PAVEMENT DESIGN  
ST. REGIS PAPER COMPANY  
JACKSONVILLE, FLORIDA

JOB NO. J-3066

<u>AUGER BORING NUMBER</u>	<u>DEPTH (FEET)</u>	<u>S O I L D E S C R I P T I O N</u>
A-5	0.0-0.3	VERY LOOSE grey fine SAND w/some wood chips
	0.3-8.0	LOOSE to FIRM blue-grey slightly silty fine SAND w/gravel
	A.B.T.	GWL @ 6.0'
A-6	0.0-0.3	VERY LOOSE grey fine SAND w/some wood chips
	0.3-3.0	LOOSE blue-grey fine SAND w/gravel
	3.0-9.0	LOOSE to FIRM grey to dark grey silty fine SAND w/gravel and organic odor
A.B.T.	GWL @ 4.1'	
A-7	0.0-1.0	LOOSE WOOD CHIPS
	1.0-5.5	SOFT blue-grey slightly sandy SILT (Lime Waste)
	5.5-9.0	LOOSE grey to dark grey silty fine SAND
A.B.T.	GWL @ 4.5'	
A-8	0.0-1.5	LOOSE WOOD CHIPS
	1.5-3.0	LOOSE blue-grey fine SAND
	3.0-5.0	LOOSE to FIRM grey brown slightly silty fine SAND w/some wood chips and limeroc fragments
	5.0-7.0	LOOSE grey brown slightly silty fine SAND w/some small cemented fine grained particles
A.B.T.	GWL not recorded	
A-9	0.0-1.0	LOOSE blue-grey fine SAND w/wood chips
	1.0-3.0	LOOSE grey slightly silty fine to medium SAND w/gravel
	3.0-7.0	LOOSE to FIRM grey fine SAND
A.B.T.	GWL @ 4.8'	

AUGER BORING RECORDS

CANAL ROAD PAVEMENT DESIGN  
ST. REGIS PAPER COMPANY  
JACKSONVILLE, FLORIDA

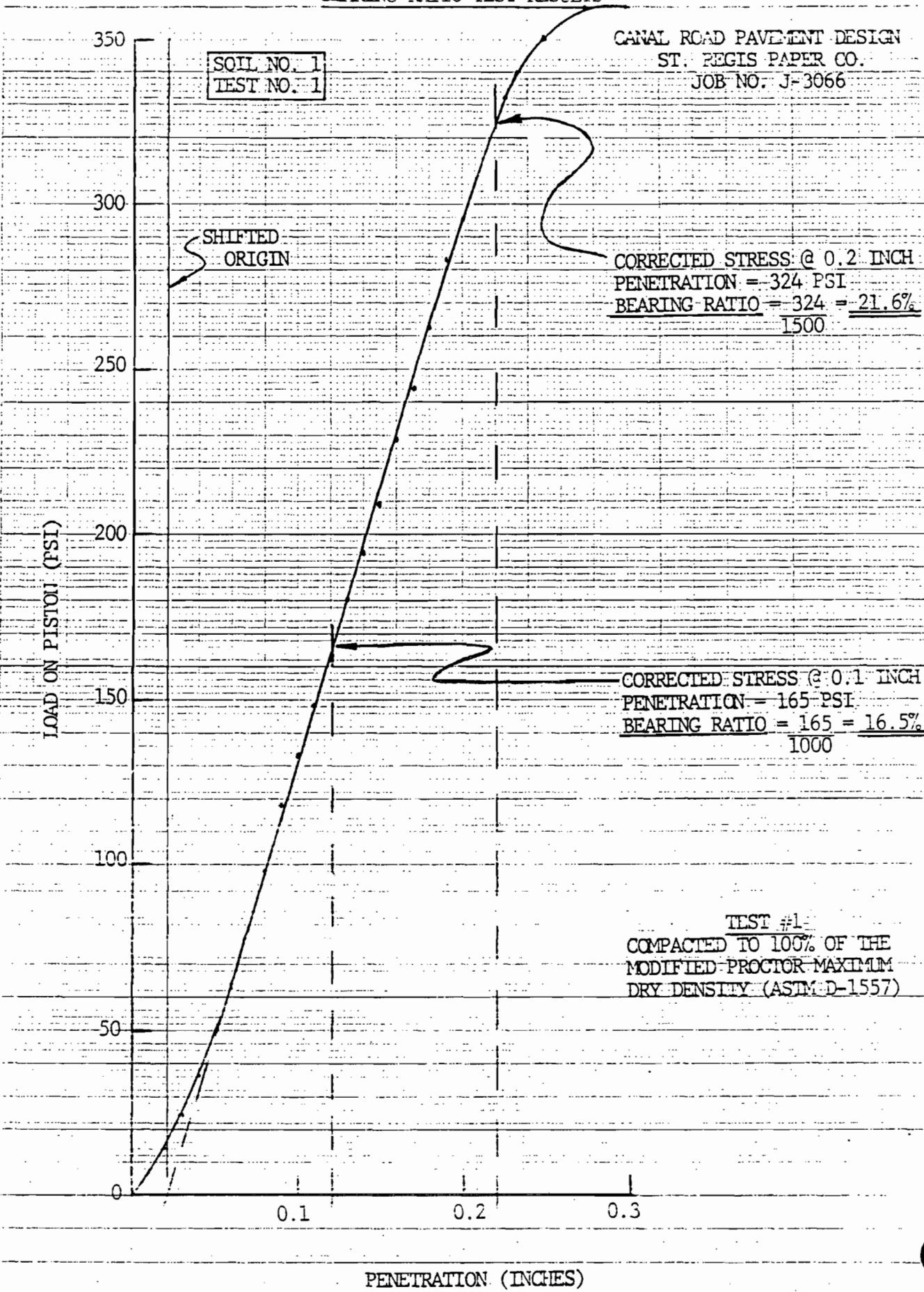
JOB NO. J-3066

AUGER BORING NUMBER	DEPTH (FEET)	S O I L D E S C R I P T I O N
A-9A	0.0-1.5	LOOSE grey slightly silty fine SAND w/some small wood chips
	1.5-2.0	LOOSE grey brown slightly silty fine SAND w/some gravel
	2.0-7.0	LOOSE blue grey silty fine SAND
	A.B.T.	GWL @ 4.5'

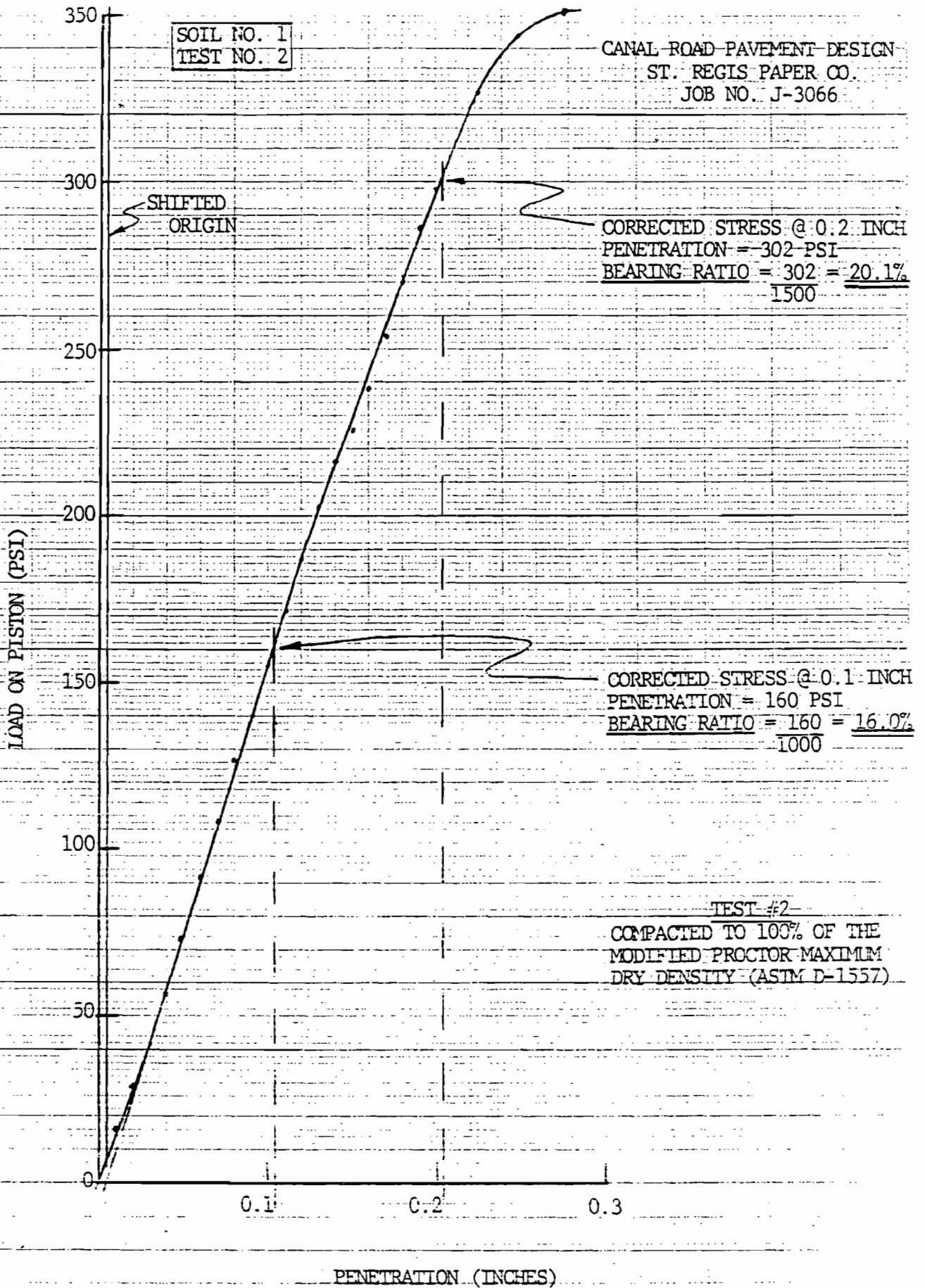
\* A.B.T. - Auger Boring Terminated

\*\* GWL - Groundwater Level at Time of Boring

BEARING RATIO TEST RESULTS



BEARING RATIO TEST RESULTS

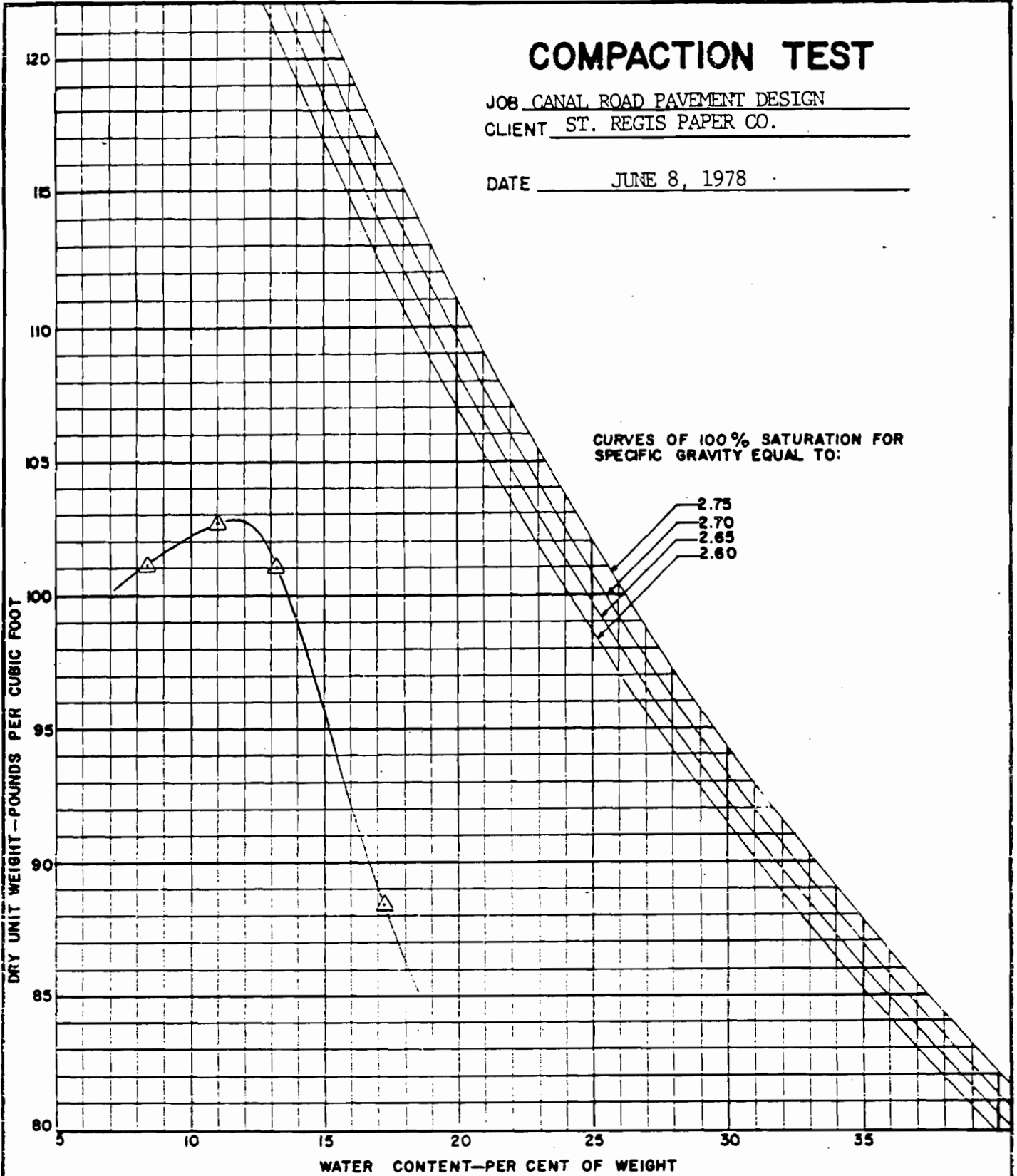


# COMPACTION TEST

JOB CANAL ROAD PAVEMENT DESIGN

CLIENT ST. REGIS PAPER CO.

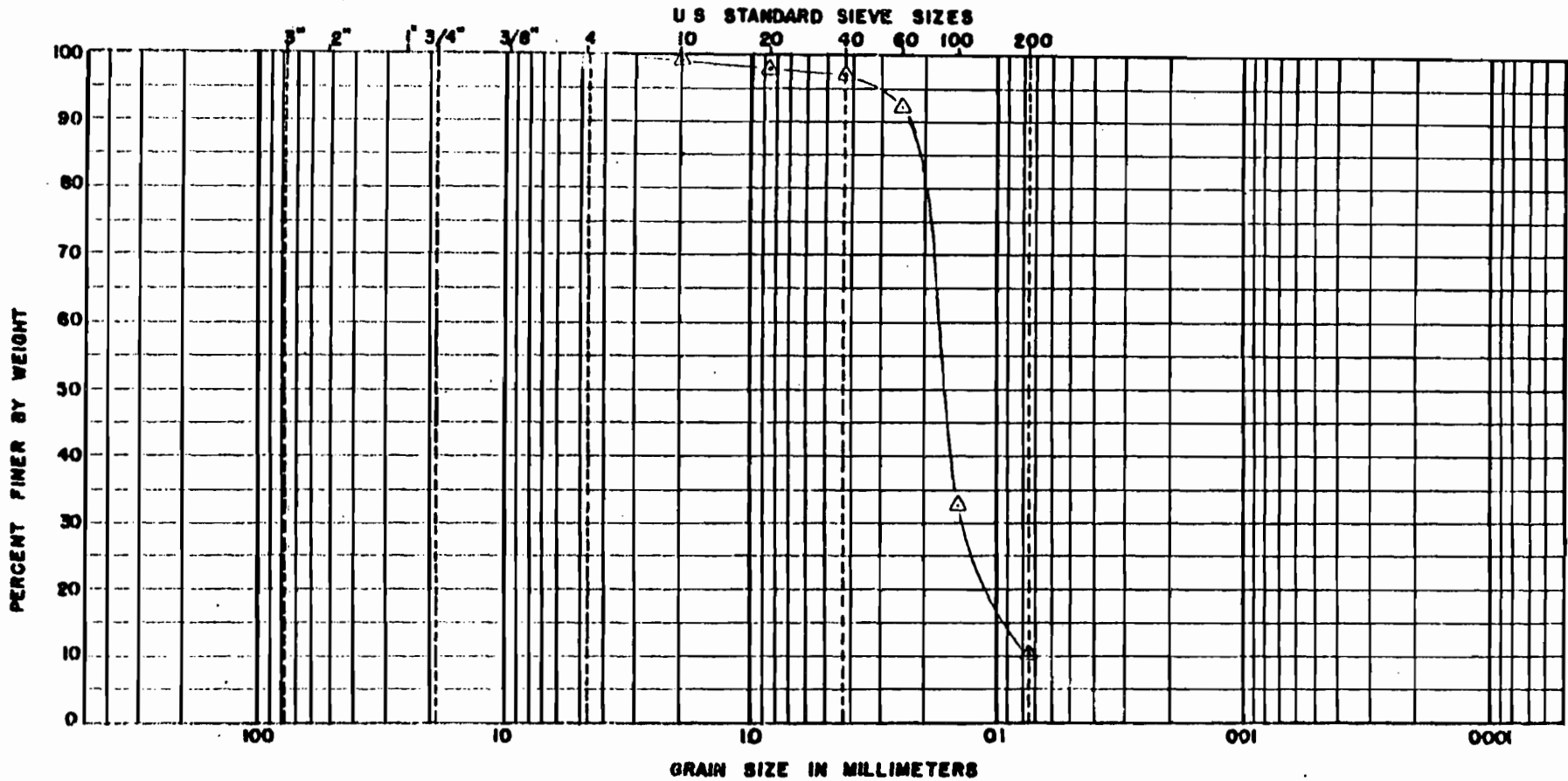
DATE JUNE 8, 1978



CURVES OF 100% SATURATION FOR SPECIFIC GRAVITY EQUAL TO:

- 2.75
- 2.70
- 2.65
- 2.60

MOISTURE DENSITY RELATION	METHOD OF TEST	MAX. DRY DENSITY PCF	OPTIMUM MOISTURE CONTENT %	SOIL DESCRIPTION OR CLASSIFICATION AND SAMPLE LOCATION
Soil No 1	ASTM D-1557 METHOD-D	102.8	11.8	Grey to dark grey slightly silty fine SAND



BOUL. DERB.	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT SIZES	CLAY SIZES

BORING NO	ELEV OR DEPTH	NAT WC	LL	PL	PI	DESCRIPTION OR CLASSIFICATION
Soil No. 1						Grey to dark grey slightly silty fine SAND

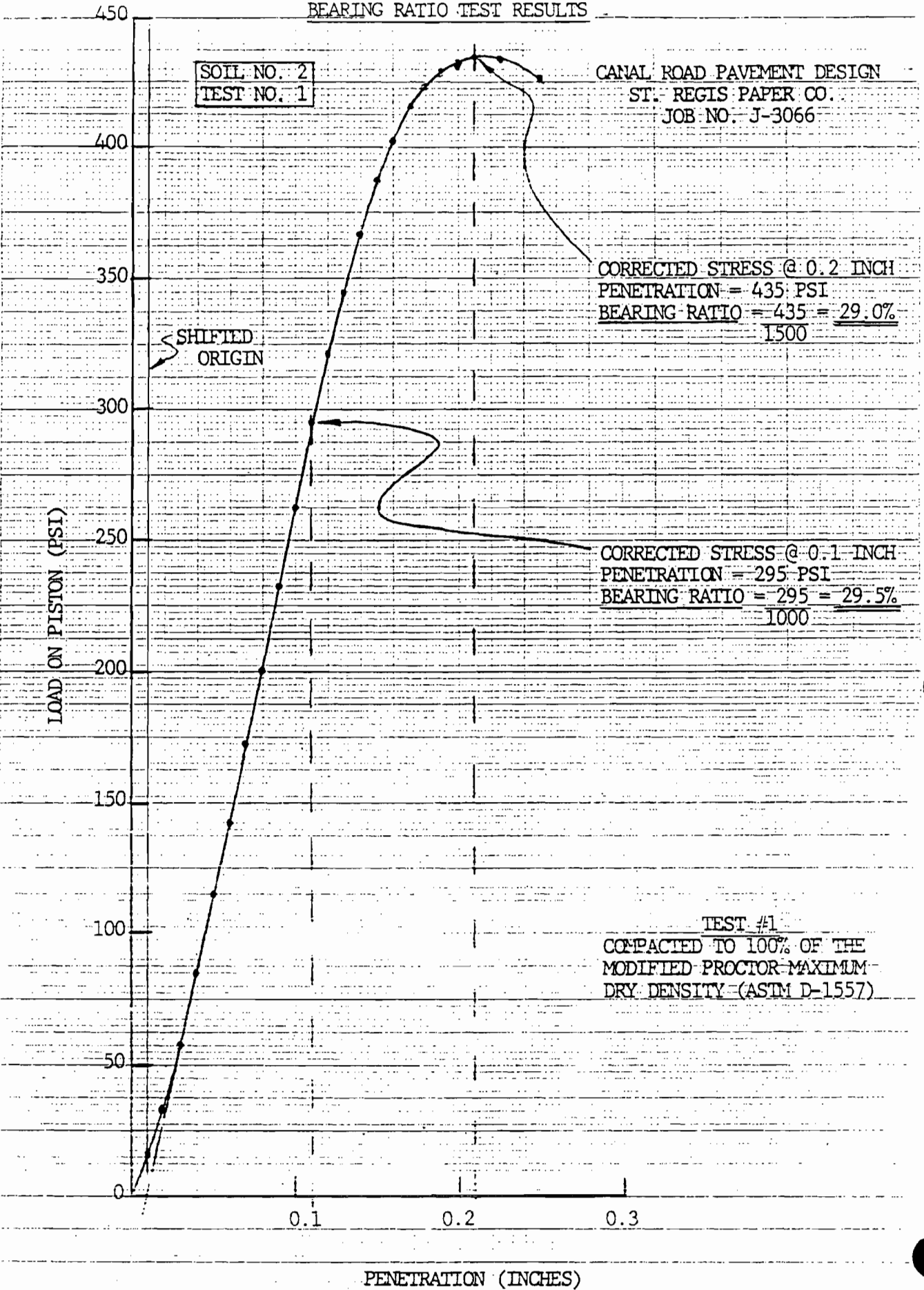
**GRAIN SIZE DISTRIBUTION**

JOB NO. J-3066

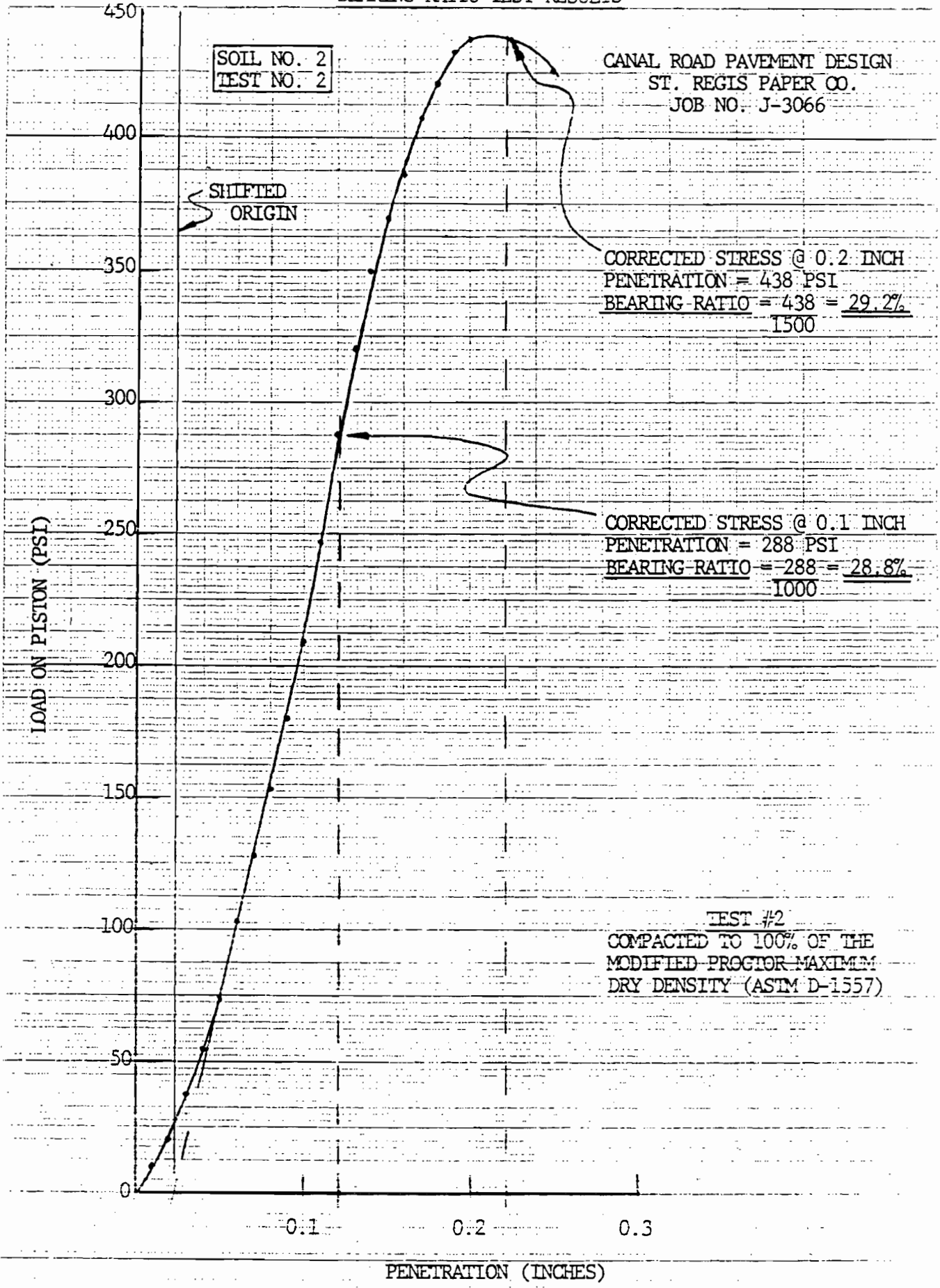
LAW ENGINEERING TESTING COMPANY  
6-1



BEARING RATIO TEST RESULTS



BEARING RATIO TEST RESULTS

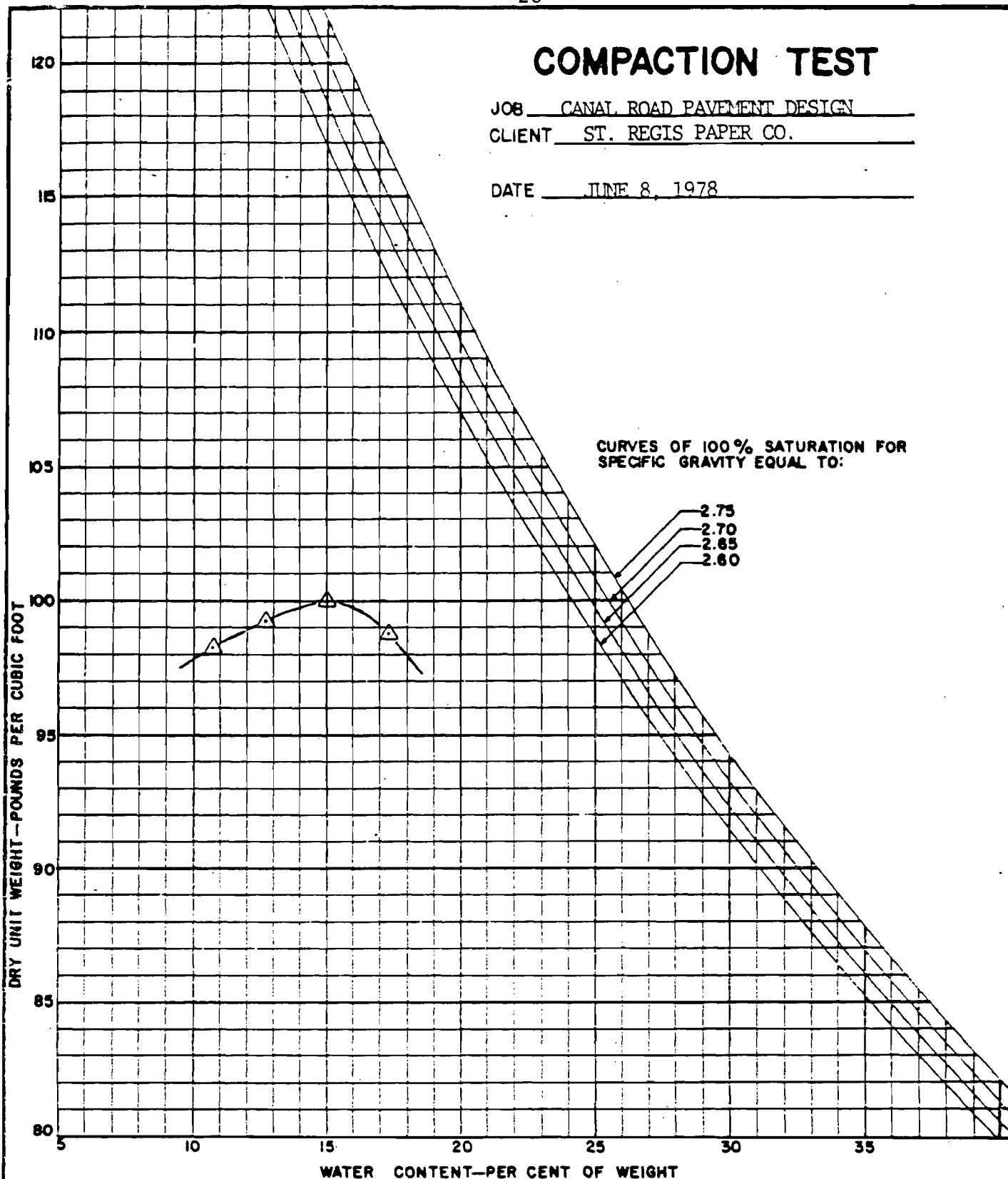


# COMPACTION TEST

JOB CANAL ROAD PAVEMENT DESIGN

CLIENT ST. REGIS PAPER CO.

DATE JUNE 8, 1978



CURVES OF 100% SATURATION FOR SPECIFIC GRAVITY EQUAL TO:

- 2.75
- 2.70
- 2.65
- 2.60

MOISTURE DENSITY RELATION	METHOD OF TEST	MAX. DRY DENSITY PCF	OPTIMUM MOISTURE CONTENT %	SOIL DESCRIPTION OR CLASSIFICATION AND SAMPLE LOCATION
Soil No. 2	ASTM D-1557 METHOD-D	100.0	15.0	Grey fine SAND



## FIELD AND LABORATORY TEST PROCEDURES

### Field Procedures

Auger Borings - Ten auger borings were made on the site. Four auger borings were advanced manually by a post-hole auger and six auger borings were advanced mechanically by a continuous flight auger attached to the drill rig. The soils encountered from both augering methods were identified, in the field, from cuttings brought to the surface by the augering process. Representative soil samples were placed in glass jars and transported to our laboratory where the samples were examined by an engineer in order to verify the field classification. Soil consistencies were estimated from the relative difficulty of the augering process.

### Laboratory Procedures

Bearing Ratio - To conduct the Bearing Ratio Test, a Modified Proctor compaction test is first performed on the soil in order to obtain its maximum dry density and optimum moisture content. Using these test results, two molds were filled with the soil in compacted layers to approximately 100 percent of the Modified Proctor maximum dry density. The soil-filled molds were then submerged and completely inundated for a period of four days. Following the saturation period, the soil-filled molds were penetrated with a 1.95

inch diameter piston at a rate of approximately 0.05 inches per minute. The load applied to the piston was recorded during the penetration. This test is similar to that described by ASTM D-1883, "Bearing Ratio of Laboratory Compacted Soils".

Compaction - Representative samples of the upper surface soils were obtained for laboratory compaction testing. Modified Proctor compaction tests (ASTM D-1557), Method D, were performed on the soils to determine their compaction characteristics, including their maximum dry density and optimum moisture content.

Grain Size Distribution - Grain size test or a sieve analysis was performed on the soil samples selected for compaction testing to determine their particle size and distribution of the soil particles. The grain size distribution of soils coarser than a No. 200 sieve was determined by passing the samples through a standard set of nested sieves. The material retained on the No. 200 sieve was washed over this sieve in order to determine the percentage passing the No. 200 sieve. The soil which passes a No. 200 sieve is classified in the silt and clay size range. This test is similar to that described by ASTM D-422.

KEY TO SOIL CLASSIFICATION

Correlation of Penetration Resistance with  
Relative Density and Consistency

<u>Sands and Gravels</u>		<u>Silts and Clays</u>	
<u>No. of Blows, N</u>	<u>Relative Density</u>	<u>No. of Blows, N</u>	<u>Consistency</u>
0 - 4	Very Loose	0 - 2	Very Soft
5 - 10	Loose	3 - 4	Soft
11 - 20	Firm	5 - 8	Firm
21 - 30	Very Firm	9 - 15	Stiff
31 - 50	Dense	16 - 30	Very Stiff
Over 50	Very Dense	31 - 50	Hard
		Over 50	Very Hard

Particle Size Identification  
(Unified Classification System)

Boulders -	Diameter exceeds 8 inches
Cobbles -	3 to 8 inches diameter
Gravel:	Coarse - 3/4 to 3 inches diameter
	Fine - 4.76 mm to 3/4 inch diameter
Sand:	Coarse - 2.0 mm to 4.76 mm diameter
	Medium - 0.42 mm to 2.0 mm diameter
	Fine - 0.074 mm to 0.42 mm diameter
Silt and Clay:	Less than 0.07 mm (Particles cannot be seen with naked eye)

Modifiers

The modifiers provide our estimate of the amount of fines (silt or clay size particles) in the soil sample.

<u>Approximate Fines Content</u>
5% Fines 12%
12% Fines 30%
30% Fines 50%

<u>Modifiers</u>
Slightly silty or slightly clayey
Silty or clayey
Very silty or very clayey



**LAW ENGINEERING**

GEOTECHNICAL, ENVIRONMENTAL  
& CONSTRUCTION MATERIALS  
CONSULTANTS

March 10, 1978

St. Regis Paper Company  
P. O. Box 18020  
Jacksonville, Florida 32229

Attention: Mr. Bill Dufner

Subject: Report of Subsurface Investigation  
Proposed Railroad Spur Relocation  
St. Regis Paper Company - Jacksonville Mill  
Jacksonville, Florida  
Job No. J-3027

Gentlemen:

Law Engineering Testing Company has completed a subsurface investigation for the proposed railroad spur relocation for St. Regis Paper Company in Jacksonville, Florida. This investigation was made in accordance with our Proposal No. 78-815S, dated February 28, 1978, and your Purchase Order, No. 4284-JK, dated March 7, 1978. This report briefly outlines the investigative procedures used along with the findings of this investigation. Included in PART IV of this report are our recommendations for site preparation and railroad subbed design for the relocated railroad spur.

We appreciate the opportunity to be of assistance to you as your geotechnical consultant. If you have any questions regarding this report or if we may be of further service, please contact us.

Very truly yours,

LAW ENGINEERING TESTING COMPANY

Terrill V. Smith, E.I.  
Civil Engineer

TVS/EWL/E

E. W. Lingo, P.E.  
Chief Engineer  
Registered, Fla. 9326



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PART I: PROJECT INFORMATION AND  
STRUCTURAL CONDITIONS

As indicated on the Site Location Map and the Field Investigation Plan, both in the Appendix, the proposed railroad spur relocation will be located within the St. Regis Paper Company property at Jacksonville, Florida. We understand that the relocated railroad spur will be approximately 1300 feet in length and will extend from the Seaboard Coast Line mainline rail into the mill. We understand that the relocated railroad spur will extend over a low area which is often inundated. Approximately one-half of the new spur will will be located over this area with the remainder extending over a filled area. We understand that the fill/debris is composed of wood chips, tree bark, and pulp refuse from the mill.

We have assumed that rail loads will have freight traffic consisting primarily of open cars loaded with wood chips and cut timber. The maximum anticipated length of these cars is 60 feet. We have assumed that the railroad bed will be constructed using a conventional soil subgrade and ballast system.

PART II: FIELD AND LABORATORY INVESTIGATION

Field Investigation

To investigate the subsurface conditions, four soil test borings were drilled to depths of approximately 20 feet within the fill/debris area of the site. In addition, hand-probe borings were made in the low inundated areas to depths of approximately 2 to 4 feet along the railroad relocation line. The boring locations are shown on the Field Investigation Plan in the Appendix. The borings were located and made by our field crew on March 6-8, 1978. Ground surface elevations for the boring locations were not established.

The results of the soil test and probe borings are indicated on the Test Boring and Probe Boring Records that are given in the Appendix. The stratification lines on the Test Boring Records represent in some cases the approximate boundary between soil types and the transition may be gradual. For detailed descriptions of the drilling and sampling techniques used, please see the Field and Laboratory Test Procedures section in the Appendix.

In addition to the above soil test and probe borings, the site was inspected by an engineer from our office on

March 6, 1978. During this inspection, the surface soils, topographic features, drainage conditions, and the condition of adjacent rail lines were noted.

#### Laboratory Investigation

Laboratory tests were performed on two samples of the fill/debris material encountered in the soil test borings. The laboratory tests enabled us to determine the natural water content, the percentage of fines, and the organic content of the tested soils.

The results of these tests are given on the Summary of Laboratory Test Data sheet in the Appendix. A brief description of each laboratory test procedure is also given in the Appendix in the Field and Laboratory Test Procedures section.

PART III: SITE AND SUBSURFACE CONDITIONS

Site Conditions

From our site inspection on February 6, 1978, we noted that two different surface conditions exist along the proposed railroad relocation line. These are: 1) natural low, wet area, and 2) the elevated, filled area.

Approximately 600 feet of the 1300 foot long relocated railroad spur is covered with the fill/debris material. The waste fill material is generally composed of wood chips, tree bark, pulp fibers, and some fine sands and very soft silts. The filled area along the railroad spur line has recently been leveled and is approximately 1 to 2 feet lower than the elevation of the adjacent railroad line. The generally level topography of the filled area appears to inhibit surface runoff although the fill/debris composition appears to allow some drainage through percolation.

The remaining approximate 700 feet along the proposed relocated railroad spur extends over a pond that had about 2 feet of water and a ground surface elevation approximately 7 to 10 feet lower than the debris area. The ground surface within the low area slopes downward abruptly to the southwest resulting in the pond which is empounded by the

existing railroad spur. The vegetation within the pond is primarily marsh grass with a few trees. Due to the low ground surface elevation, this area retains nearly all the runoff from the adjoining higher land.

The existing adjacent railroad tracks have experienced some settlement and misalignment. The condition of the ballast roadbed, cross-ties and attachment of the tracks to the ties is very poor in some areas of the section of spur that will be replaced. These conditions and the increasing length of the wood cars have resulted in several derailments of the wood cars in recent months.

#### Subsurface Conditions

General - A graphical representation of the subsurface conditions in the filled area of the relocated spur is given on the Generalized Subsurface Profile in the Appendix. This profile and the soil conditions outlined below highlight the major subsurface stratification. For a detailed description of the soil conditions encountered, please refer to the Test Boring and Probe Boring Records in the Appendix. When reviewing these records and the soil profile, it should be understood that the soil conditions will vary somewhat between the boring locations.

Soils - In general, the fill areas contain approximately 4 to 8 feet of wood chips, tree bark, discarded pulp fiber, and general debris underlain by a loose to firm grey and brown slightly silty to slightly clayey slightly silty fine sand. The probe borings in the low pond area indicated that the upper 2 to 3 feet of surface soils were loose to firm in consistency and were composed primarily of brown fine sands.

Ground Water - The ground water level was recorded at all of the soil test boring locations at the time of drilling. The ground water level generally varied from about 3 to 4½ feet below the ground surface, although it was encountered at the surface in boring B-3. The ground water level will fluctuate depending upon rainfall and runoff and the tidal fluctuations in the Broward River, which is directly west of the existing Seaboard Coast Line mainline.

PART IV: RECOMMENDATIONS FOR RAILROAD SUBBED  
DESIGN AND SITE PREPARATION

General Evaluation

The following recommendations are based upon the previously presented project information and structural conditions along with the data obtained in this investigation. The field and laboratory test data have been compared with previous correlations of foundation bearing capacities and settlements for soils similar to those at this site. If the project information is incorrect or if the alignment changes significantly, please contact us so that our recommendations can be reviewed. In addition, the discovery of any site and/or subsurface conditions during construction which deviate from the data obtained in this investigation should also be reported to us for our evaluation.

We consider the subsurface soils at the site suitable to support the relocated railroad spur following removal of the debris materials along the new roadbed alignment. If these fill materials were left in-place, settlement of the tracks would occur. This settlement problem, if not continually corrected could result in car derailments. Due to recent derailments along the existing spur and your desire to eliminate such occurrences, we recommend that all of the waste debris along the relocated spur alignment be excavated



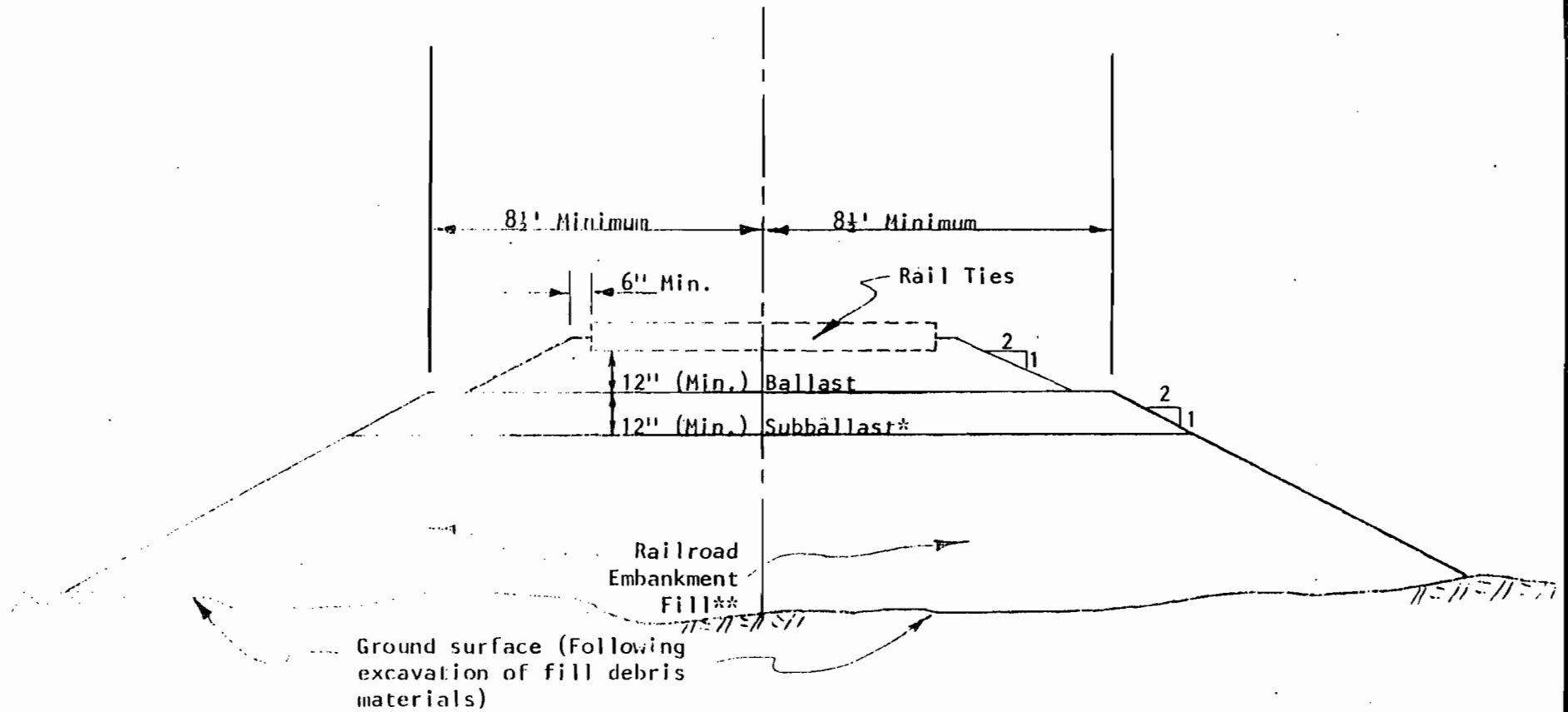
and removed from the roadbed.

### Railroad Subbed Design

We recommend that the railroad subbed be constructed using a conventional subballast-ballast layered system. Subballast and ballast material layers should each be at least 12 inches thick and compacted to adequate densities.

We recommend that the subballast be a suitable structural fill which is a non-plastic, inorganic, granular soil containing less than 10 percent fines (material passing the No. 200 mesh sieve). The ballast course may be a conventional crushed rock or crushed gravel that provides a sufficient quantity of angular material to prevent excessive movement of the ballast layer. Ballast course material should be well graded with at least 90 percent passing a  $1\frac{1}{2}$  inch square sieve and no more than 5 percent passing a No. 4 sieve (4.76 millimeter square sieve).

A profile of the recommended railroad bedding cross-section is shown on the following page. The railroad subbed profile shows a side slope of 2:1 (H-to-V) in the subballast and embankment soils. This slope is considered a maximum for permanent construction in fine sandy soils. Some maintenance of the slopes of the sandy soils should be expected.



\* Densities at least 98% of the Modified Proctor maximum dry density (ASTM D1557).

\*\* Densities at least 95% of the Modified Proctor maximum dry density (ASTM D1557).

LEGEND

Scale: 1" = 4'

CL : Center Line of Track

LAW ENGINEERING TESTING COMPANY

Jacksonville, Florida

RAILROAD SUBBED PROFILE

St. Regis Railroad Relocation

St. Regis Paper Co.

Jacksonville, Florida

Job No. J-3027

To minimize erosion and to provide better access, side slopes no steeper than 3:1 (H-to-V) are recommended. Grassing of the slopes on 2 to 1 or flatter will also minimize erosion.

#### Site Preparation

Site preparation should initially include the removal of the heavy vegetation within the pond along the area where fill is to be placed and all existing debris in the higher area where the new track is to be constructed. Due to the relatively high ground water level and loose condition of the upper few feet of debris, excavation with a dragline will probably be required in the elevated area.

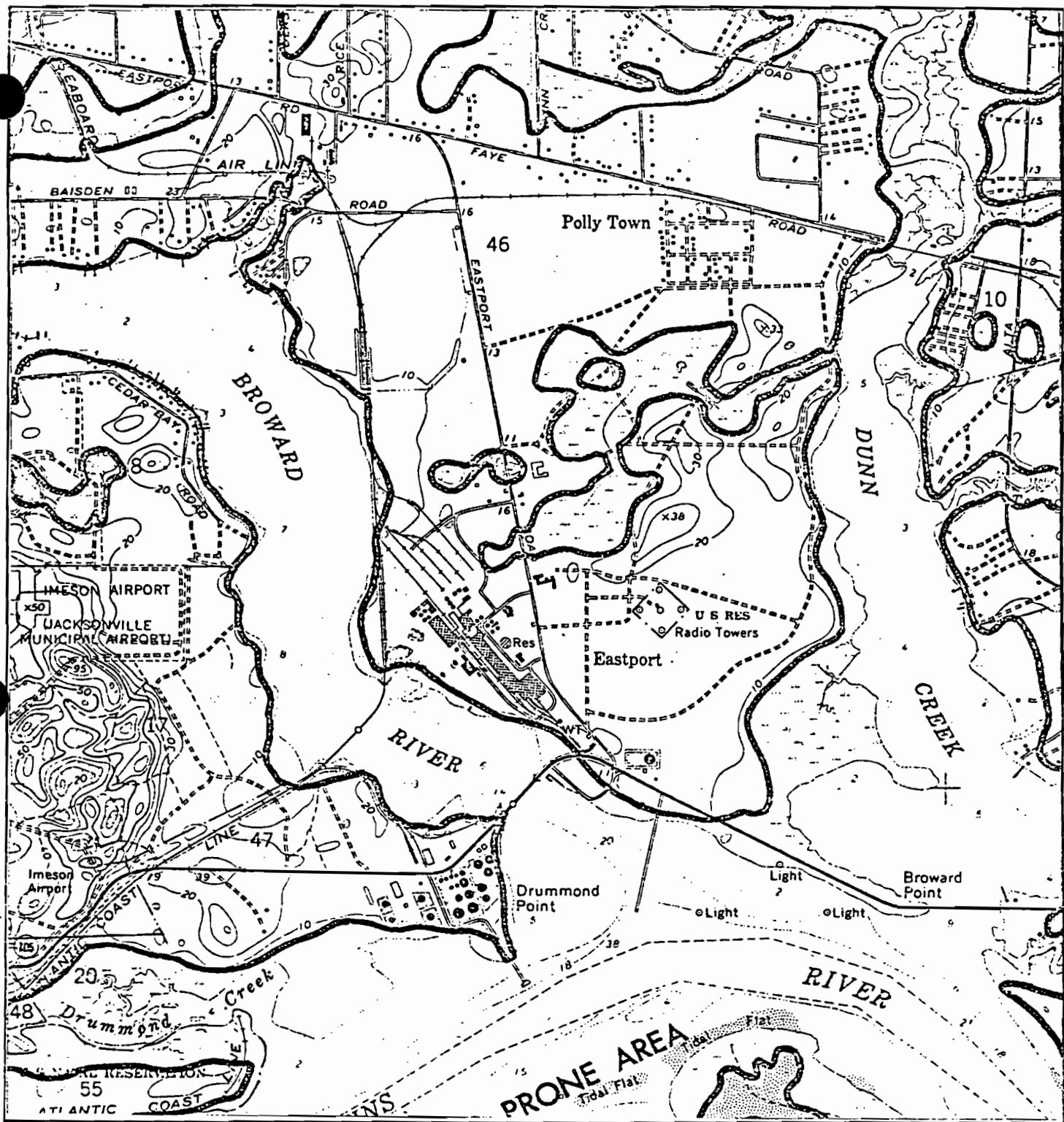
Following the removal of all vegetation and debris, structural fill may be placed in the standing water by end dumping methods. It would be beneficial to the compaction efforts to drain as much of the ponded and trapped water as possible by ditching, diking and sump pumping prior to fill placement. Following placement of structural fill to not more than 1 foot above the standing water level, it should be compacted to densities of at least 93 percent of the Modified Proctor maximum dry density (ASTM D1557). All structural fill subsequently placed above this level should be compacted to densities not less than 95 percent of the Modified Proctor. The one foot of structural fill immediately beneath the ballast rock course should be compacted to densities of at least 98 percent of the Modified Proctor

maximum dry density (ASTM D1557).

To obtain the previously recommended densities, we suggest the use of a 3 to 5 ton, static at drum weight, vibratory roller. Maximum fill lift thicknesses should be no more than 12 inches when using this roller. Six coverages of each lift with this roller should achieve the recommended densities, however, additional passes should be performed as required to obtain the desired compaction.

We have assumed that the track ties and rails will be placed prior to the placement of the ballast course. Ballast will then be placed over the tracks, the tracks jacked to grade, and the ballast placed to secure the track at grade. If this method of track construction is used, we recommend that the ballast course be sufficiently tamped in order to adequately support the track ties and rails. An alternative is to place the ballast subsequent to the subballast in lifts not greater than 6 inches thick and then compacted with a minimum of 6 coverages with the previously recommended roller. We recommend that the vibratory action of the vibratory drum roller be disengaged during compaction of the railroad ballast course.

APPENDIX



**LEGEND**

Scale: 1" = 2000' (Approximate)

Reference: Eastport Quadrangle  
 Florida (1964)  
 Map of Flood Prone Areas  
 U.S. Geological Survey

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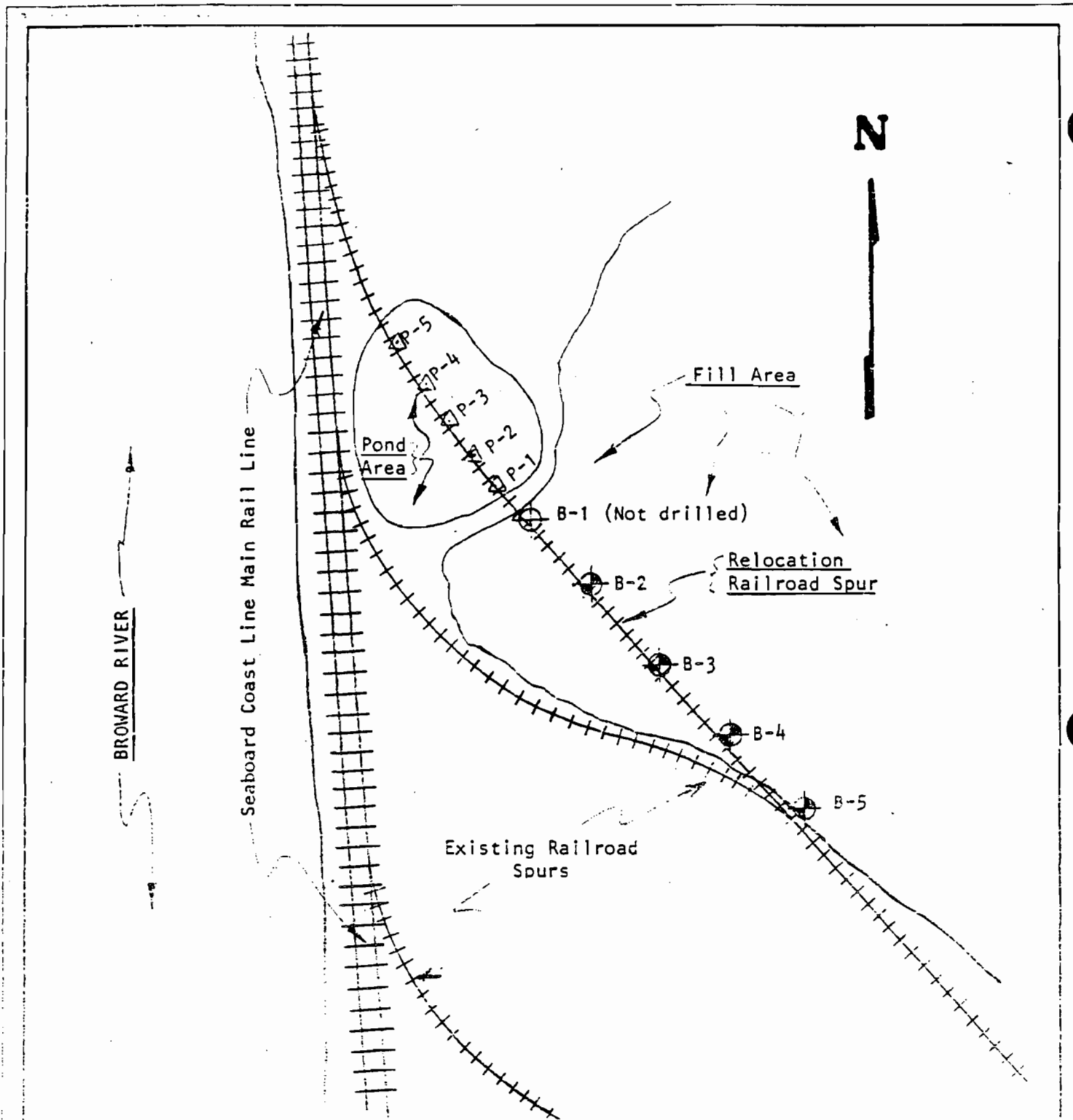
**SITE LOCATION MAP**

St. Regis Railroad Relocation

St. Regis Paper Co.



Jacksonville, Florida

Job No. J-3027



LEGEND

Scale: 1" = 200' (Approximate)

-  Soil Test Boring Location
-  Hand Probe Boring Location

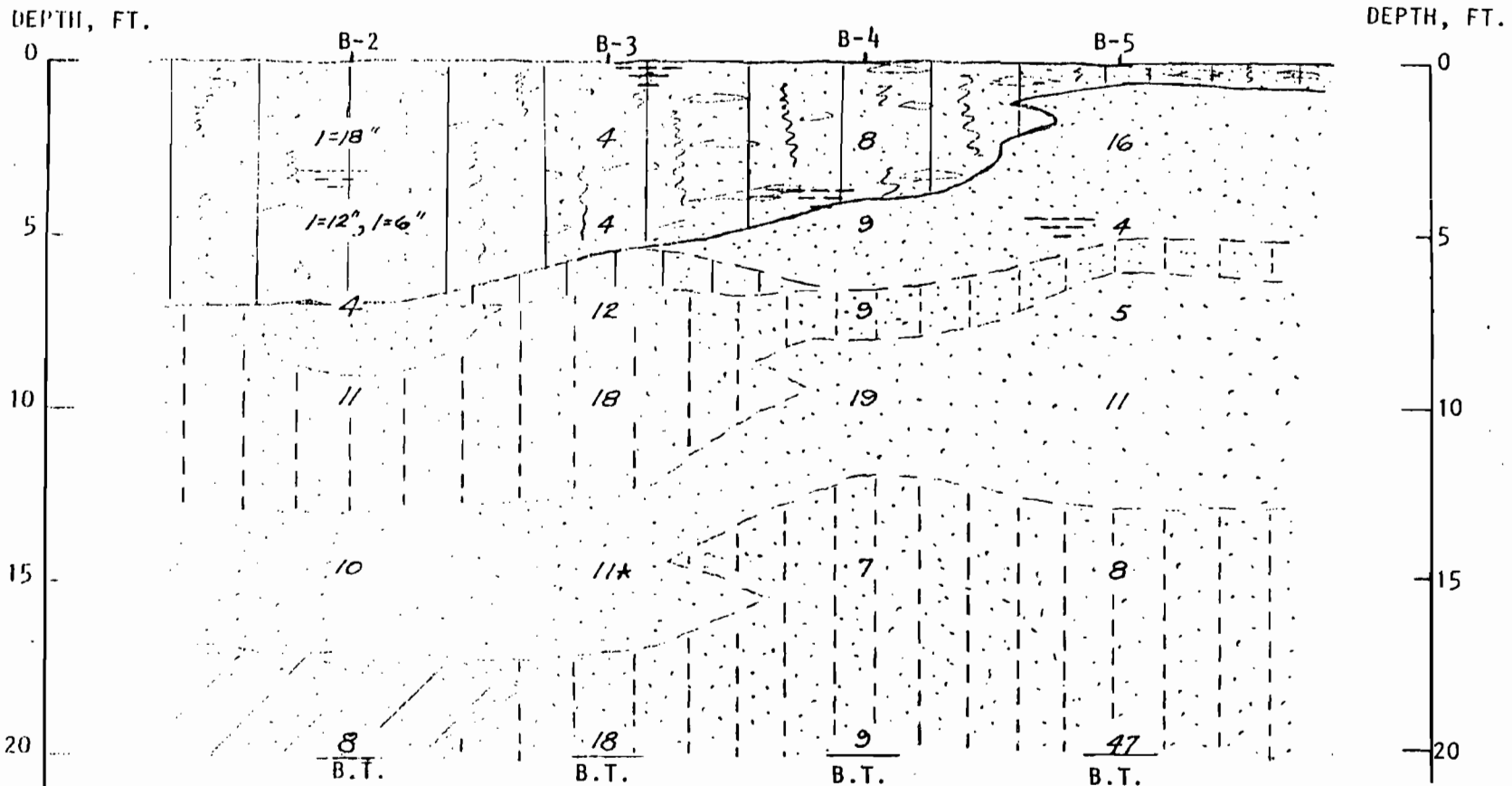
LAW ENGINEERING TESTING COMPANY  
Jacksonville, Florida

FIELD INVESTIGATION PLAN






St. Regis Railroad Relocation  
St. Regis Paper Co.

Jacksonville, Florida

Job No. J-3027



B.T. - Boring Terminated  
 \* - Penetration Resistance, blows/ft.

-  Fine SAND
-  Clayey silty fine SAND
-  Slightly silty to slightly clayey slightly silty fine SAND
-  Wood Chips, Tree Bark, Pulp Fibers, Silt w/ some fine sand
-  Silty fine SAND

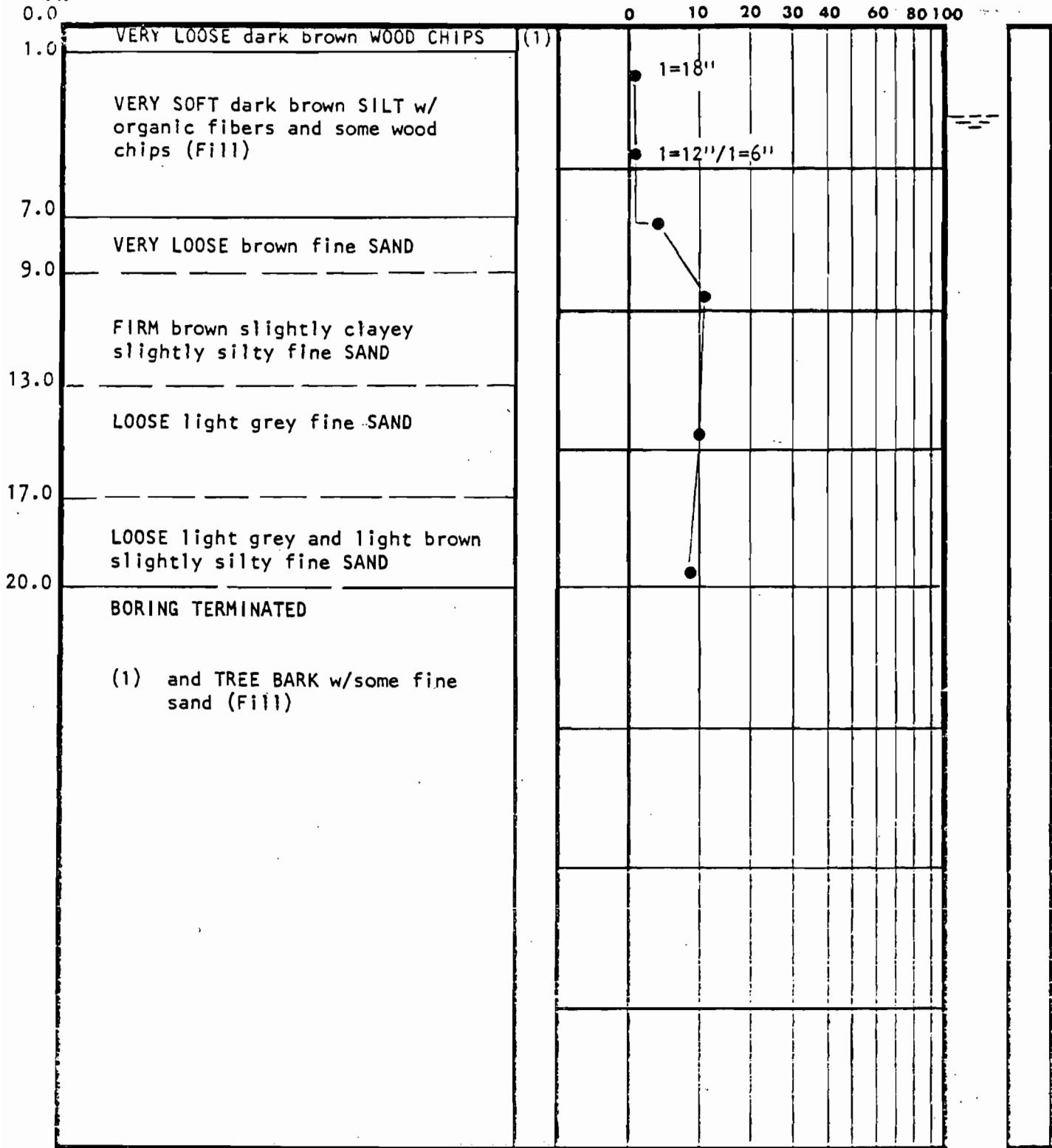
LAW ENGINEERING TESTING COMPANY  
 Jacksonville, Florida

GENERALIZED SUBSURFACE PROFILE

St. Regis Railroad Relocation  
 St. Regis Paper Co.  
 Jacksonville, Florida  
 Job No. J-3027



DEPTH  
FT.



## TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113  
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-2  
DATE DRILLED 3/7/78  
JOB NO. J-3027

UNDISTURBED SAMPLE

WATER TABLE, 24 HR.

WATER TABLE, 1 HR.

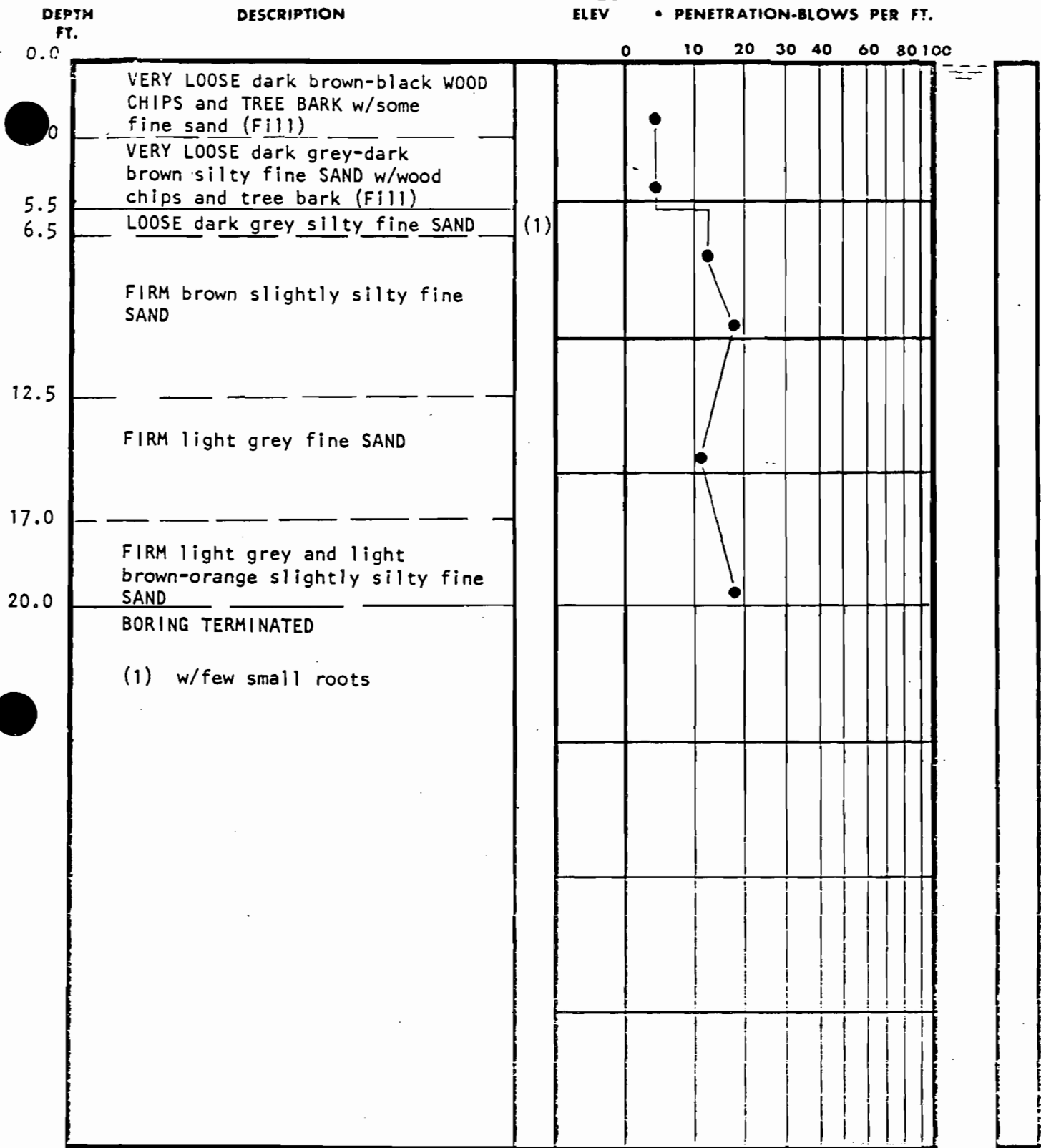
50% ROCK CORE RECOVERY

LOSS OF DRILLING WATER

LAW ENGINEERING TESTING CO.

BEST AVAILABLE COPY

-16-



TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-3

DATE DRILLED 3/6/78

JOB NO. J-3027

UNDISTURBED SAMPLE

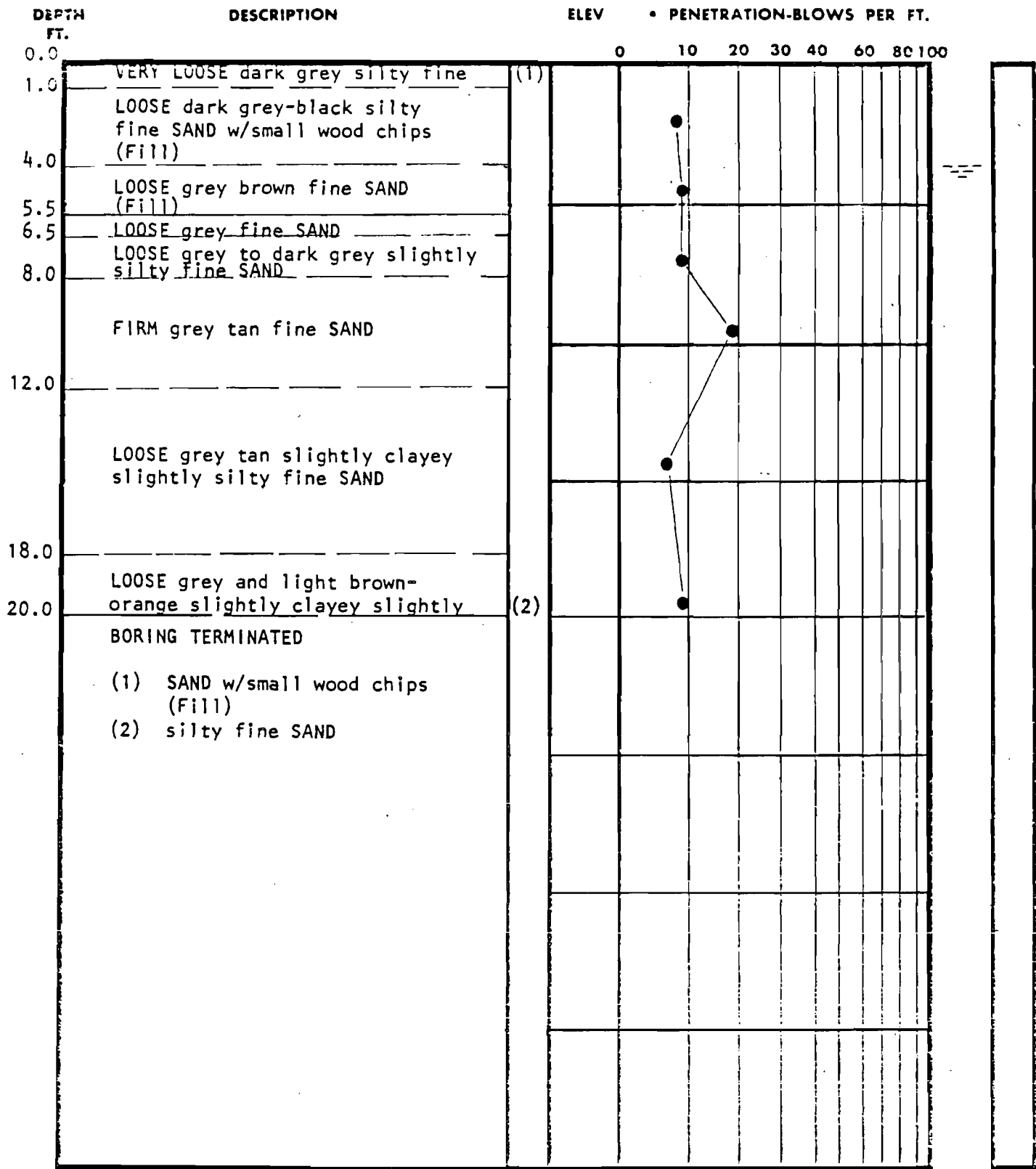
WATER TABLE, 24 HR.

WATER TABLE, 1 HR.

50% ROCK CORE RECOVERY

LOSS OF DRILLING WATER

LAW ENGINEERING TESTING CO.








- (1) SAND w/small wood chips (Fill)
- (2) silty fine SAND

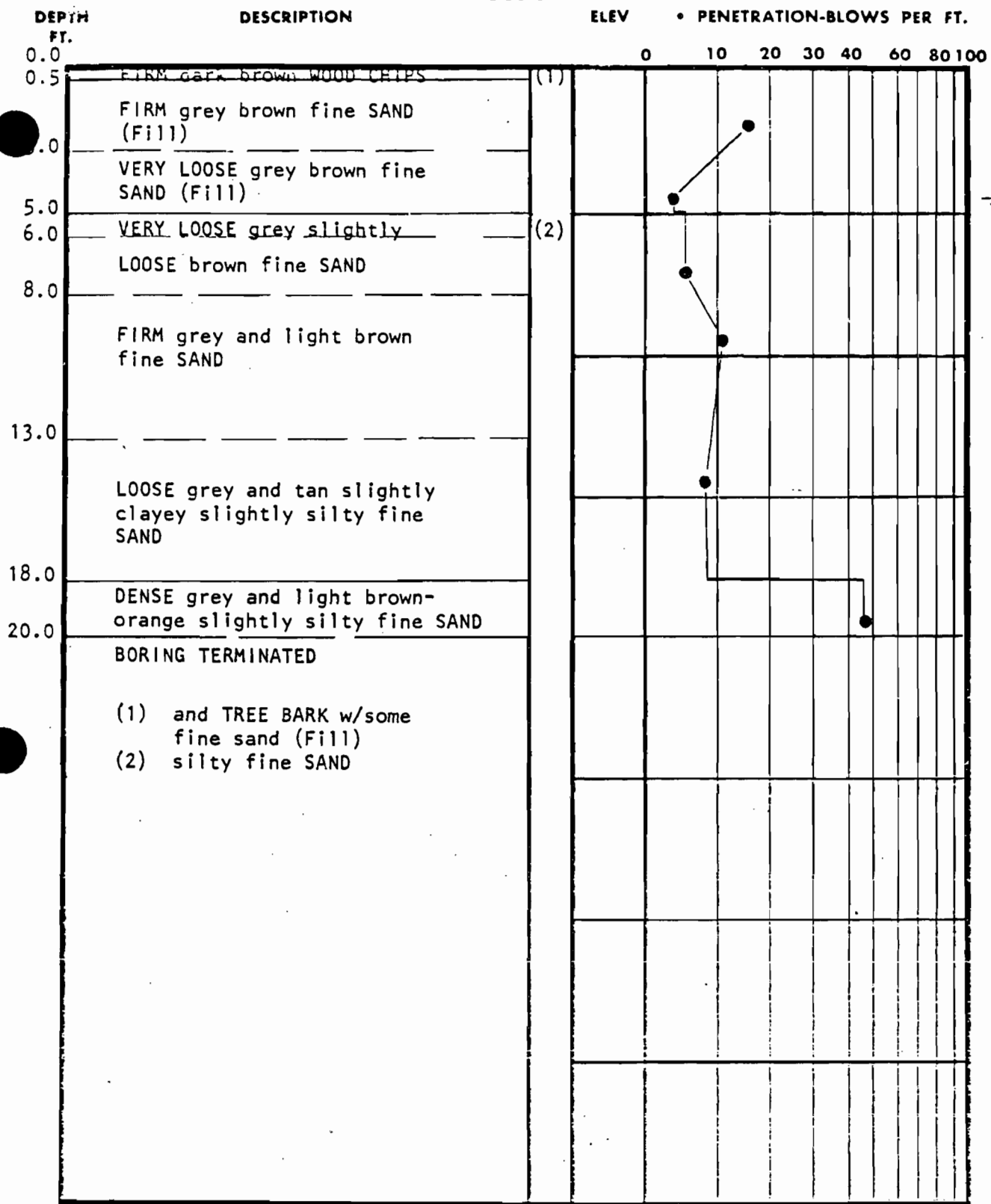
TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-4  
 DATE DRILLED 3/6/78  
 JOB NO. J-3027

 UNDISTURBED SAMPLE  
 WATER TABLE, 24 HR.  
 WATER TABLE, 1 HR.  
 % ROCK CORE RECOVERY  
 LOSS OF DRILLING WATER

**BEST AVAILABLE COPY**



**TEST BORING RECORD**

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. E-5  
 DATE DRILLED 3/6/78  
 JOB NO. J-3027

UNDISTURBED SAMPLE

WATER TABLE, 24 HR.

WATER TABLE, 1 HR.

50% ROCK CORE RECOVERY

LOSS OF DRILLING WATER

LAW ENGINEERING TESTING CO.

PROBE BORING RECORDS

St. Regis Railroad Relocation  
St. Regis Paper Co.  
Jacksonville, Florida

<u>Probe Boring Number</u>	<u>Depth(feet)</u>	<u>Soil Description</u>
P-1	0.0 - 0.8 0.8 - 2.0 P.T.	WATER VERY LOOSE to LOOSE brown fine SAND
P-2	0.0 - 1.5 1.5 - 2.0 2.0 - 3.0 P.T.	WATER VERY SOFT brown SILT w/ wood fiber LOOSE to FIRM light brown fine SAND
P-3	0.0 - 1.5 1.5 - 2.8 P.T.	WATER LOOSE to FIRM light brown fine SAND
P-4	0.0 - 0.7 0.7 - 2.8 P.T.	WATER VERY LOOSE to FIRM light brown fine SAND
P-5	0.0 - 2.0 2.0 - 4.0 P.T.	WATER VERY LOOSE to FIRM light brown fine SAND

P.T. - Probe Terminated

SUMMARY OF LABORATORY TEST DATA  
 St. Regis Railroad Relocation  
 St. Regis Paper Co.  
 Jacksonville, Florida

Boring No.	Sample No.	Depth - Ft.	Unified Soil Classification Symbol	Natural Water Content, w - %	Liquid Limit LL - %	Plastic Limit PL - %	Plasticity Index PI - %	Water Plasticity Ratio, R <sub>w</sub> - %	Specific Gravity G	Grain Size			Organic Loss On Ignition, O - %	Dry Unit Weight Y <sub>d</sub> - PCF	
										Gravel %	Sand %	Fines %			
B-2	#1	1.0 to 2.5	Pt	293									71		
B-3	#3	6.0 to 7.5	SP-SM	28								5	1		
LAW ENGINEERING TESTING CO. Jacksonville, Florida										Job No. J-3027		Table No. 1 of 1			

FIELD AND LABORATORY TEST PROCEDURES

Field Procedures

Soil Test Borings - The soil test borings were made in accordance with ASTM Designation D1586-67, "Penetration Test and Split-Barrel Sampling of Soils". The borings were initially advanced by augering. A rotary drilling process was subsequently used and bentonite drilling fluid was circulated in the bore holes to stabilize the sides and flush the cuttings. At regular intervals the drilling tools were removed and soil samples were obtained with a standard 1.4 inch I.D., 2.0 inch O.D., split-tube sampler. The sampler was first seated six inches and then driven an additional foot with blows of a 140 pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot is designated the "Penetration Resistance". The penetration resistance when properly interpreted is an index to the soil strength and density.

Representative portions of the soil samples, obtained from the sampler, were placed in glass jars and transported to our laboratory. The samples were then examined by an engineer to verify the driller's field classifications.

Probe Borings - The probe borings were advanced manually with a probe rod until refusal was encountered. The penetration depth of the probe rod into the soil was noted. Soils which can be penetrated by pushing a probe rod are usually very loose or very soft to soft in consistency. The penetration depth of the rod into the underlying soil, therefore, yields a determination of the thickness of low strength surface soils present.

#### Laboratory Procedures

Water Content - The water content is the ratio expressed as a percentage of the weight of water in a given mass of soil to the weight of the solid particles. This test was conducted in accordance with ASTM D2216-66.

Percent Fines - In this test the sample is dried and then washed over a No. 200 mesh sieve. The percentage of soil by weight passing the sieve is the percentage of fines or portion of the sample in the silt and clay size range. This test was conducted in accordance with ASTM Designation D1140-54.

Organic Loss on Ignition (Percent Organics) - The amount of organic material in a sample is determined in this



test. The sample is first dried and weighed, then ignited and reweighed. The amount of organic material is expressed as a percentage.

KEY TO SOIL CLASSIFICATION

Correlation of Penetration Resistance with  
Relative Density and Consistency

<u>Sands and Gravels</u>		<u>Silts and Clays</u>	
<u>No. of Blows, N</u>	<u>Relative Density</u>	<u>No. of Blows, N</u>	<u>Consistency</u>
0 - 4	Very Loose	0 - 2	Very Soft
5 - 10	Loose	3 - 4	Soft
11 - 20	Firm	5 - 8	Firm
21 - 30	Very Firm	9 - 15	Stiff
31 - 50	Dense	16 - 30	Very Stiff
Over 50	Very Dense	31 - 50	Hard
		Over 50	Very Hard

Particle Size Identification  
(Unified Classification System)

Boulders -	Diameter exceeds 8 inches
Cobbles -	3 to 8 inches diameter
Gravel:	Coarse - 3/4 to 3 inches diameter
	Fine - 4.76 mm to 3/4 inch diameter
Sand:	Coarse - 2.0 mm to 4.76 mm diameter
	Medium - 0.42 mm to 2.0 mm diameter
	Fine - 0.074 mm to 0.42 mm diameter
Silt and Clay:	Less than 0.07 mm (Particles cannot be seen with naked eye)

Modifiers

The modifiers provide our estimate of the amount of fines (silt or clay size particles) in the soil sample.

<u>Approximate Fines Content</u>
5% Fines 12%
12% Fines 30%
30% Fines 50%

<u>Modifiers</u>
Slightly silty or slightly clayey
Silty or clayey
Very silty or very clayey



## LAW ENGINEERING

GEOTECHNICAL, ENVIRONMENTAL  
& CONSTRUCTION MATERIALS  
CONSULTANTS

March 9, 1972

St. Regis Paper Company  
P. O. Box 18020  
Jacksonville, Florida 32229

Attention: Mr. Ronald B. Spencer

Subject: Report of Subsurface Investigation  
500,000 Gallon Demineralized Water  
Storage Tank  
St. Regis Plant  
Jacksonville, Florida  
LETCO Job No. J-1571

Gentlemen:

As authorized by your Purchase Order Number 52553-JK, dated February 8, 1972, Law Engineering Testing Company has completed a subsurface investigation at the subject site. This report describes the work performed and presents the findings together with our recommendations for foundation design and site preparation.

### FIELD INVESTIGATION

A total of two soil test borings were made at locations which we selected. The locations of these borings are shown on the attached Boring Plan. The manner in which the borings were made is outlined in the Appendix.

### SITE AND SUBSURFACE CONDITIONS

The site for the proposed storage tank is located at the St. Regis Plant in Jacksonville. It is a relatively level and

cleared area. There is a low grass ground cover. The borings were located by using a preliminary plan, St. Regis Drawing Number C-JZ-2015, dated January 14, 1972, that was furnished to us by your office. Ground surface elevations were not provided.

Initially, boring B-1 encountered a few inches of topsoil. Both of the borings then generally penetrated 10.5 to 13 feet of firm to loose fine sands. Firm to very dense fine sands then generally extend to about 45 feet. Very loose to loose fine to coarse sands next continue to about 58 feet. Very firm to very dense partially cemented and cemented calcareous silty fine sands were then penetrated to the boring termination depth of 60 feet. The attached Generalized Subsurface Profile graphically depicts these conditions. A more detailed description of the soil conditions is given in the individual Test Boring Records.

Water checks in the borings at the time of drilling indicated the groundwater to be at about 8 feet below the ground surface. No stabilized groundwater checks were made. It is noted that the groundwater level will be influenced by seasonal rainfall variations and that the stabilized groundwater levels may be slightly higher than indicated.

#### STRUCTURAL INFORMATION

We understand that the steel tank will have a diameter of 52 feet and it will be 32 feet high. The estimated weight of the tank when empty is 125 kips and the total weight when loaded will be about 4366 kips. The estimated maximum unit contact pressure is 2100 psf.

The following recommendations are based on the above structural information and the data obtained in the borings. The soil penetration data has been compared with previous correlations of penetration resistance and allowable soil bearing pressures where similar conditions exist.

#### FOUNDATION RECOMMENDATIONS

The proposed 500,000 gallon tank can be soil supported. The continuous exterior ring footing should have a minimum width of 18 inches. It is recommended that this footing bear at about 18 inches below the existing grade. An allowable soil bearing pressure in excess of 3000 psf will exist in the tank area if the requirements outlined below are achieved.

Initially, the topsoil and any vegetation at the surface should be stripped from the tank area and to a distance of 5 feet beyond the perimeter. The exposed surface should then be proof-rolled with a medium weight (4000 to 6000 lb. static weight) vibratory roller to improve the uniformity of the upper loose sands. At least, six complete coverages should be made with this towed drum roller. The required fill below the tank bottom can then be placed in lifts 8 to 12 inches thick and densified by making at least six coverages over each lift. The bottom of the footing excavation should be tightened by making at least six passes with a hand-operated vibratory sled.

A density of at least 95 percent of the Modified Proctor maximum dry density (ASTM D1557-67) should be obtained at least one foot below the bottom of the initial rolled surface and throughout any fill. This requirement should be verified by an adequate number of in-place density tests made during the compacting operation.

Groundwater should not be encountered as the water level was 8 feet below grade at the time of drilling. We recommend, however, that the groundwater level be checked immediately prior to construction.

If you have any questions regarding this report, please contact this office. We would be pleased to provide engineering inspection and testing services during construction of

St. Regis Paper Company  
Jacksonville, Florida 32229

March 9, 1972  
Page 4

this project.

Very truly yours,

LAW ENGINEERING TESTING COMPANY

Jon H. Gould, E.I.T.  
Civil Engineer

E. W. Lingo, P. E.  
Civil Engineer  
Registered, Florida 9326

JHG/EWL/f

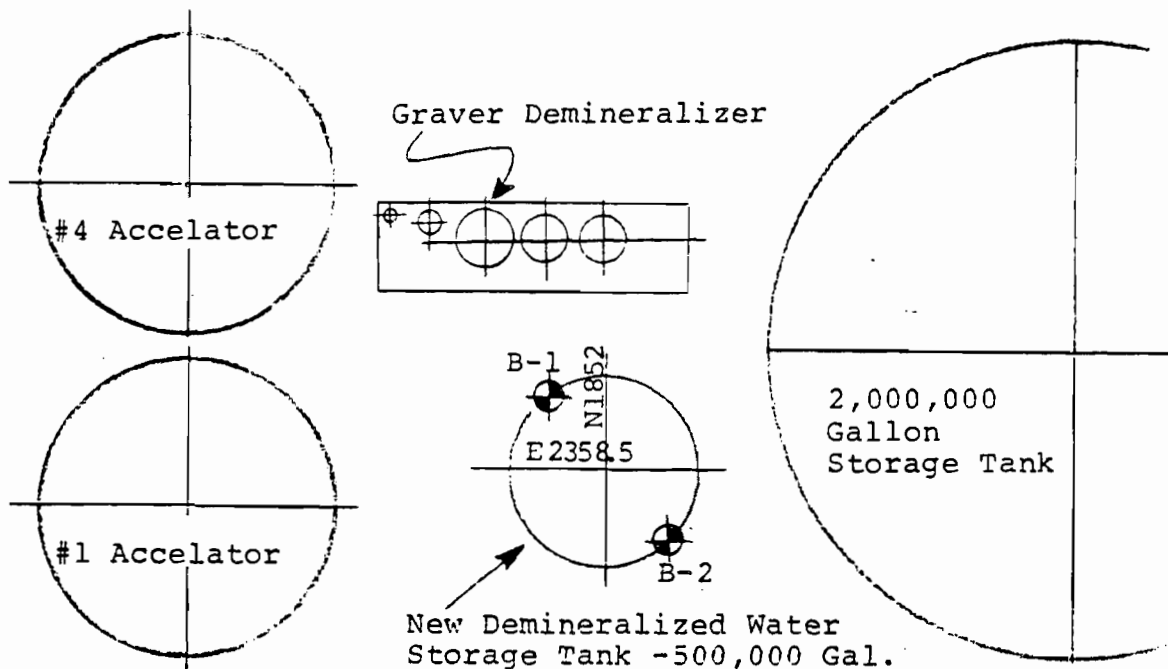
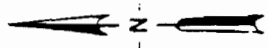
## APPENDIX

### FIELD TESTING

#### SOIL TEST BORINGS

The soil test borings were made in accordance with ASTM Designation D1586-67, Penetration Test and Split-Barrel Sampling of Soils. The test borings were initially advanced to a depth of about nine feet by augering. Below this level the borings were extended by utilizing rotary drilling techniques. Bentonite drilling fluid was circulated in the bore holes to stabilize the sides and flush the cuttings. At regular intervals the drilling tools were removed and soil samples were obtained with a standard 1.4 inch I.D., 2 inch O.D., split-tube sampler. The sampler was first seated six inches and then driven an additional foot with blows of a 140 pound hammer, falling 30 inches. The number of hammer blows required to drive the sampler the final foot is designated the "penetration resistance". The penetration resistance is an index to the soil strength and density.

Representative portions of the samples, thus obtained, were placed in glass jars and transported to our laboratory. The samples were then examined by an engineer to verify the driller's field classifications. The attached Test Boring Records graphically show the soil descriptions and penetration resistances.



⊕ Soil Test Boring

Scale: 1" = 50'

LAW ENGINEERING TESTING COMPANY

Jacksonville, Florida

LETCO Job No. J-1571

BORING PLAN

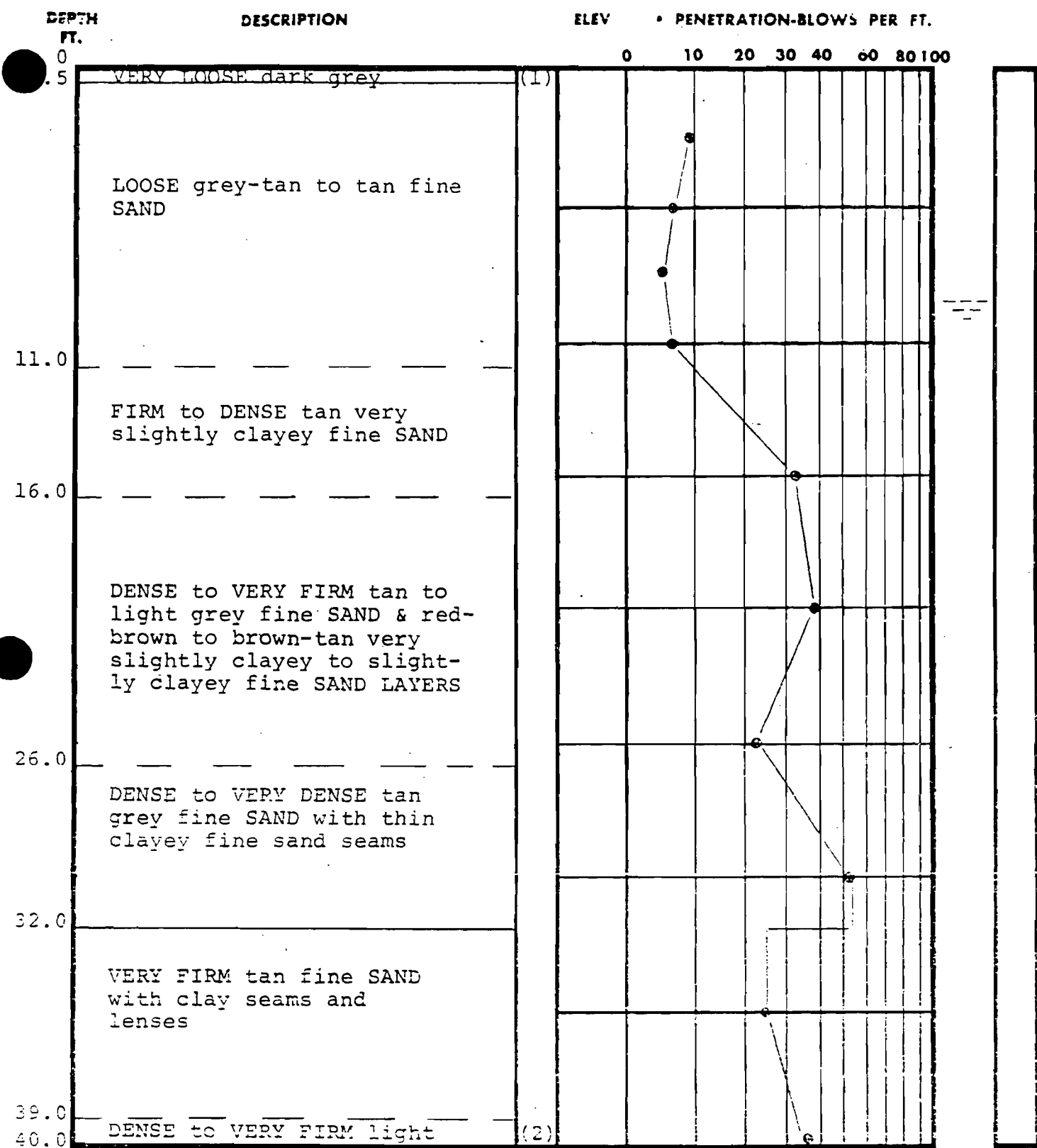
500,000 Gallon Demineralized Water

Storage Tank

St. Regis Plant

Jacksonville, Florida





(1) slightly organic slightly silty fine SAND with small grass roots (Topsoil)

### TEST BORING RECORD

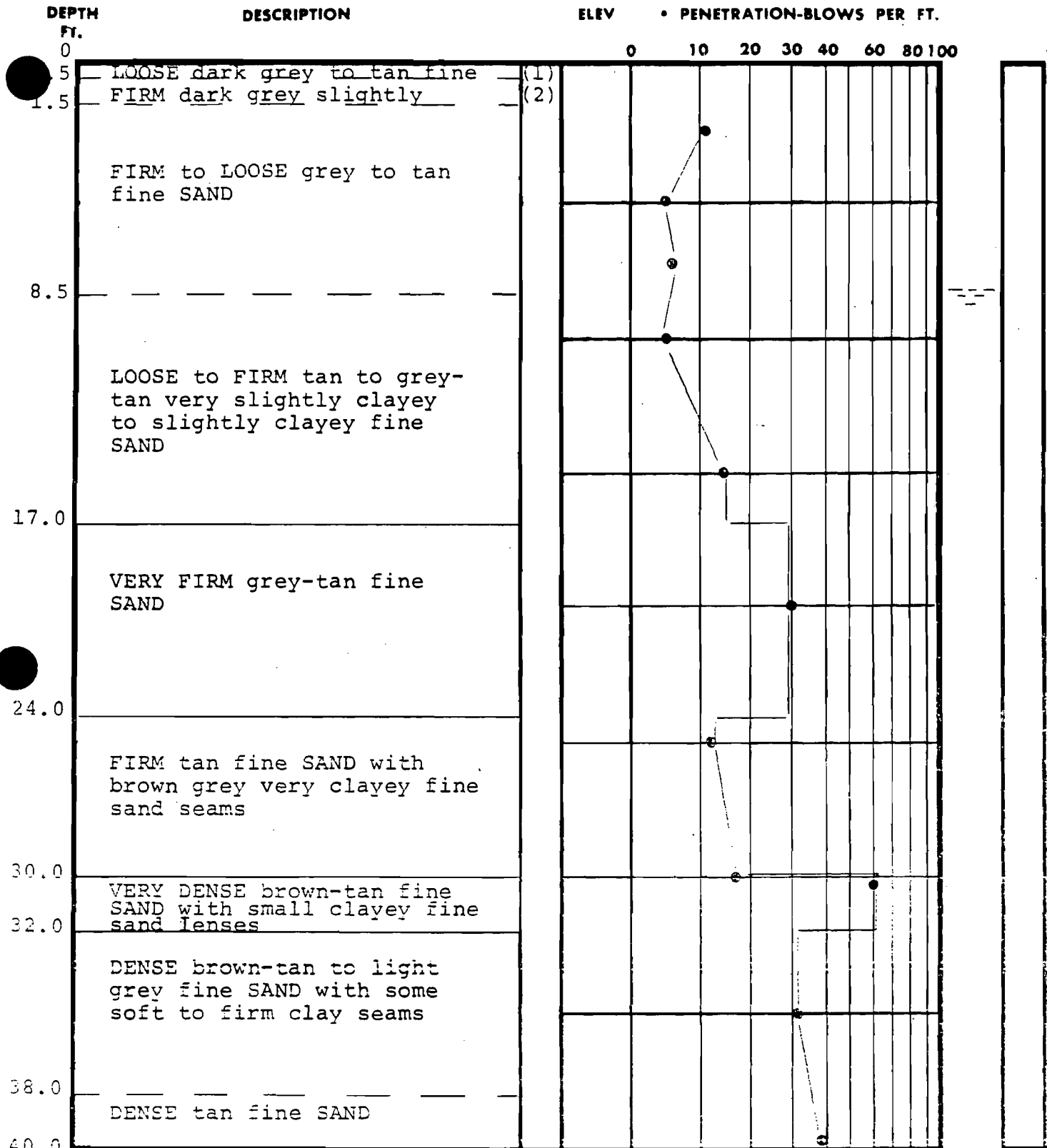
(Page 1 of 2 Pages)

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-1  
 DATE DRILLED 2/17/72  
 JOB NO. J-1571

UNDISTURBED SAMPLE  
 WATER TABLE, 24 HR.  
 WATER TABLE, 1 HR.  
 ROCK CORE RECOVERY  
 LOSS OF DRILLING WATER





(1) SAND  
(2) silty fine SAND

### TEST BORING RECORD

(Page 1 of 2 Pages)






BORING NO. B-2

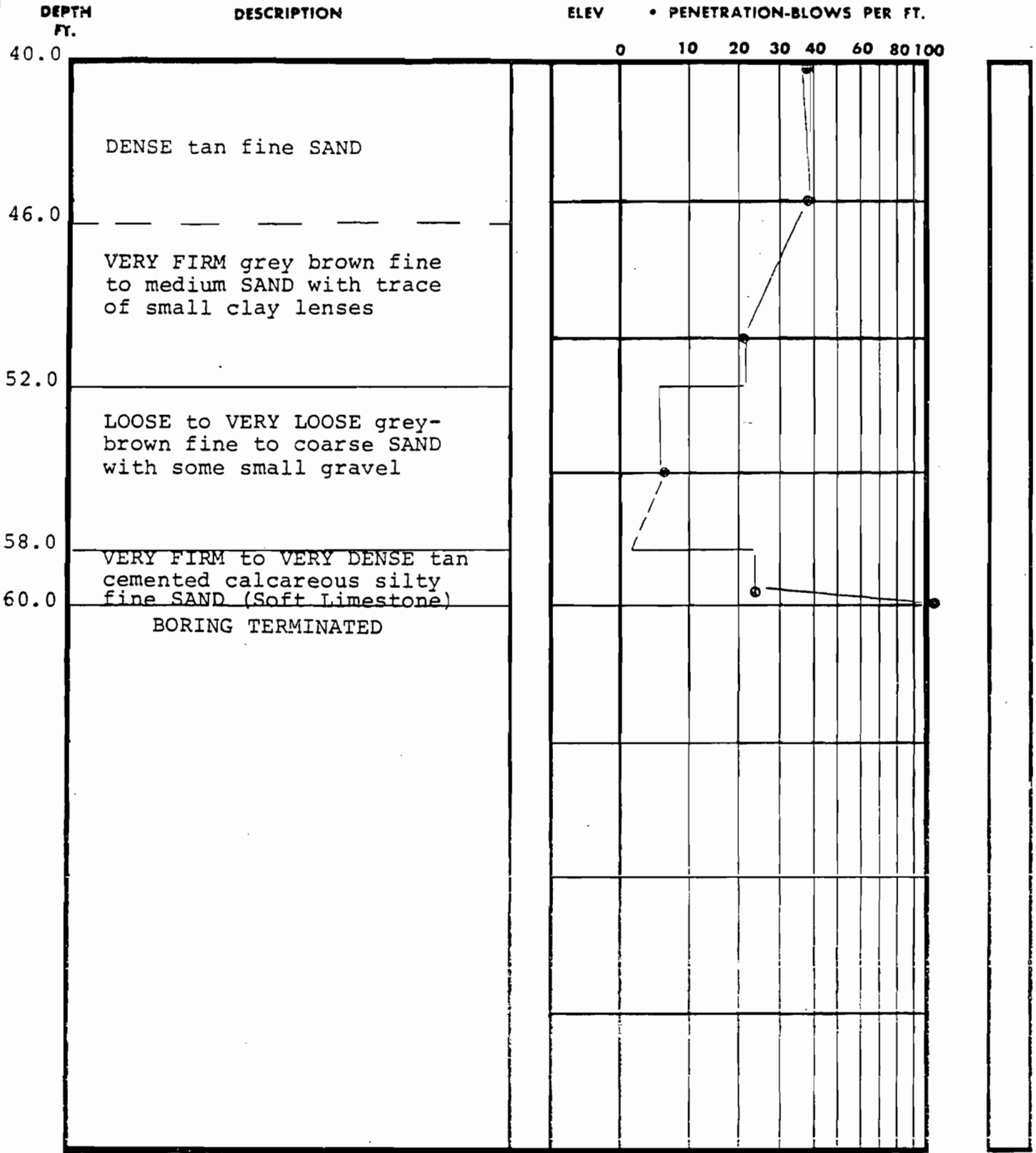
DATE DRILLED 2/17/72

JOB NO. J-1571

LAW ENGINEERING TESTING CO.

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113  
PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

-  WATER TABLE, 24 HR.
-  WATER TABLE, 1 HR.
-  UNDISTURBED SAMPLE
-  LOSS OF DRILLING WATER
-  % ROCK CORE RECOVERY



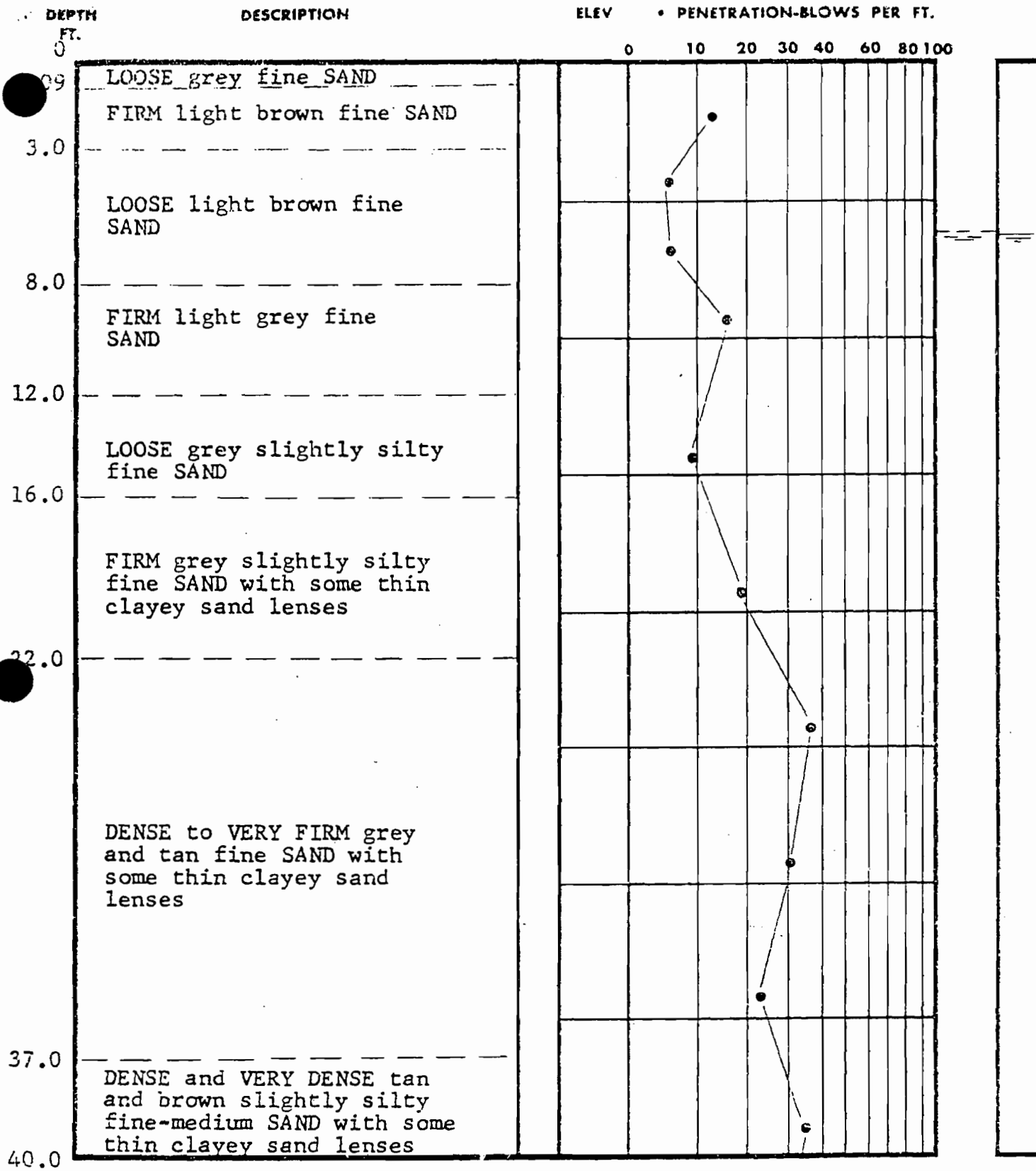
### TEST BORING RECORD

(Page 2 of 2 Pages)

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 CORE DRILLING MEETS ASTM D-2113  
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 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-2  
 DATE DRILLED 2/17/72  
 JOB NO. J-1571

- UNDISTURBED SAMPLE
- WATER TABLE, 24 HR.
- WATER TABLE, 1 HR.
- % ROCK CORE RECOVERY
- LOSS OF DRILLING WATER



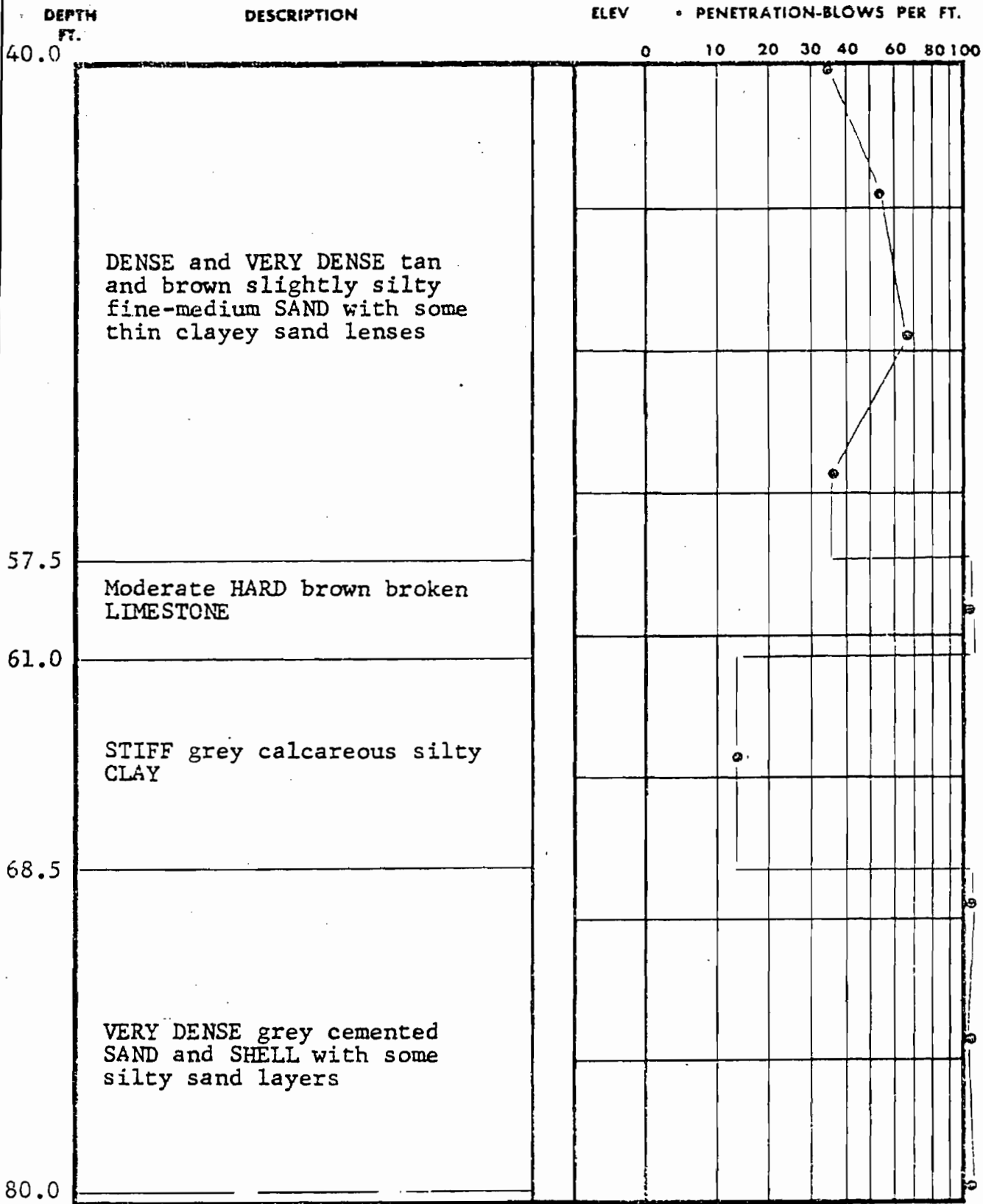
### TEST BORING RECORD

Page 1 of 2 Pages

BORING NO. B-1  
 DATE DRILLED 8/3/70  
 JOB NO. J-1371

BORING AND SAMPLING METS ASTM D-1586  
 CORE DRILLING METS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. L.D. SAMPLER 1 FT.

- UNDISTURBED SAMPLE
- WATER TABLE, 24 HR.
- WATER TABLE, 1 HR.
- % ROCK CORE RECOVERY
- LOSS OF DRILLING WATER








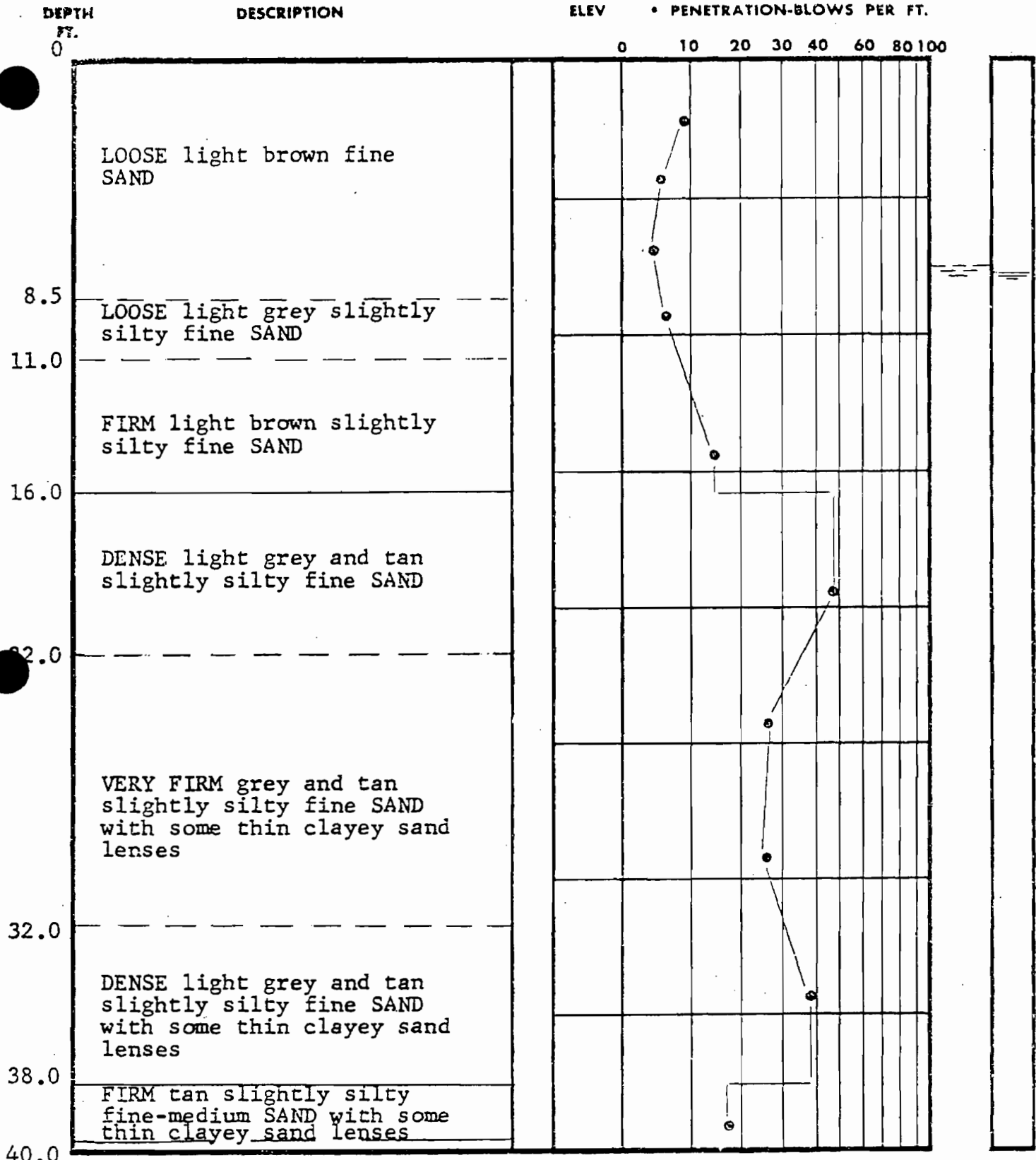
### TEST BORING RECORD

Page 2 of 2 Pages

BORING NO. B-1  
 DATE DRILLED 8/3/70  
 JOB NO. J-1371

BORING AND SAMPLING MEETS ASTM D-1584  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

 UNDISTURBED SAMPLE  
 WATER TABLE, 24 HR.  
 WATER TABLE, 1 HR.  
 % ROCK CORE RECOVERY  
 LOSS OF DRILLING WATER








BORING TERMINATED

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. LD. SAMPLER 1 FT.

BORING NO. B-2  
 DATE DRILLED 8/4/70  
 JOB NO. J-1371

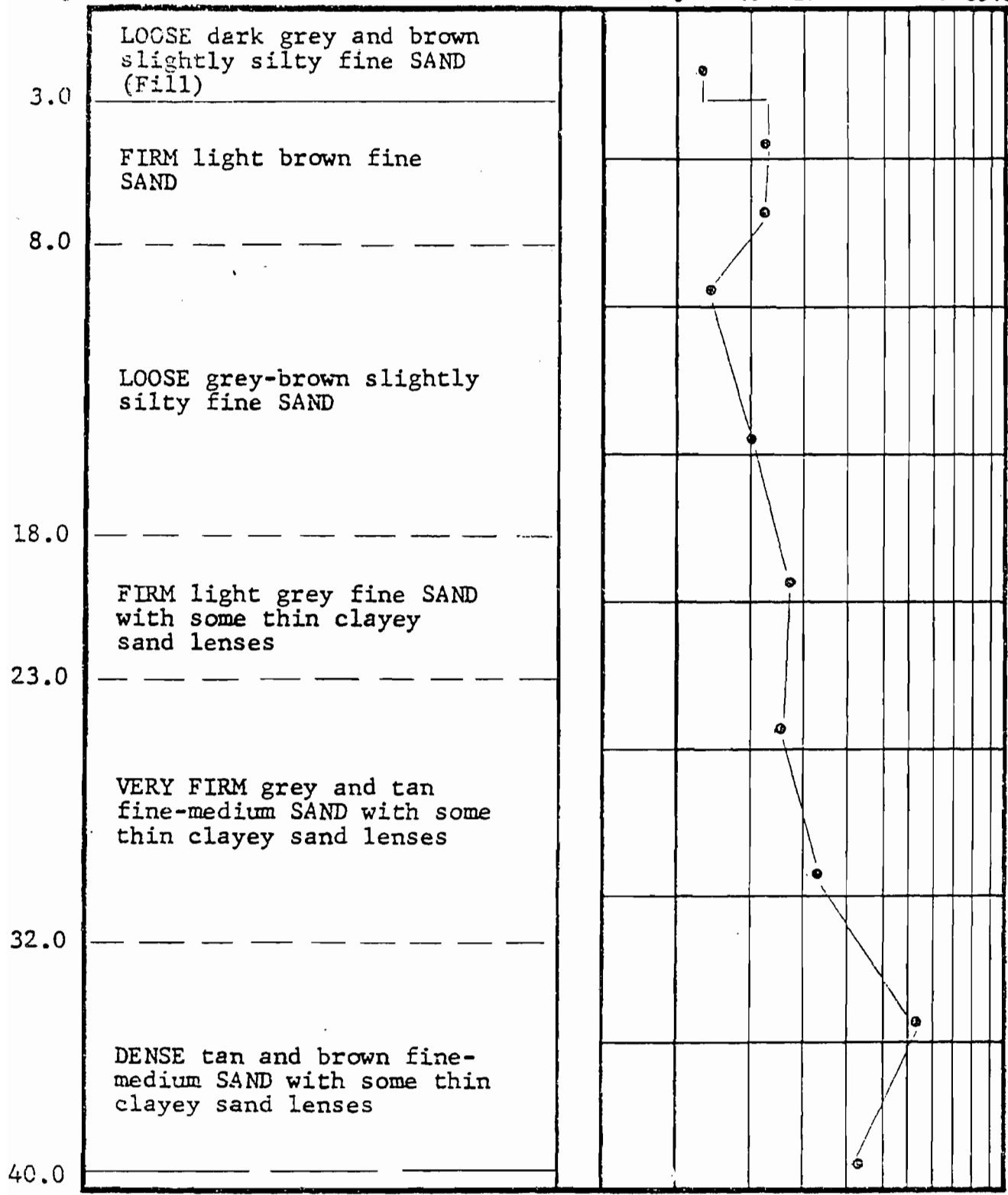
-  UNDISTURBED SAMPLE
-  WATER TABLE, 24 HR.
-  WATER TABLE, 1 HR.
-  % ROCK CORE RECOVERY
-  LOSS OF DRILLING WATER

DEPTH  
FT.

DESCRIPTION

ELEV • PENETRATION-BLOWS PER FT.

0 10 20 30 40 60 80 100



BORING TERMINATED

### TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-3  
 DATE DRILLED 8/4/70  
 JOB NO. J-1371

UNDISTURBED SAMPLE

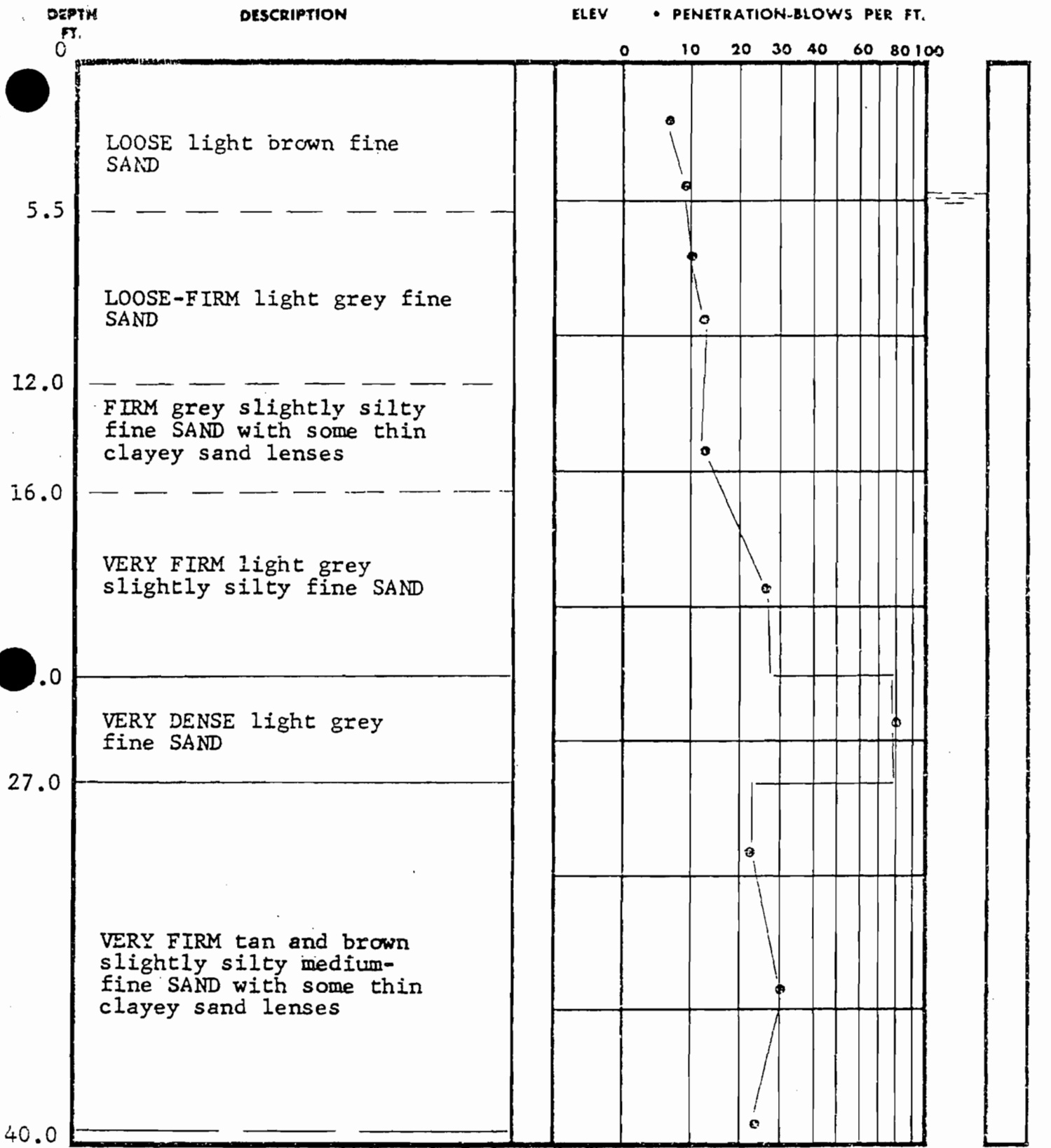
WATER TABLE, 24 HR.

WATER TABLE, 1 HR.

% ROCK CORE RECOVERY

LOSS OF DRILLING WATER





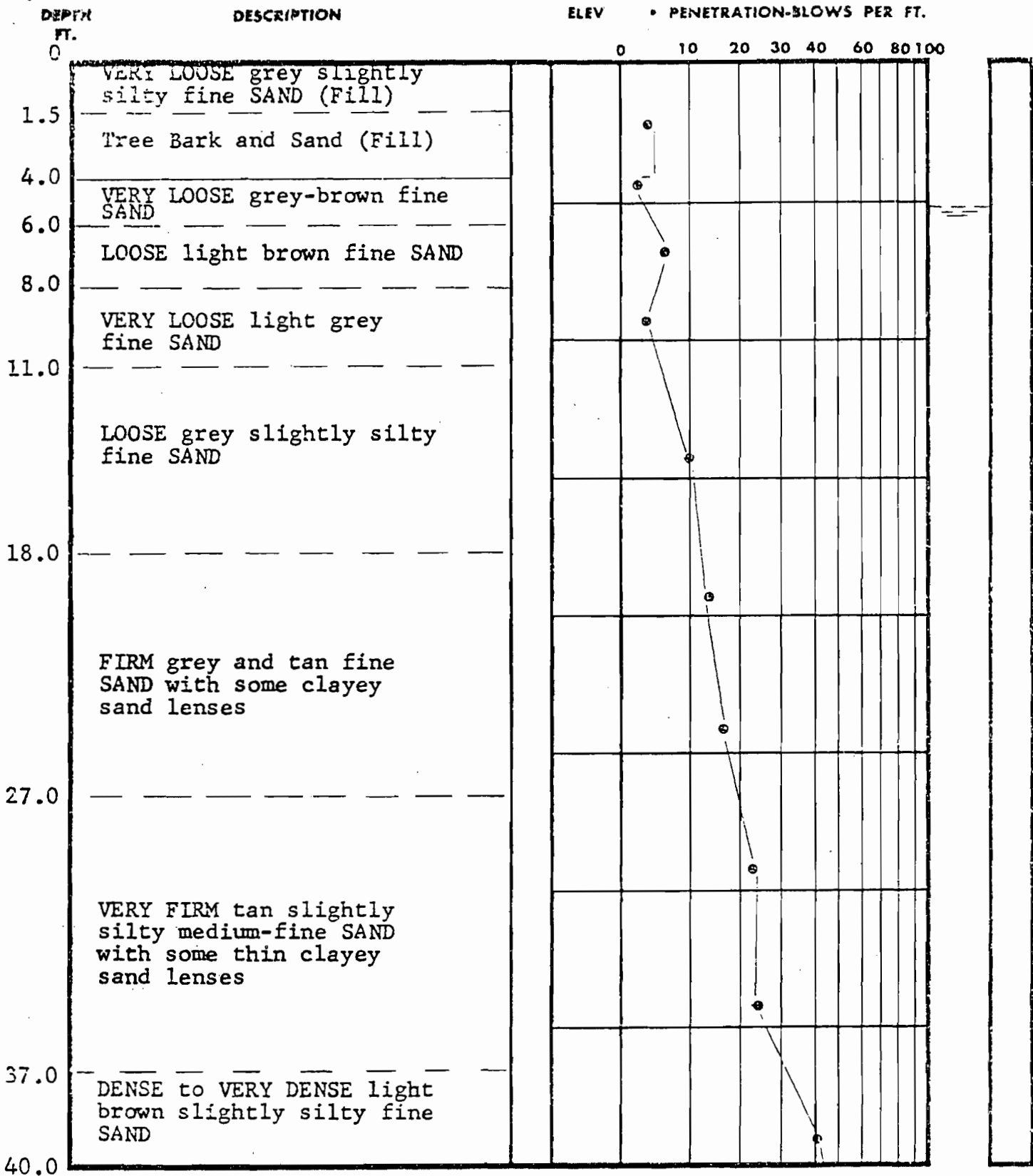
BORING TERMINATED

TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. L.D. SAMPLER 1 FT.

BORING NO. B-4  
 DATE DRILLED 8/5/70  
 JOB NO. J-1371

- UNDISTURBED SAMPLE
- WATER TABLE, 24 HR.
- WATER TABLE, 1 HR.
- LOSS OF DRILLING WATER
- % ROCK CORE RECOVERY



### TEST BORING RECORD

Page 1 of 2 Pages

BORING NO. B-5

DATE DRILLED 8/5/70

JOB NO. J-1371

BORING AND SAMPLING METS ASTM D-1584

CORE DRILLING METS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. L.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE

WATER TABLE, 24 HR.

WATER TABLE, 1 HR.

% ROCK CORE RECOVERY

LOSS OF DRILLING WATER






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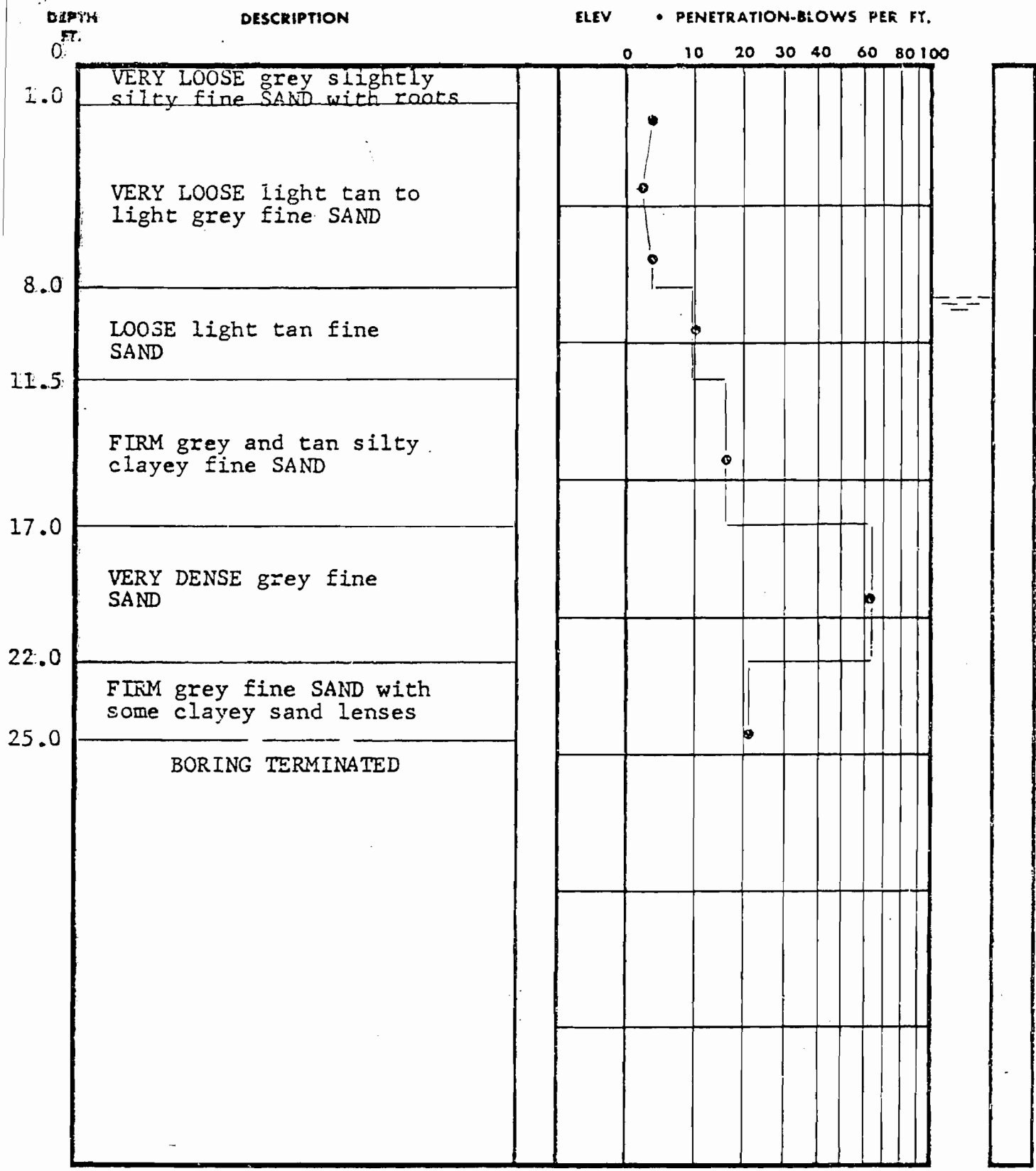
DEPTH FT.	DESCRIPTION	ELEV • PENETRATION-BLOWS PER FT.																		
		0	10	20	30	40	60	80	100											
40.0	DENSE to VERY DENSE light brown slightly silty fine SAND																			
50.0																				
	BORING TERMINATED																			

# TEST BORING RECORD

Page 2 of 2 Pages  
 BORING NO. B-5  
 DATE DRILLED 8/5/70  
 JOB NO. J-1371

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLE 1 FT.

-  WATER TABLE, 24 HR.
-  WATER TABLE, 1 HR.
-  UNDISTURBED SAMPLE
-  % ROCK CORE RECOVERY
-  LOSS OF DRILLING WATER



Location- East End of Aerated Basin.

### TEST BORING RECORD

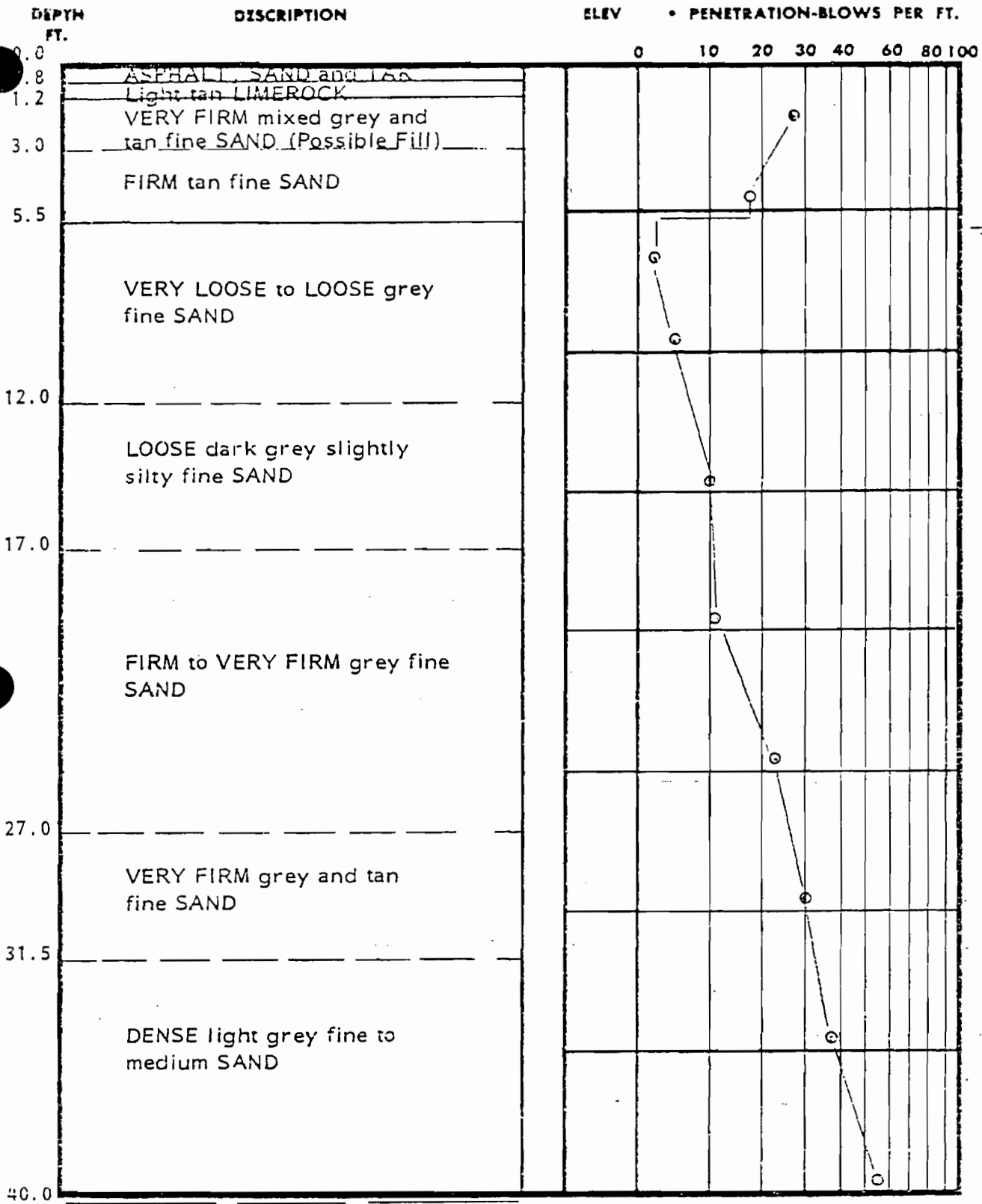
BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-6  
 DATE DRILLED 8/15/70  
 JOB NO. J-1371

- UNDISTURBED SAMPLE
- WATER TABLE, 24 HR.
- WATER TABLE, 1 HR.
- % ROCK CORE RECOVERY
- LOSS OF DRILLING WATER







### TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. L.B. SAMPLER 1 FT.

BORING NO. B-2

DATE DRILLED 4/11/77

JOB NO. J-2778

UNDISTURBED SAMPLE

WATER TABLE, 24 HR.

WATER TABLE, 1 HR.

% ROCK CORE RECOVERY

LOSS OF DRILLING WATER






DEPTH FT.	DESCRIPTION	ELEV • PENETRATION-BLOWS PER FT.						
		+14.70	10	20	30	40	60	80 100
0	VERY LOOSE dark grey silty fine SAND with wood chips (Fill)							
3.5	VERY SOFT dark grey organic fine sandy SILT	+ 9.7						
5.5	VERY LOOSE dark grey to brown silty to very slightly silty fine SAND	+ 4.7						
11.0	FIRM grey and brown fine SAND	0.3						
22.0	FIRM grey brown slightly silty fine SAND	5.3						
27.0	DENSE dark grey brown very slightly silty fine SAND	10.3						
32.0	DENSE dark grey brown fine SAND with thin silt seams	15.3						
37.0	DENSE dark grey brown fine SAND	20.3						
40.0		25.3						

### TEST BORING RECORD

Page 1 of 2 Pages

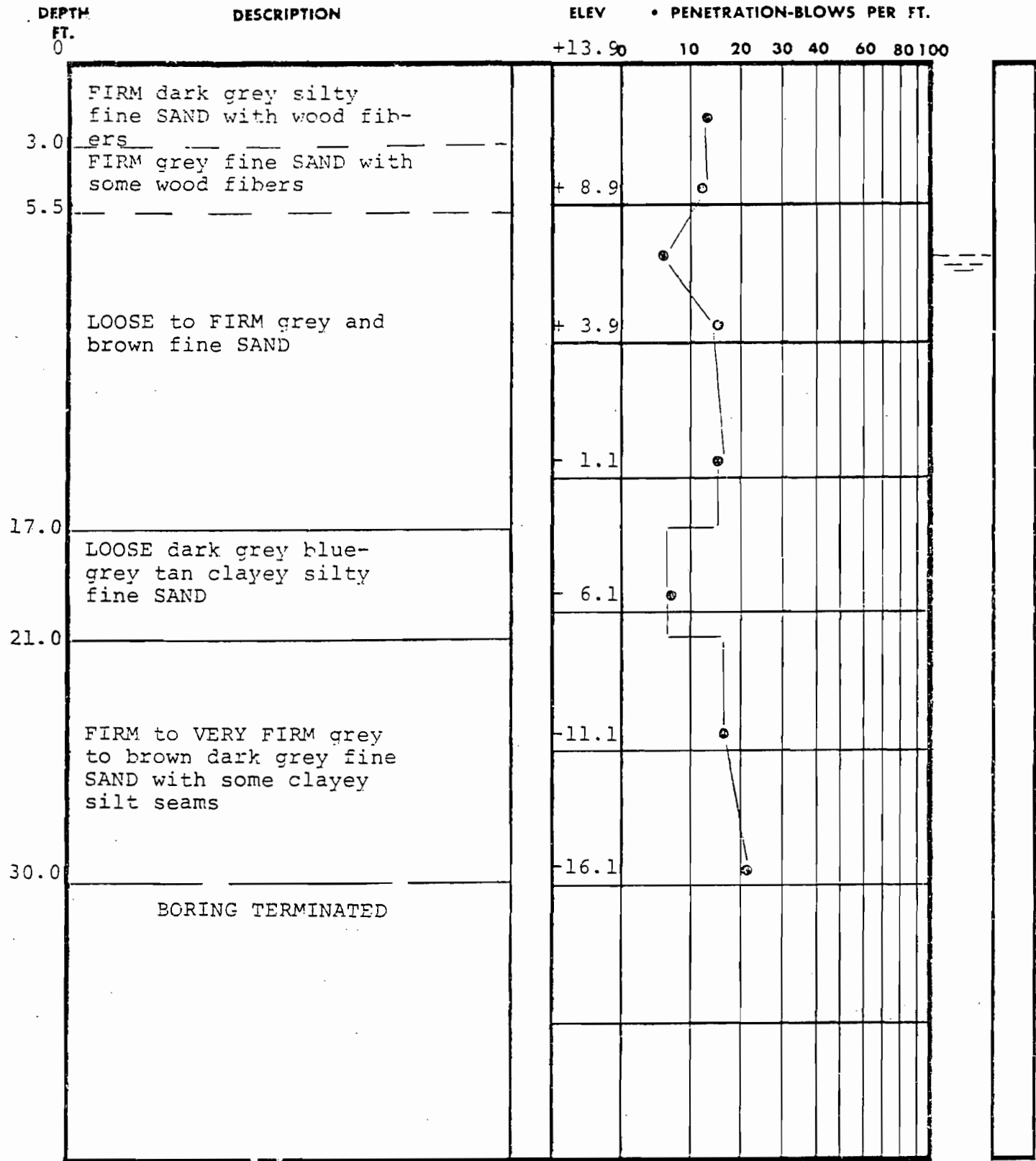
BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-4  
 DATE DRILLED 6/4/71  
 JOB NO. J-1468A

-  UNDISTURBED SAMPLE
-  WATER TABLE, 24 HR.
-  WATER TABLE, 1 HR.
-  % ROCK CORE RECOVERY
-  LOSS OF DRILLING WATER







## TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-5  
 DATE DRILLED 6/7/71  
 JOB NO. J-1468A

 UNDISTURBED SAMPLE

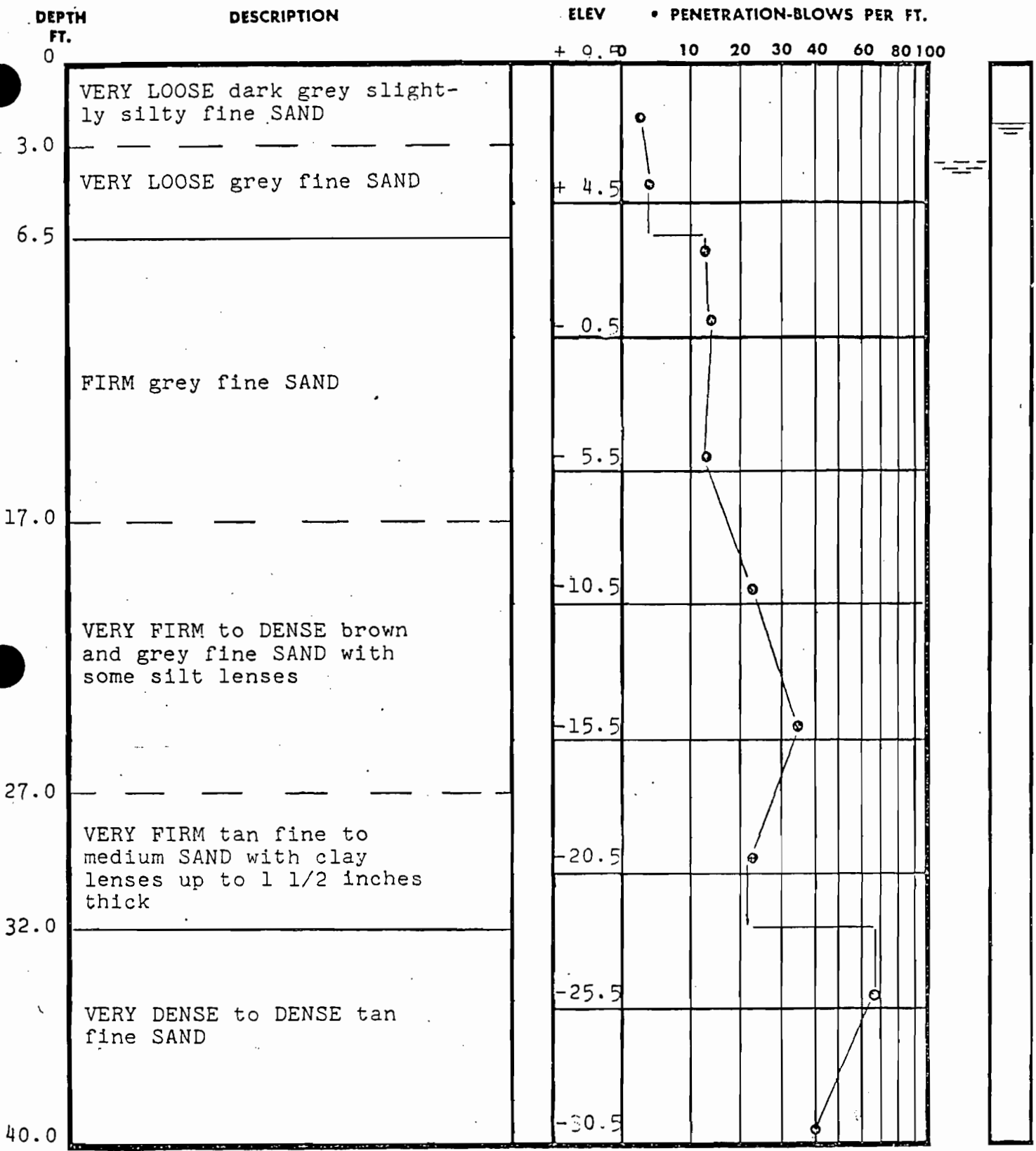
 WATER TABLE, 24 HR.

 WATER TABLE, 1 HR.

 % ROCK CORE RECOVERY

 LOSS OF DRILLING WATER

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### TEST BORING RECORD

Page 1 of 2 Pages

BORING NO. B-1  
 DATE DRILLED 4/28/71  
 JOB NO. J-1468

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. LD. SAMPLER 1 FT.

UNDISTURBED SAMPLE  
 WATER TABLE, 24 HR.  
 WATER TABLE, 1 HR.  
 LOSS OF DRILLING WATER  
 % ROCK CORE RECOVERY

DEPTH FT.	DESCRIPTION	ELEV	• PENETRATION-BLOWS PER FT.															
			10	20	30	40	60	80	100									
40.0	VERY DENSE to DENSE tan fine SAND	-30.50																
42.0	FIRM brown fine to medium SAND	-35.5																
47.0	VERY DENSE light brown fine SAND with some small clay lenses	-40.5																
50.0	BORING TERMINATED																	

**TEST BORING RECORD**

Page 2 of 2 Pages

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-1

DATE DRILLED 4/28/71

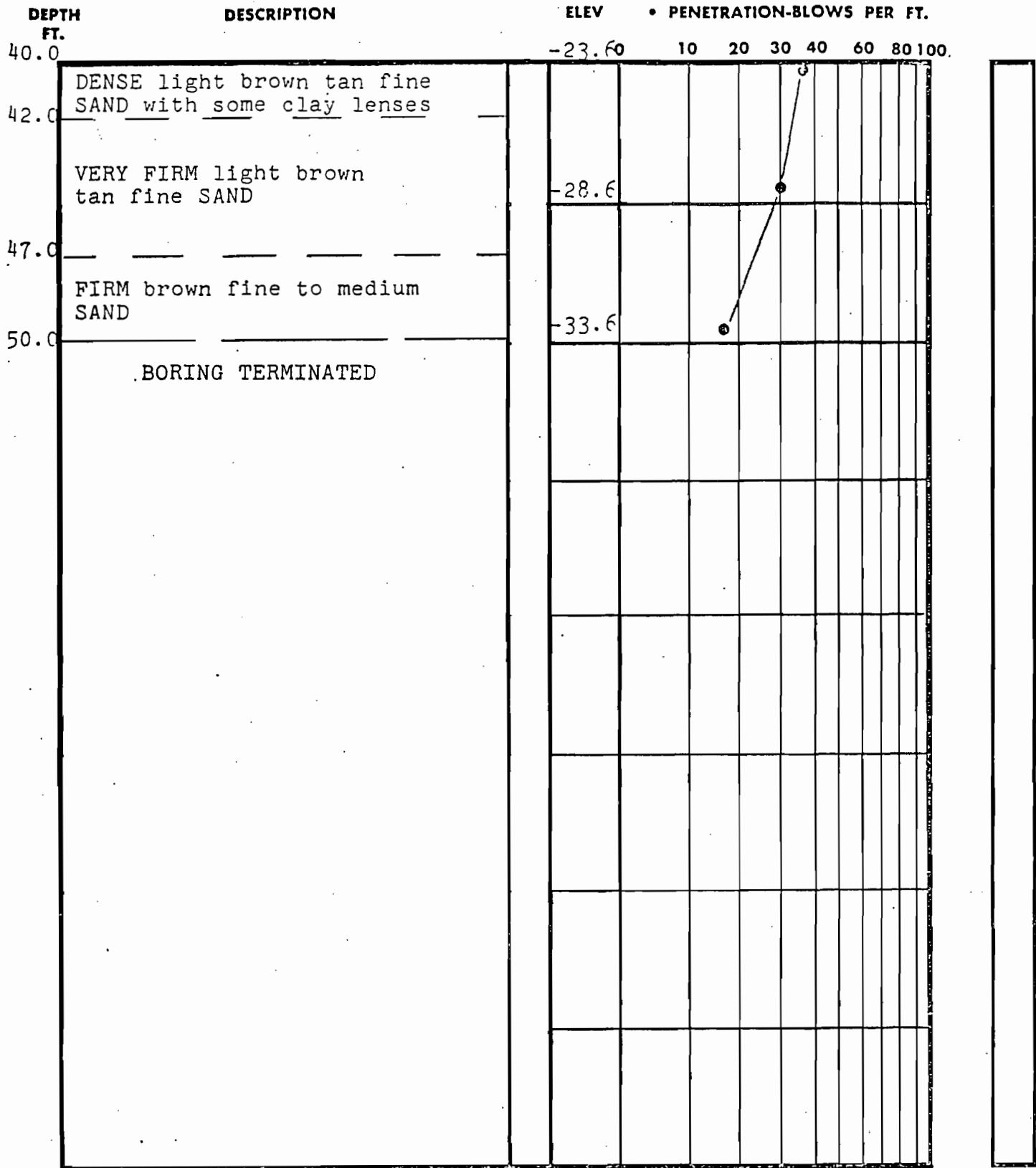
JOB NO. J-1468

 UNDISTURBED SAMPLE

 WATER TABLE, 24 HR.

 WATER TABLE, 1 HR.





**TEST BORING RECORD**

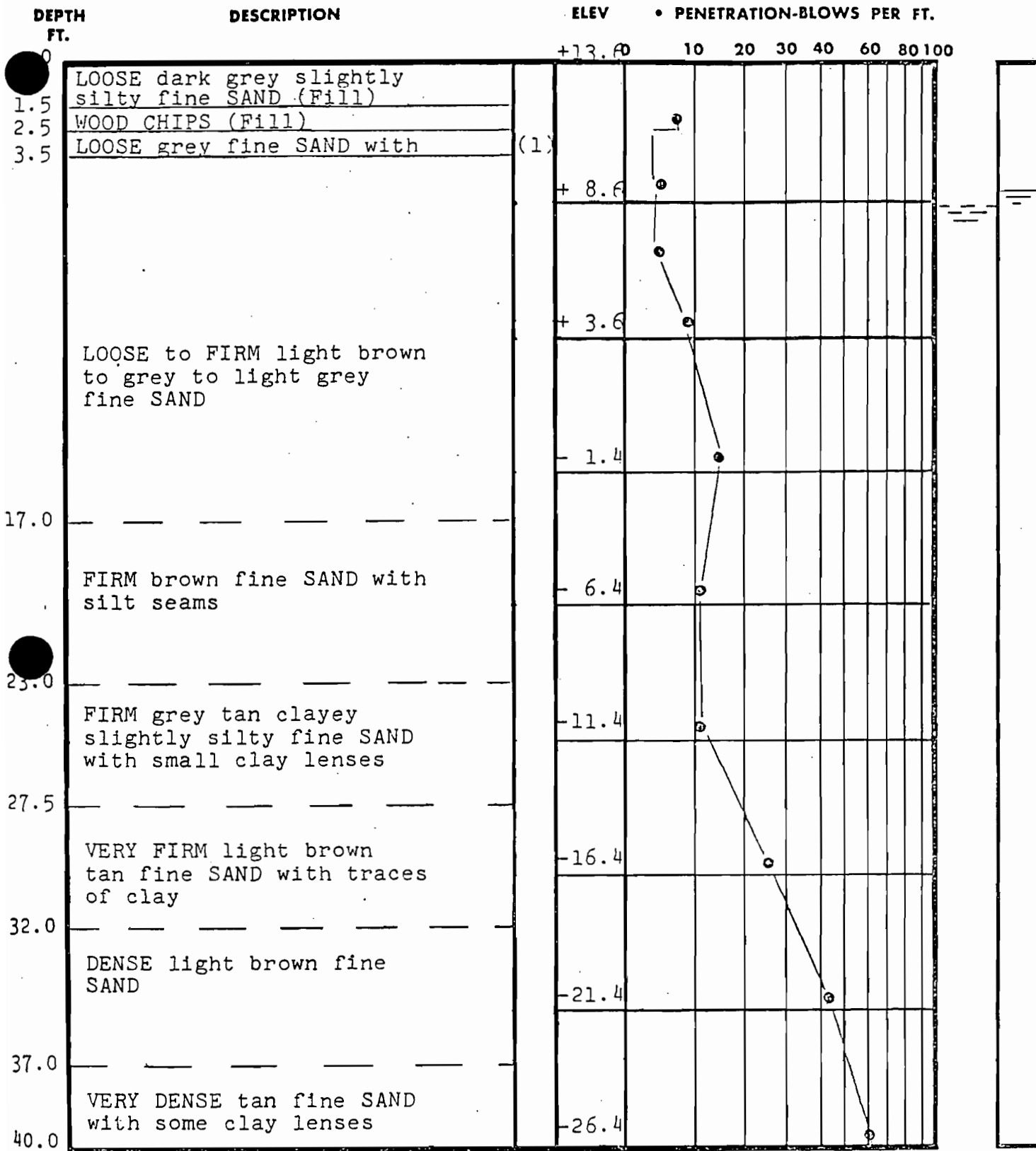
Page 2 of 2 Pages

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-2  
DATE DRILLED 4/20/71  
JOB NO. J-1468

 UNDISTURBED SAMPLE  
 WATER TABLE, 24 HR.  
 WATER TABLE, 1 HR.



## TEST BORING RECORD

Page 1 of 2 Pages

BORING NO. B-3

DATE DRILLED 4/28/71

JOB NO. J-1468

DRILLING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE

WATER TABLE, 24 HR.

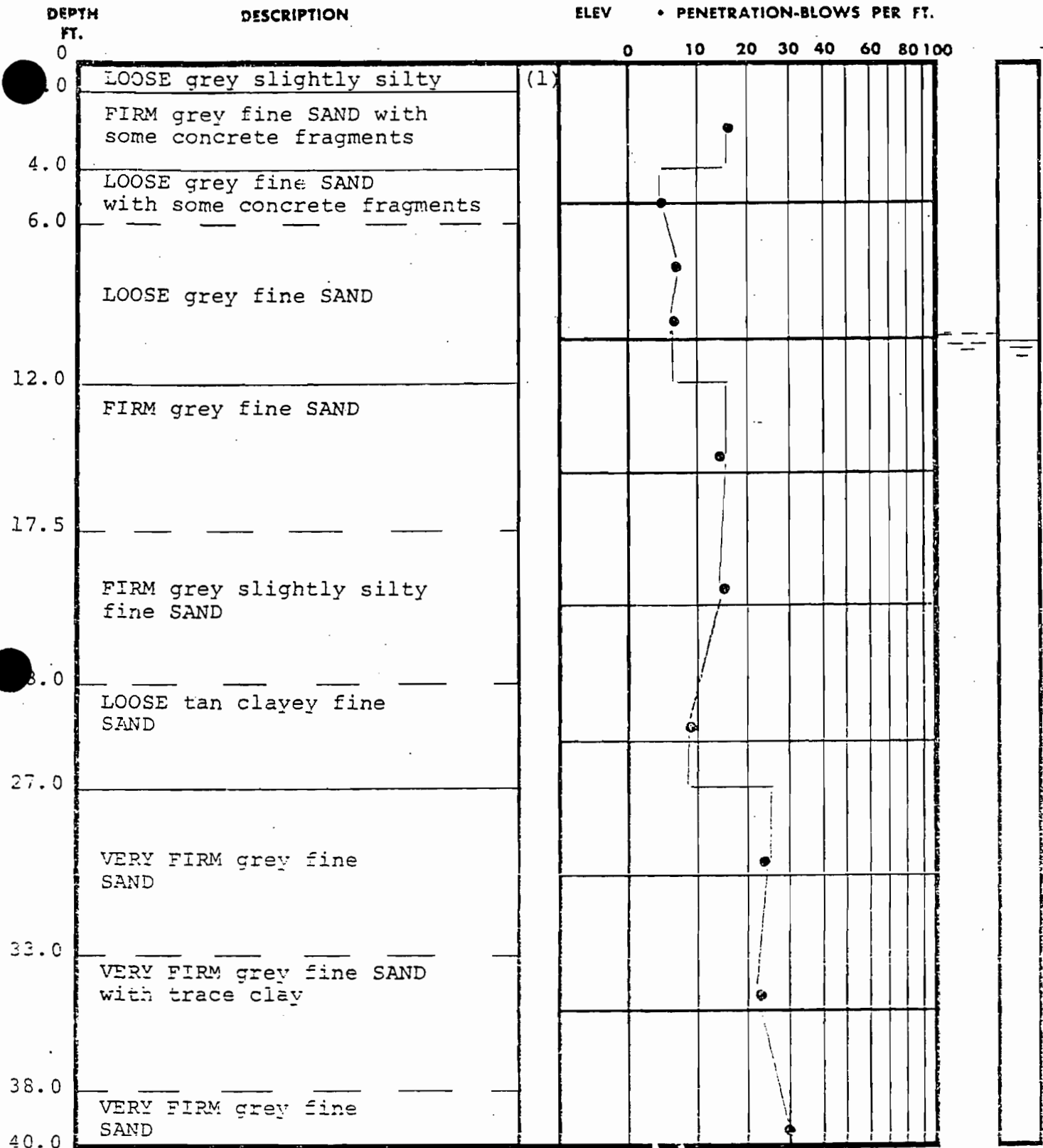
WATER TABLE, 1 HR.

% ROCK CORE RECOVERY

LOSS OF DRILLING WATER







(1) fine SAND with concrete fragments (Fill)

### TEST BORING RECORD

Page 1 of 3 Pages

BORING NO. B-1

DATE DRILLED 8/3/71

JOB NO. J-1513

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE

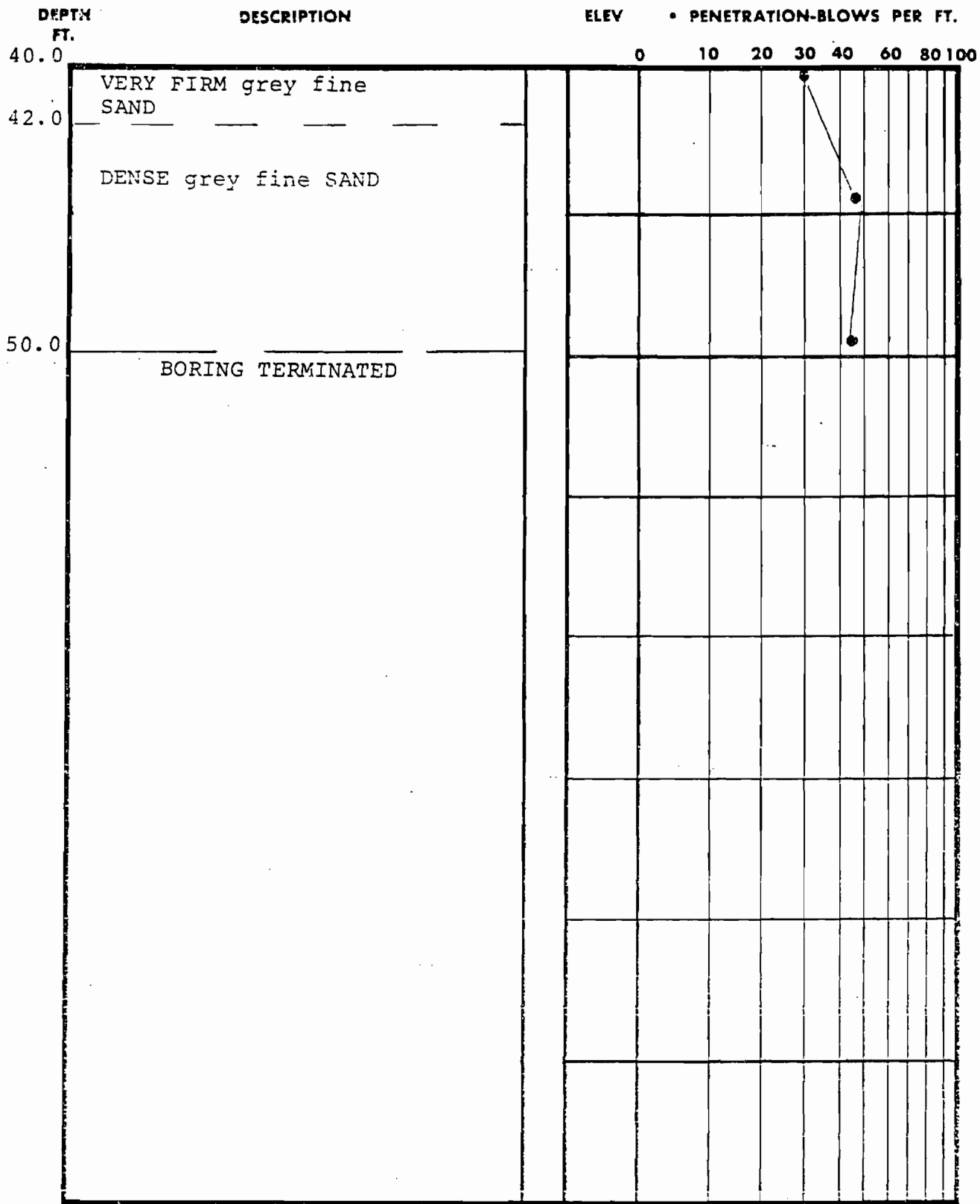
WATER TABLE, 24 HR.

WATER TABLE, 1 HR.

% ROCK CORE RECOVERY

LOSS OF DRILLING WATER

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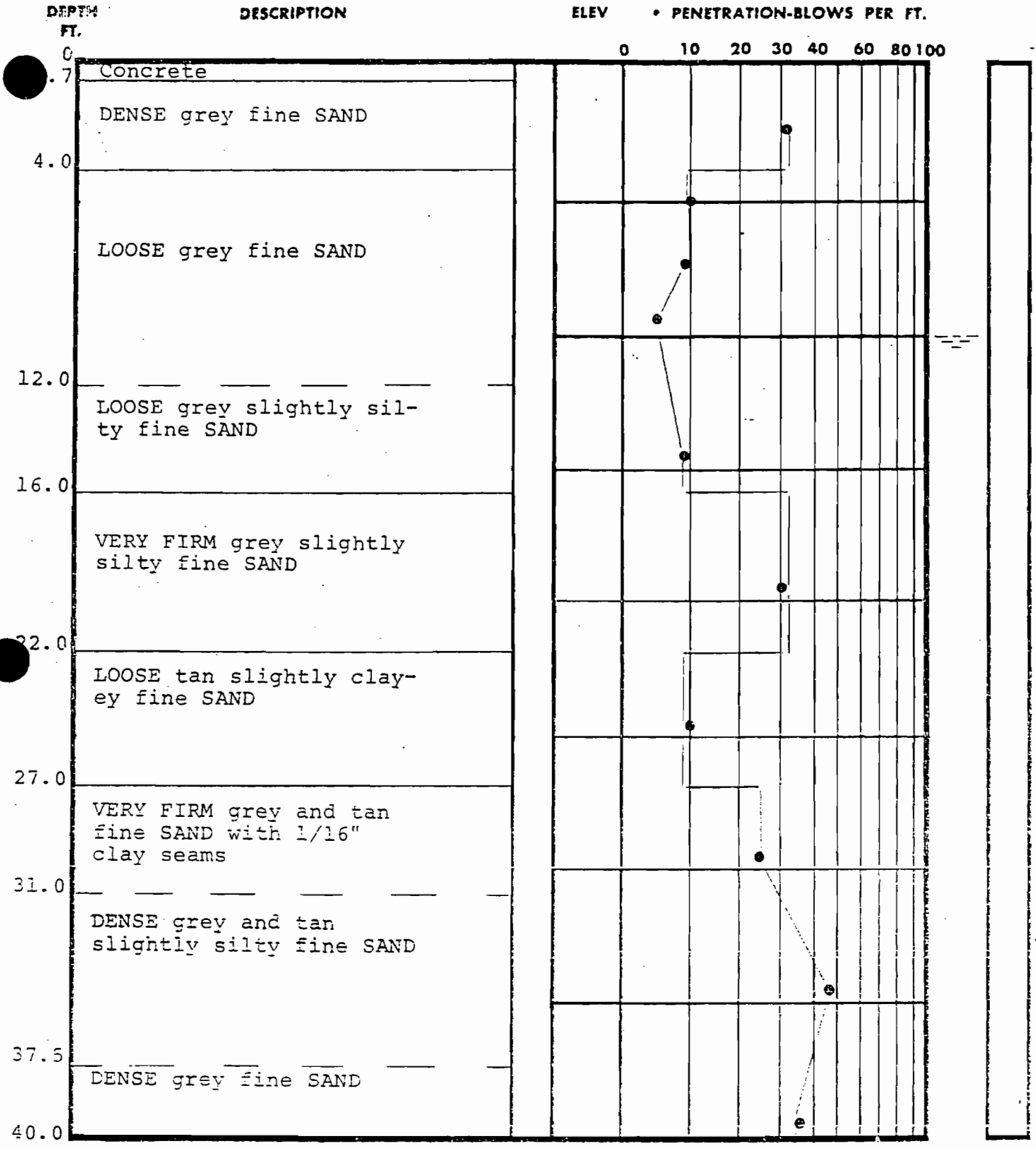
### TEST BORING RECORD

Page 2 of 2 Pages

BORING NO. B-1  
 DATE DRILLED 8/3/71  
 JOB NO. J-1513

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

-  UNDISTURBED SAMPLE
-  WATER TABLE, 24 HR.
-  WATER TABLE, 1 HR.
-  % ROCK CORE RECOVERY
-  LOSS OF DRILLING WATER



### TEST BORING RECORD

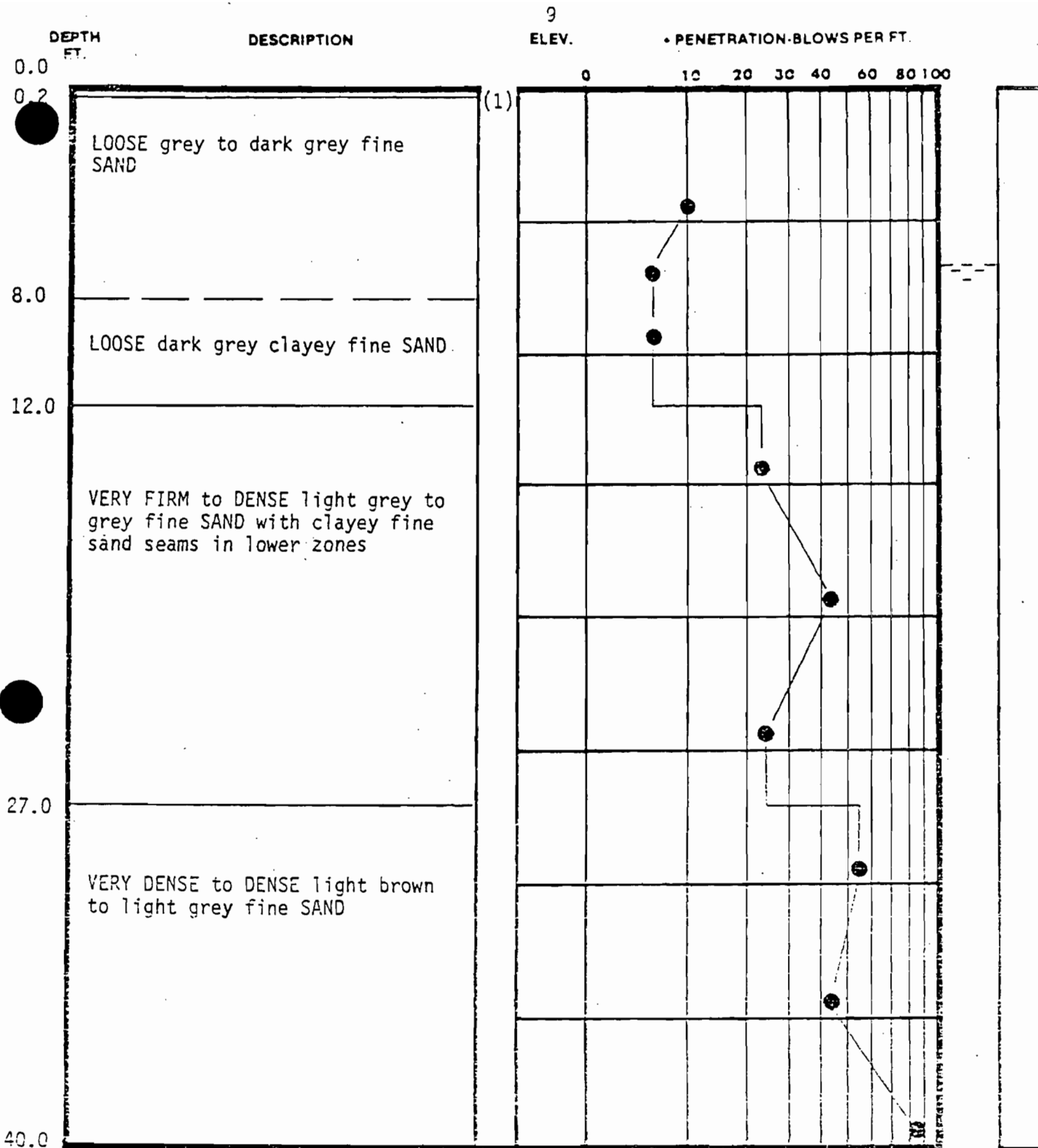
Page 1 of 2 Pages

BORING NO. E-2  
 DATE DRILLED 8/3/71  
 JOB NO. J-153

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. LD. SAMPLER 1 FT.

- WATER TABLE, 24 HR.
- WATER TABLE, 1 HR.
- UNDISTURBED SAMPLE
- LOSS OF DRILLING WATER
- 50% ROCK CORE RECOVERY





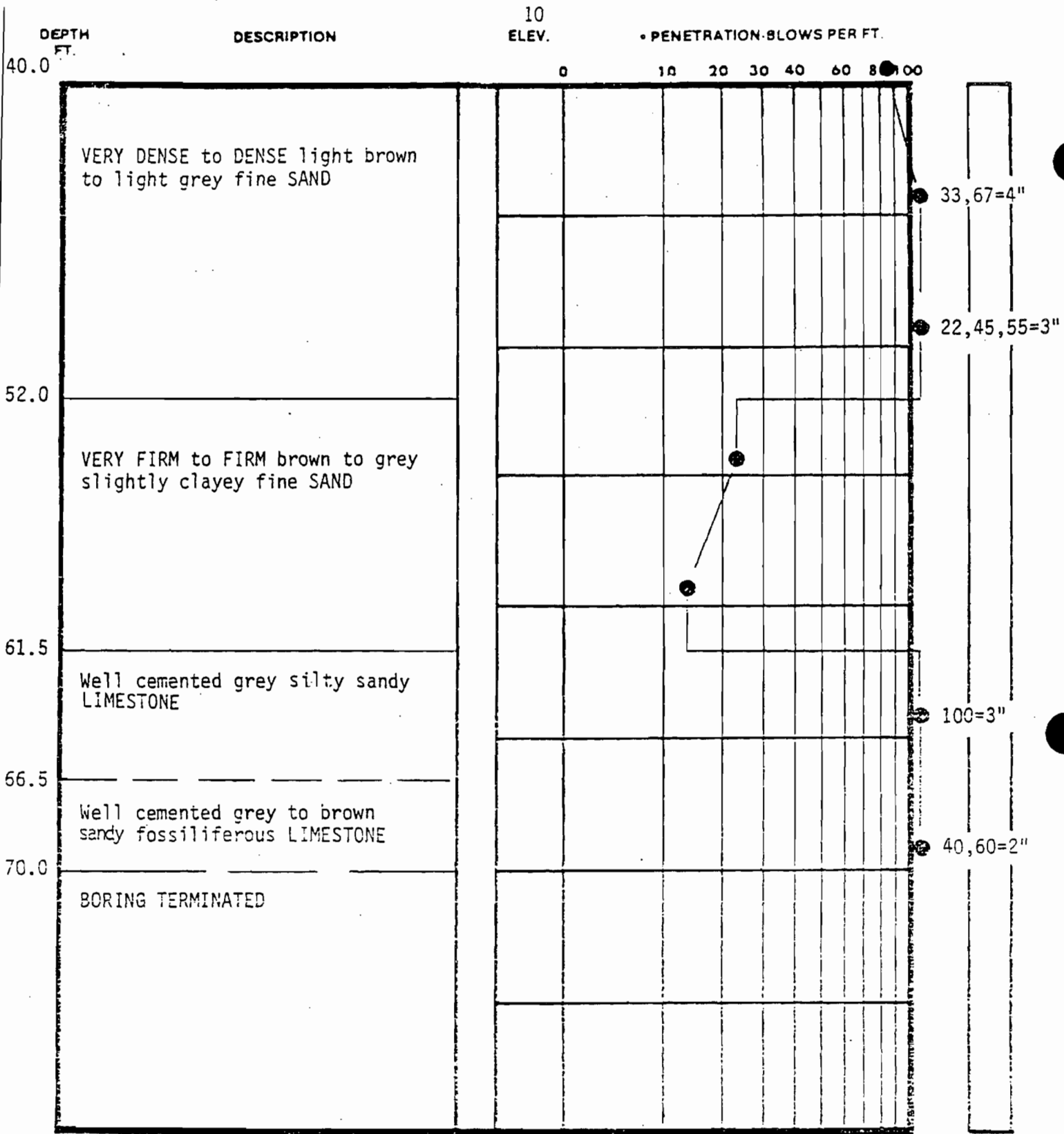
(1) ASPHALT PAVEMENT

# TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2112  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-1  
 DATE DRILLED 12-18-84  
 JOB NO. J-4570

- UNDISTURBED SAMPLE
- WATER TABLE, 24 HR.
- WATER TABLE AT TIME OF DRILLING
- % ROCK CORE RECOVERY
- LOSS OF DRILLING WATER



# TEST BORING RECORD

BORING AND SAMPLING MEETS ASTM D-1586  
 CORE DRILLING MEETS ASTM D-2113  
 PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
 FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. B-1  
 DATE DRILLED 12-16-84  
 JOB NO. J-4570

-  WATER TABLE, 24 HR.
-  WATER TABLE AT TIME OF DRILLING
-  UNDISTURBED SAMPLE
-  LOSS OF DRILLING WATER
-  % ROCK CORE RECOVERY

12901.01/SAPTOC.AES/BAI/083088

APPENDIX B  
DRILLING LOGS OF SPOIL PILES

**Environmental Resources Management**

**Drilling Log**

Project AES Owner NA  
 Location North Lime Pile W.O. Number 12902-01  
 Well Number NA Total Depth 26' Diameter \_\_\_\_\_  
 Surface Elevation NA Water Level: Initial 23' 24-hrs. NA  
 Screen: Dia. NA Length NA Slot Size NA  
 Casing: Dia. NA Length NA Type NA  
 Drilling Company A TEC Drilling Method Hollow Stem  
 Driller LARRY GARRISON Log By MARK HAMPTON Date Drilled 7/6/88

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
1				0-2' light gray lime mud, dry (24" recovery)
2				2-4' light gray to green gray lime mud, dry, (24" recovery)
3				
4				4-6' light gray lime mud, dry (24" recovery)
5				6-8' light gray lime mud, moist (24" recovery)
6				8-10' light gray to green and gray to light brown lime mud, moist, contact with green mud at about 9', contact with light brown mud at 9.5' (24" recovery)
7				
8				
9				
10				10-12' light gray lime mud, moist, (24" recovery)
11				12-14' as above (24" recovery)
12				14-16' as above (24" recovery)
13				16-18' light gray lime mud, white lens at 17' moist, soft (24" recovery)
14				
15				18-20' light gray lime mud to 19', Brown fine sand beginning 19', moist (24" recovery)
16				
17				20-22' TAN fine sand, dense, moist
18				22-24' light brown fine sand, saturated, dense
19				24-26' TAN fine sand, saturated, dense
20				
21				
22				
23				
24				
25				
26	BOB			



**Environmental Resources Management**

**Drilling Log**

Project AES Owner NA  
 Location South Lime Pile W.O. Number 12902-01  
 Well Number NA Total Depth 16' Diameter NA  
 Surface Elevation NA Water Level: Initial 10' 24-hrs. NA  
 Screen: Dia. NA Length NA Slot Size NA  
 Casing: Dia. NA Length NA Type NA  
 Drilling Company ATEC Drilling Method Hollow stem  
 Driller LARRY GARRISON Log By MARK HAMPTON Date Drilled 7/6/88

Sketch Map

Notes

Depth (Feet)	Graphic Log	Well Construction	Sample Number	Description/Soil Classification (Color, Texture, Structures)
0				
1				0-2' medium gray lime mud, dry (14" recovery)
2				2-4' gray lime mud to 2.5', Black mud with gray stringers, soft, saturated (24" recovery)
3				
4				4-6' As above with white to light gray lenses, white lens (2") at 5', saturated, soft (8" recovery)
5				
6				6-8' wood chips from 6' to 7', rods dropped from 7' to 8', possible void (12" recovery)
7				
8				8-10' DARK BROWN sand, saturated, (8" recovery)
9				10-12' BROWN sand, clean, saturated (6" recovery)
10				12-14' BROWN sand, saturated
11				14-16' BROWN to gray sand, saturated
12				
13				
14				
15				
16	EOB			

10.11 GROUND WATER QUALITY DATA

100488

10-80

GROUND-WATER MONITORING PLAN

JACKSONVILLE KRAFT PAPER  
COMPANY MILL

FOR

ST. REGIS CORPORATION

JULY 1983

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1.0 Objectives	1
2.0 Site Description	2
3.0 Hydrogeologic Data	7
4.0 Data Analysis	15
5.0 Findings	20
6.0 Monitoring Plan	22
APPENDIX	

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2	Waste Sites and Water Supply Wells	4
3	Generalized Hydrogeologic Column of Surficial Aquifer	8
4	Ground-Water Monitoring Well Locations	10
5	Ground-Water Contours	16
6	Conceptual View of Ground-Water Flow Lines	17

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2	Summary of 1972 - 1975 Periodic Monitoring	11
3	Summary of 1972 - 1975 Laboratory Results	13
4	Results of 1983 Monitoring Program	14

## 1.0 OBJECTIVES

Chapter 17-4.245(6)(B)E, FAC, requires existing pulp and paper facilities to submit a ground-water monitoring plan by August 1983. The following report, which describes the Mill and its waste facilities and analyzes the effects of the waste facilities on the contiguous ground and surface water, is submitted as the Jacksonville Kraft Paper Company's ground-water monitoring plan.

## 2.0 SITE DESCRIPTION

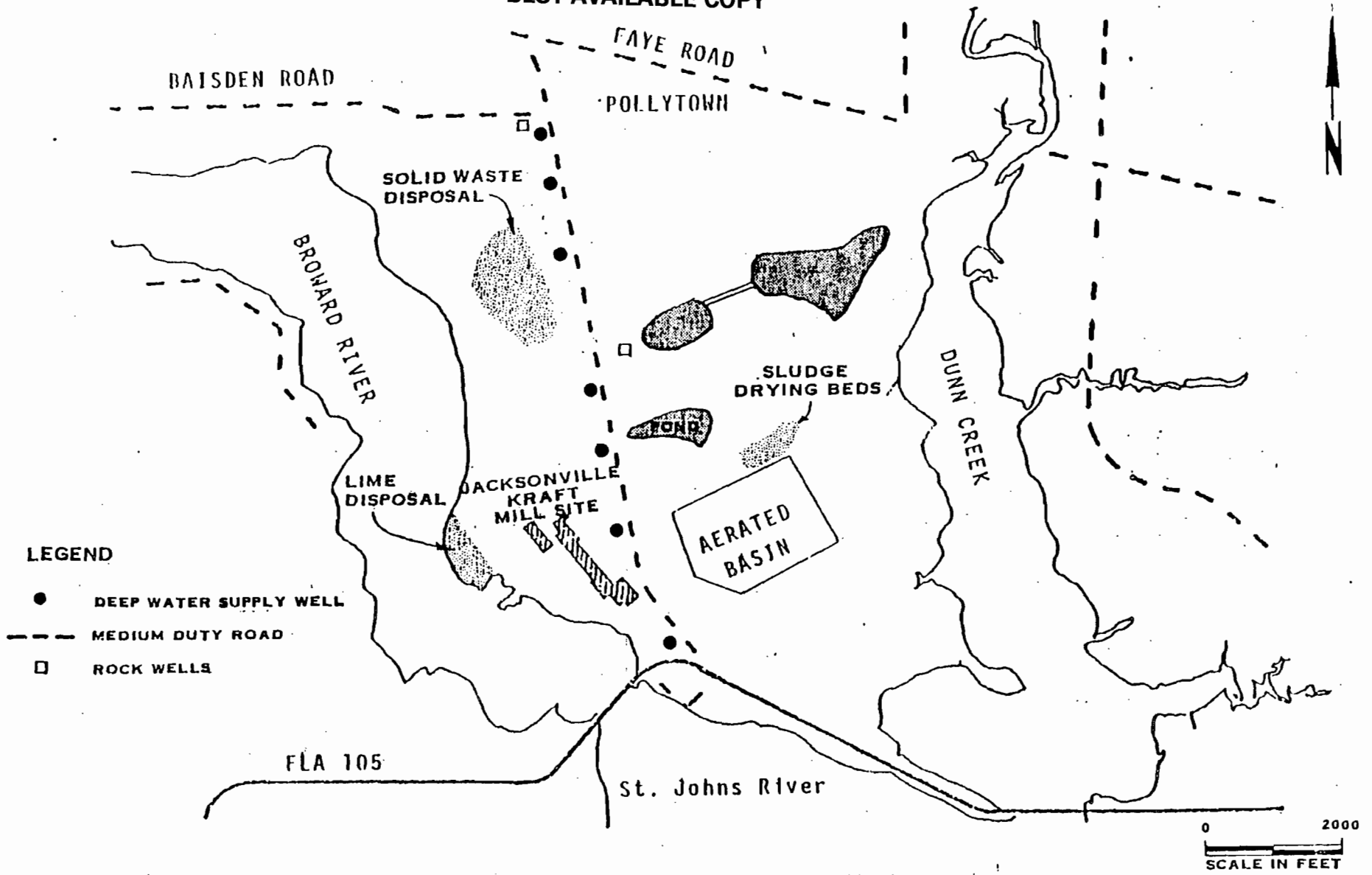
The Jacksonville Kraft Paper Company, Inc. Mill (formerly the St. Regis Corporation Mill) is located on the St. Johns River in north Jacksonville, Florida. The property, shown in Figure 1, is bounded on the north by Kraft Road, Eastport Gardens, Roberts Subdivision, and Faye Road; on the east by Dunn Creek; on the south by the St. Johns River; and on the west by the Broward River.

The plant complex consists of the mill site, several natural ponds, a waste treatment pond and several disposal areas as shown in Figure 2. The Mill was constructed in two phases, the first phase was completed in about 1953 and the second phase was completed in about 1956. In 1972 the Mill installed facilities to treat the wastewater stream prior to discharge into the St. Johns River.

The waste sites on the Mill property, as shown in Figure 2, include lime recovery ponds, an aeration basin, sludge drying beds and a solid waste disposal area. The wastewaters from the production processes are first given primary treatment to remove solids. The process wastewater passes through a bar screen, grit chamber and then a clarifier before final treatment in the aeration basin. The wastewater from the causticizing area is first discharged to the lime recovery ponds where the water is decanted. From the lime ponds it is discharged to the aeration basin. The aeration basin provides additional sedimentation and biotreatment prior to discharge to the St. Johns River. The



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GROUNDWATER PERMITTING STUDY  
FOR  
ST. REGIS CORPORATION



LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

WASTE SITES AND WATER  
SUPPLY WELLS

JOB NO. NR3297

FIGURE 2



current NPDES permit (Table 1) authorizes the Jacksonville Kraft Paper Company Mill to continuously discharge daily averages of Total Suspended Solids (TSS) and BOD<sub>5</sub> of 13,000 and 8,350 lbs/day, respectively, with daily maximum BOD<sub>5</sub> and TSS of 17,068 and 36,576 lbs/day, respectively.

The solid waste disposal area receives about 50 - 60 tons of waste each day. The solid waste is predominantly sludge from the primary clarifiers (about 25 tons/day) and the lime recovery ponds (about 25 tons/day). In addition dried sludge from the aeration pond, trash (wood, paper, etc.) from the plant (about 1 ton/day), and waste (primarily sand) from the ash silo (about 10 tons/day) are taken to the disposal area. This solid waste is either inert or has similar chemical characteristics as the effluent from the aeration basin. Since the disposal area does not intersect the water table, any leachate is due to rainwater and sludge dewatering during drying.

The only known water supply wells in the vicinity of the waste sites are located on Jacksonville Kraft Paper Company Mill property. These wells include 7 deep (approximately 1400 feet) wells to provide process water to the mill and two approximately 80 feet deep rock wells which supply water to St. Regis Woodlands Garage and to the surrounding facilities. The locations of the water supply wells are shown in Figure 2.

2. During the period beginning on the effective date and lasting through March 31, 1981, the permittee is authorized to discharge from outfall(s) serial number(s) 001 - process wastewater.

Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>	
	kg/day (lbs/day)		Measurement Frequency	Sample Type
	Daily Average	Daily Maximum		
Flow—m <sup>3</sup> /Day (MGD)	_____	_____	_____	Continuous
BOD <sub>5</sub>	3788 (8350)	7742 (17068)	Daily	Composite
Total Suspended Solids	5897 (13,000)	16,591 (36,576)	Daily	Composite

The pH shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored by continuous recorder.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

at the nearest accessible point after final treatment but prior to actual discharge or mixing with the receiving waters.

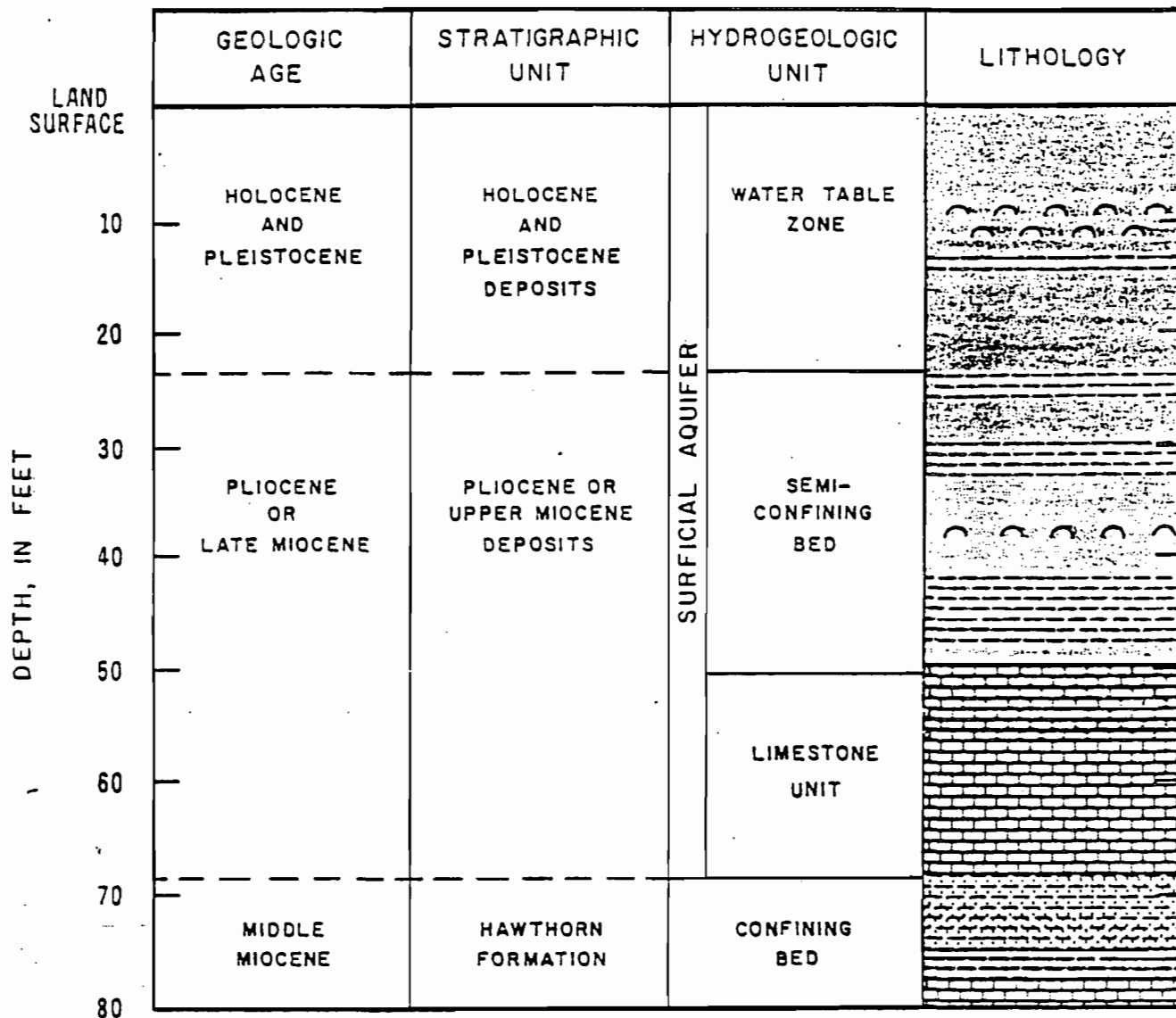
### 3.0 HYDROGEOLOGIC DATA

The topography of the property is gently rolling and the surface elevation varies from about +7 msl to +38 msl. The upper land form is probably associated with old beach and dune structures. Previous investigations indicate that sands and clayey sands are encountered to a depth of about 55' and are underlain by soft limestone and then by calcareous silts and marls.

Examination of soil samples during Law Engineering's 1972 study showed that there is about a foot of sandy topsoil lying on 8 to 12 feet of very loose to loose fine sands which do not contain significant fines. Penetration resistance of two to six blows per foot is typical of this material. A firm to very firm sand (greater than 10 blows per foot) layer is found beneath the loose sands to a depth of about 30 feet. The sands below 30 feet are dense to very dense and contain some clayey sand lenses. A test boring record from a 1970 study by Law Engineering is included in the appendix to illustrate typical soil conditions. This boring was made in the vicinity of the aeration basin dike.

The USGS<sup>1</sup> reports that the local surficial aquifer is divided into three zones as shown in Figure 3. The water table zone occurs in the upper part of the aquifer where water is in an unconfined condition. Below the water table is a discontinuous semi-confining zone of sediments with lower permeability which

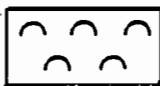
<sup>1</sup> Spechler, R. M. and Stone, R. B., "Appraisal of the Inter-connection Between the St. Johns River and the Surficial Aquifer, East-Central Duval County, Florida", USGS Water Resources Investigation Report 82-4109, 1983.



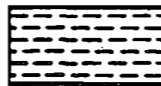
EXPLANATION



SAND



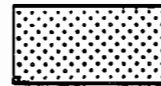
SHELL



CLAY



LIMESTONE



PHOSPHATE

FIGURE OBTAINED FROM THE FOLLOWING U.S.G.S. PUBLICATION: SPECHLER, R. M. AND STONE, R. B., APPRAISAL OF THE INTERCONNECTION BETWEEN THE ST. JOHNS RIVER AND THE SURFICIAL AQUIFER, EAST-CENTRAL DUVAL COUNTY, FLORIDA", U.S.G.S. WATER RESOURCES INVESTIGATION REPORT 82-4109, 1983.

GROUNDWATER PERMITTING STUDY FOR ST. REGIS CORPORATION



LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

GENERALIZED HYDROGEOLOGIC COLUMN OF THE SURFICIAL AQUIFER

JOB NO. NR3297

FIGURE 3

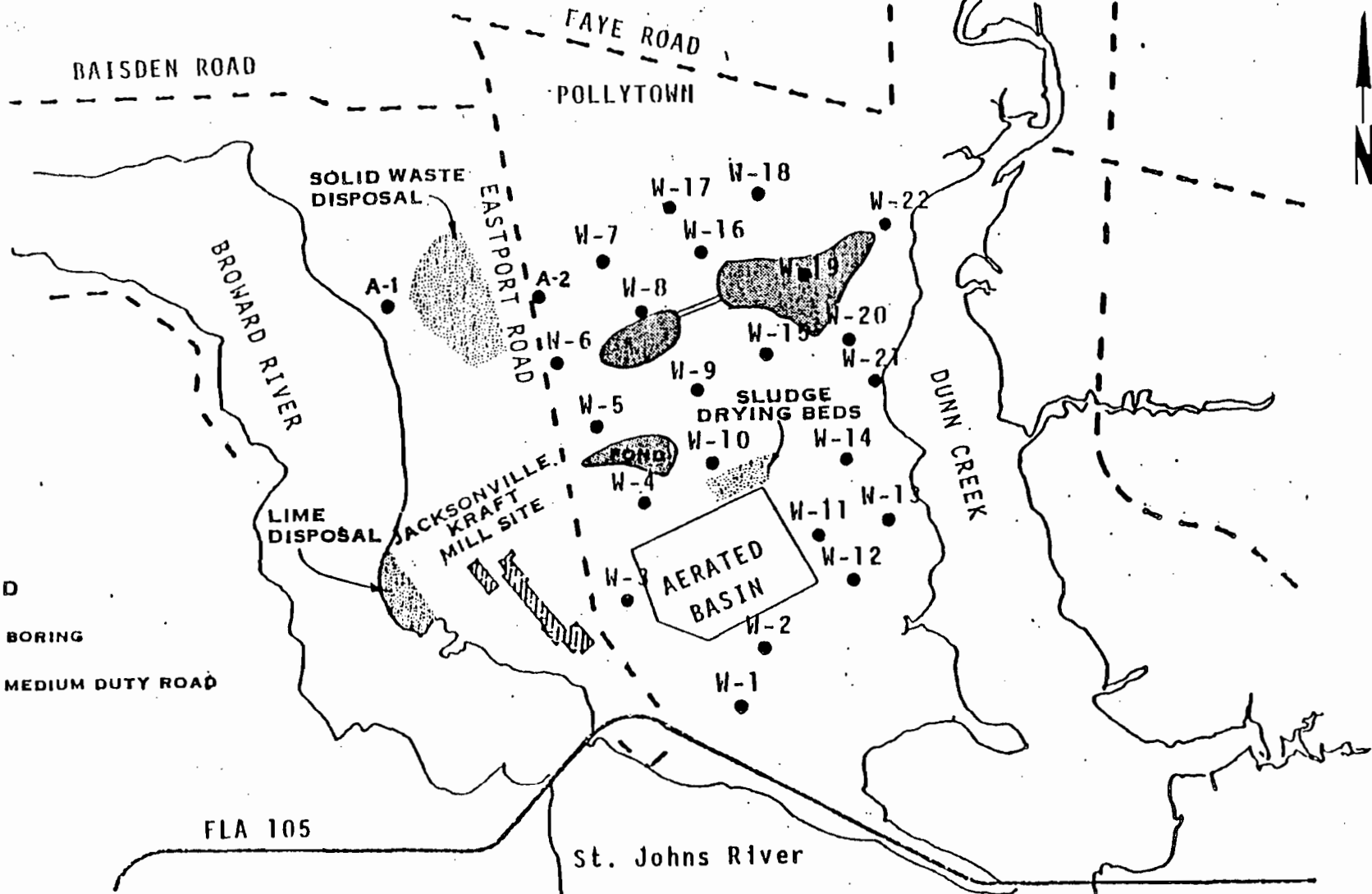
partially confines water in the lowest (limestone) unit. Just below the limestone unit is the upper Hawthorne Formation which has low permeability and therefore acts as a confining bed to severely limit movement of water between the surficial aquifer and the underlying Floridian aquifer.

Law Engineering conducted a hydrogeologic study in 1972 in conjunction with the construction of the aeration basin. During this study, 22 ground-water monitoring wells in the surficial aquifer were installed to provide data to aid in estimating the effects the aeration basin would have on the ground-water conditions. The locations of these ground-water wells are shown in Figure 4. Inflow tests performed on Wells W-2, W-9, and W-18 during Law Engineering's 1972 study resulted in permeabilities of 200, 7850, and 2000 feet per year, respectively, as compared to a permeability of about 12,000 feet per year as reported in the aforementioned USGS report<sup>1</sup>.

From July 1972 to September 1975 all the ground-water wells (except Nos. 12, 15 and 19) were periodically monitored for conductivity, pH and water level. Well Nos. 12, 15, and 19 were inadvertently destroyed during construction on the site. Well No. 1 was vandalized in 1975, Well No. 20 is partially obstructed, thus permitting only water level measurement, and Well No. 5 could not be monitored after April 1973. The ranges of pH, conductivity and water levels observed at each well during this periodic monitoring program are shown in Table 2. In conjunction with the above in situ monitoring program, samples were collected Well Nos. 2, 9, 10 and 18 for laboratory analyses. The

LEGEND

- BORING
- - - MEDIUM DUTY ROAD



GROUNDWATER PERMITTING STUDY  
FOR  
ST. REGIS CORPORATION



LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

GROUNDWATER MONITORING  
WELL LOCATIONS

JOB NO. NR3297

FIGURE 4

Table 2

## Summary of 1972 - 1975 Periodic Monitoring

Ground-Water Well No.	Range of Measurements		
	Water Level (ft-msl)	Conductivity (umhos/cm)	pH
1	8.5 - 13.0	---	---
2	11.0 - 17.2	200 - 900	5.6 - 7.8
3	3.8 - 9.6	240 - 1200	5.5 - 10.1
4	12.0 - 14.9	180 - 380	6.3 - 8.6
5*	7.9 - 8.8	340 - 4000	7.1 - 8.4
6	3.3 - 13.2	150 - 1450	5.3 - 8.8
7	3.8 - 7.5	140 - 480	5.2 - 7.4
8	2.9 - 5.5	160 - 1400	5.0 - 11.8
9	4.8 - 6.7	150 - 950	9.4 - 11.5
10	22.0 - 25.6	150 - 1000	9.4 - 11.0
11	6.0 - 11.3	100 - 350	5.9 - 8.1
12	---	---	---
13	7.3 - 9.9	50 - 300	5.1 - 7.2
14	7.3 - 10.3	100 - 250	4.7 - 6.7
15	---	---	---
16	3.3 - 6.9	200 - 350	6.3 - 9.4
17	2.0 - 6.1	100 - 1300	6.7 - 11.3
18	6.8 - 11.1	50 - 180	5.7 - 8.4
19	---	---	---
20	24.3 - 27.2	100 - 1600	6.6 - 11.4
21	7.6 - 9.9	60 - 500	5.9 - 7.7
22	11.3 - 14.8	100 - 300	6.9 - 7.8

\* Monitoring Period - July 1972 to April 1973

samples were typically analyzed for alkalinity, chemical and biochemical (5 day) oxygen demand, ammonia, Kjeldhal nitrogen, nitrate, total phosphorus, total solids, dissolved solids, suspended solids and sodium. Table 3 is a summary of the laboratory analyses showing the range of measured values. In general, these 1972 to 1975 data did not show any systematic change in the concentrations of the above parameters with the exception of a gradual increase in conductivity, dissolved and total solids, sodium, five day BOD and COD at well No. 2. These data can be made available upon request.

Law Engineering monitored the ground-water wells on June 27 - 28, 1983 for water level, pH and conductivity. In addition, the two shallow monitoring wells (A-1 and A-2) shown in Figure 4 were installed near the disposal site. Well No. A-1 was not deep enough to intersect the water table, therefore, only an estimate of the water table was obtained. The results of the 1983 monitoring program are shown in Table 4.

In addition to the above referenced ground-water studies, the Duval County Bio-Environmental Services Department conducted biological and water quality studies on the St. Johns River in 1980 and 1982. The study segment extended from the Atlantic Ocean upstream to a point approximately midway between the Jacksonville Naval Air Station and San Jose Estates at Buoy No. 5. The mill site is located approximately in the middle of the study segment. The results of these studies did not indicate any significant differences in the biological or water quality conditions between stations near the mill site and those upstream and downstream from the Mill.



Table 3

## Summary of Laboratory Results\*

<u>Water Quality Parameter</u>	<u>Well No. 2</u>	<u>Well No. 9</u>	<u>Well No. 10</u>	<u>Well No. 18</u>
Alkalinity, as CaCO <sub>3</sub>	15-73	9-195	18-122	7-56
Oxygen Demand, Chemical	8-368	2-24	0.5-135	2-44
Ammonia, as N	0.0-0.7	0.0-0.4	0.0-1.0	0.0-0.6
Kjeldahl Nitrogen	0.4-2.2	0.4-2.5	0.8-4.5	0.4-1.2
Nitrate, as N	0.02-3.9	0.02-1.5	0.02-0.45	0.02-1.5
Total Phosphorus, as P	0.04-2.0	0.03-1.1	0.04-0.59	0.02-2.8
Oxygen Demand, Biochemical	3-22	1-15	3-48	1-22
Total Solids	161-781	92-277	113-335	43-95
Dissolved Solids	143-720	88-255	110-270	36-76
Suspended Solids	18-39	4-47	19-140	4-51
Sodium	9-154	7-16	10-16	6-74

\* Data from August 23, 1972 through December 17, 1976

Table 4  
Results of 1983 Monitoring Program

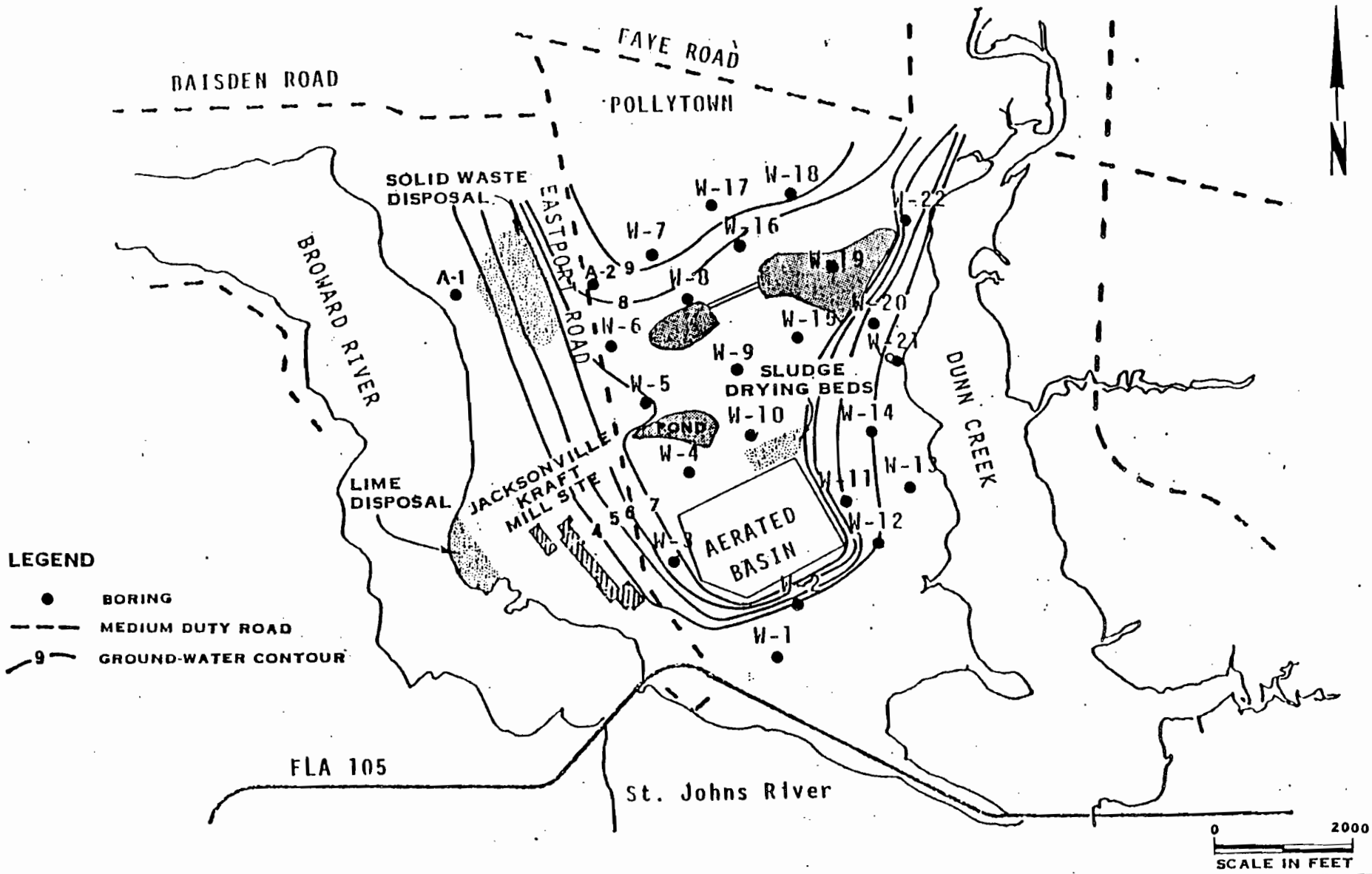
<u>Well No.</u>	<u>Water Surface Elevation (ft-msl)</u>	<u>Conductivity (umhos/cm)</u>	<u>pH</u>
1	---	---	---
2	3.86	1250	6.55
3	6.80	1100	6.61
4	7.78	100	7.5
5	6.92	200	---
6	7.28	70	5.03
7	9.09	150	6.75
8	7.57	150	5.94
9	7.73	150	5.65
10	7.49	150	9.10
11	4.68	60	5.41
12	---	---	---
13	3.39	145	6.12
14	4.01	170	5.95
15	---	---	---
16	7.47	110	5.85
17	9.83	100	5.25
18	9.22	60	5.15
19	---	---	---
20	4.69	---	---
21	2.88	60	5.7
22	5.43	100	6.73
A-1	<3.5	---	---
A-2	8.91	190	---

#### 4.0 DATA ANALYSIS

The water levels observed in 1983 (Table 4) are graphically displayed in Figure 5. As expected, these ground-water contours and flow paths show that any shallow ground water on the Jacksonville Kraft Paper Company property discharges to the contiguous surface water bodies (St. Johns River, Broward River and Dunn Creek). As is shown in Figure 5, the flow beneath the solid waste disposal area travels approximately 500 feet to the Broward River, flow from the aeration basin and sludge drying beds travels approximately 2000 feet before discharging into the Broward River, St. Johns River or Dunn Creek, and any flow from the lime recovery ponds travels about 30 to 40 feet before discharging into the Broward River.

The confining and semi-confining beds in the surficial aquifer and the boundary conditions around the site will tend to provide a predominantly horizontal direction to any wastewater which seeps into the water table zone and minimize vertically downward flow. It is probable that the flow lines beneath the Jacksonville Kraft Paper Company Mill are similar to those shown by the USGS in Figure 6. Based on these flow lines, any wastewater seepage into the upper portion of the water table zone will discharge into the contiguous surface water bodies.

Assuming a permeability of 5000 feet per year, a porosity of 0.3, and an average hydraulic gradient of about 0.004 ft/ft, the water discharging near the aeration basin will have a velocity of about 70 feet per year towards the St. Johns River, Broward River



GROUNDWATER PERMITTING STUDY  
FOR  
ST. REGIS CORPORATION



LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

GROUNDWATER CONTOURS

JOB NO. NR3297

FIGURE 5

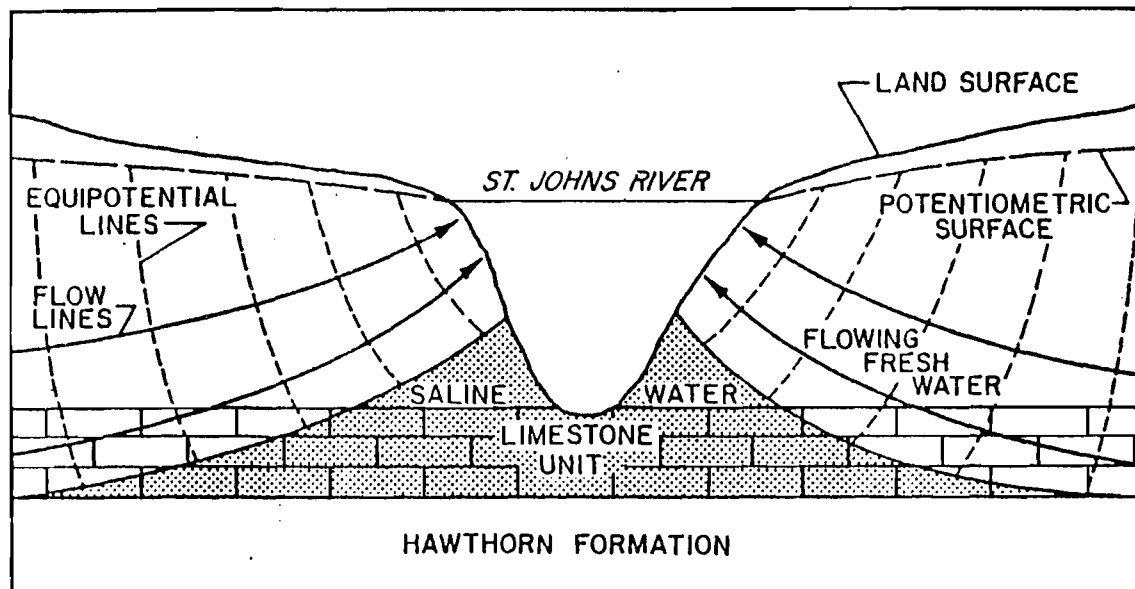


FIGURE OBTAINED FROM THE FOLLOWING U.S.G.S. PUBLICATION: SPECHLER, R. M. AND STONE, R. B., "APPRAISAL OF THE INTERCONNECTION BETWEEN THE ST. JOHNS RIVER AND THE SURFICIAL AQUIFER, EAST-CENTRAL DUVAL COUNTY, FLORIDA", U.S.G.S. WATER RESOURCES INVESTIGATION REPORT 82-4109, 1983.

GROUNDWATER PERMITTING STUDY  
FOR  
ST. REGIS CORPORATION



LAW ENGINEERING TESTING COMPANY

MARIETTA, GEORGIA

CONCEPTUAL VIEW OF GROUNDWATER  
FLOW LINES

JOB NO. NR3297

FIGURE 6

and Dunn Creek. Using the same permeability and porosity and a hydraulic gradient of 0.003 ft/ft the velocity across the solid waste disposal area is approximately 50 ft per year toward the Broward River.

Law Engineering's experience with permeabilities beneath existing paper mill waste ponds show that over the years the permeability will drastically reduce due to voids being filled with the fine settleable silts in the ponds. It is expected that the precipitant in the lime recovery ponds (mainly  $\text{CaCO}_3$ ) has effectively produced an impermeable layer beneath these ponds.

The water quality data listed in Tables 2 - 4 verifies the flow directions of Figure 5 and 6. Typically, pulp and paper wastewater effluents have concentrations of sodium, total dissolved solids, and specific conductance greater than would naturally occur in the ground water. These data show that the downgradient well (No. 2) has higher mean concentrations of sodium (mean - 71 mg/l) than the upgradient wells (mean - 10, 13 and 15 mg/l). Also, the specific conductance and total dissolved solids are higher than observed at the upgradient wells. More importantly, these data (in particular the 1983 pH and conductivity) show that in 11 years of operation there is only a slow downgradient movement of the basin wastewater seepage.

The laboratory results for the samples collected on October 8, 1975 showed  $\text{BOD}_5$  and suspended solids (SS) concentrations for the downgradient well No. 2 of 18 and 39 mg/l, respectively, and  $\text{BOD}_5$  and SS concentrations for upgradient well No. 18 of 12 and 37 mg/l, respectively. Based on its location with respect to

the waste sites, Well No. 18 is considered a background well. Therefore, the difference in downgradient and background BOD<sub>5</sub> is slight while there is no detectible difference in suspended solids.

Since the leakage from the waste sites has undoubtedly been reduced over time, the concentrations of the measured parameters at Well No. 2 will also have been reduced. Even if the leakage has not been reduced, the waste loading to the contiguous surface water bodies will be minimal. The incremental (that in excess of the background loading rate) BOD<sub>5</sub> loading rate to the contiguous rivers can be calculated using the 70 ft/year ground-water velocity, 6 mg/l BOD<sub>5</sub> concentration (based on measured values assuming no subsequent degradation), the 5000 feet downgradient perimeter of the basin and assuming a saturated transport thickness of 15 feet. Assuming the BOD<sub>5</sub> is not assimilated prior to discharge into the St. Johns, the resulting incremental BOD<sub>5</sub> loading rate due to ground-water transport is approximately 80 pounds per day or less than one (1) percent of the authorized NPDES discharge.

## 5.0 FINDINGS

The following findings summarize the data analyzed in this report.

- o The Jacksonville Kraft Paper Company Mill is bounded on its downgradient side by the St. Johns River, Broward River and Dunn Creek.
- o The property is underlain by a water table zone, a semi-confining bed, a limestone unit and a confining bed (Hawthorne formation).
- o The semi-confining and confining beds tend to provide a predominantly horizontal direction to the ground-water flow and minimize vertically downward flow.
- o The seepage from the waste ponds has probably been drastically reduced as voids in the underlying water table zone have filled with fine settleable silts from the ponds. The ground-water water quality data shows that in 11 years of operation there is only a slow downgradient movement of the basin wastewater seepage.
- o Any ground water leaving the Jacksonville Kraft Paper Company Mill property discharges immediately into the contiguous surface water bodies.
- o The water quality data and biological data for the contiguous surface water bodies did not indicate any adverse effects from plant site ground-water seepage or from direct surface water discharge through the NPDES effluent line.



- o Since the leakage from the waste sites has undoubtedly been reduced over time the concentrations of the measured parameters in the ground water will also have been reduced. Even if the leakage has not been reduced, the waste loading to the contiguous surface water bodies will be less than 1 percent of the loading rates authorized by the NPDES Permit.

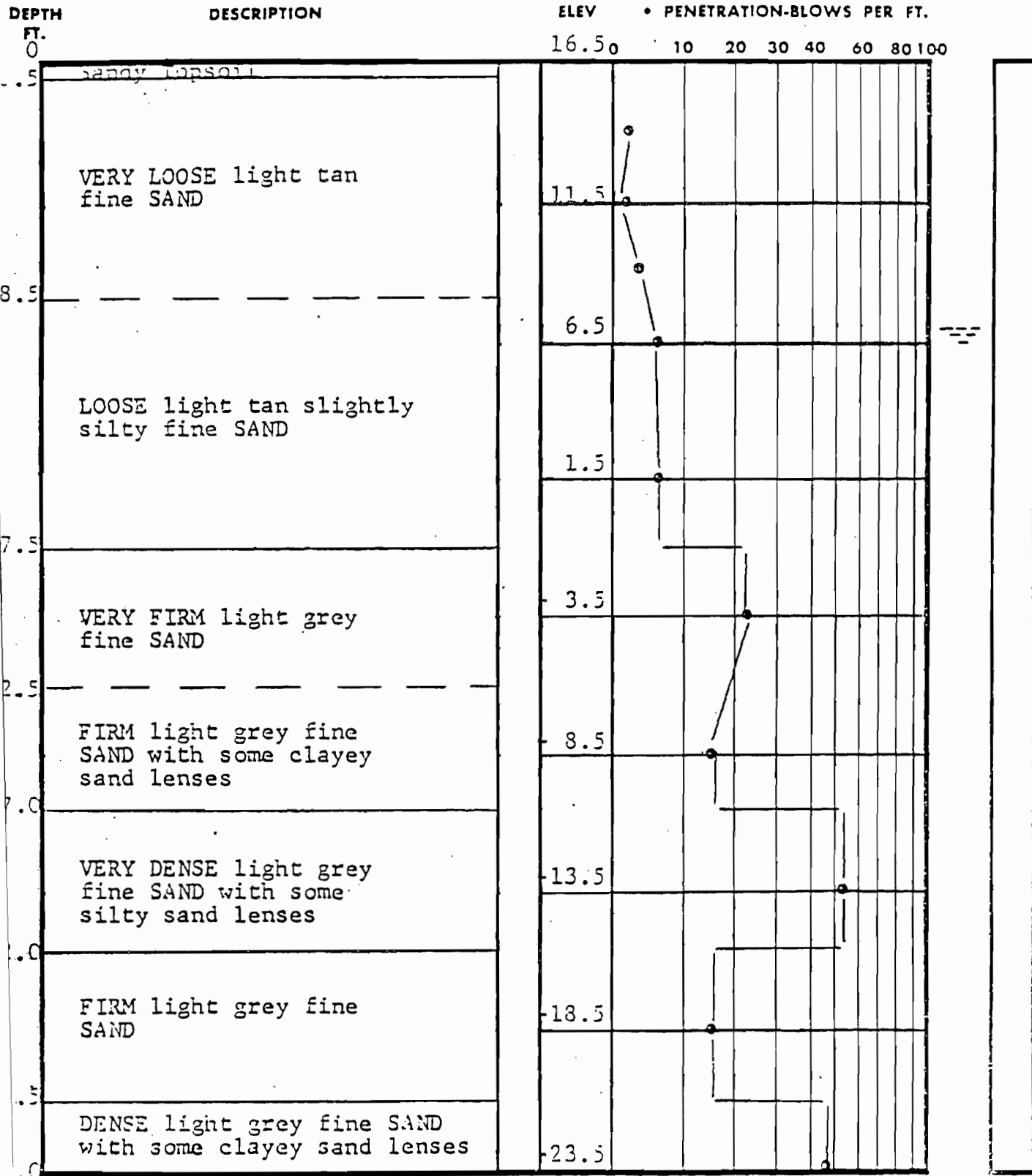
## 6.0 MONITORING PLAN

As stated in the Section 17-4.245(1)(C) of the F.A.C., the Jacksonville Kraft Paper Company Mill is an "Existing Installation." Based on the findings in this report, which indicate no detrimental effects to the ground water or contiguous surface waters, the zone of discharge for this installation should be established at the property boundary line.

Since all ground water leaving the property discharges to surface water bodies, there is minimal waste loading and no observed detrimental effects to the contiguous rivers, and there are no ground-water supply wells which will be adversely affected, we recommend that no 17-4 ground-water monitoring program is necessary.

APPENDIX

Best Available Copy



TEST BORING RECORD  
Page 1 of 2 Pages

BORING AND SAMPLING MEETS ASTM D-1586  
CORE DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

BORING NO. 3-17

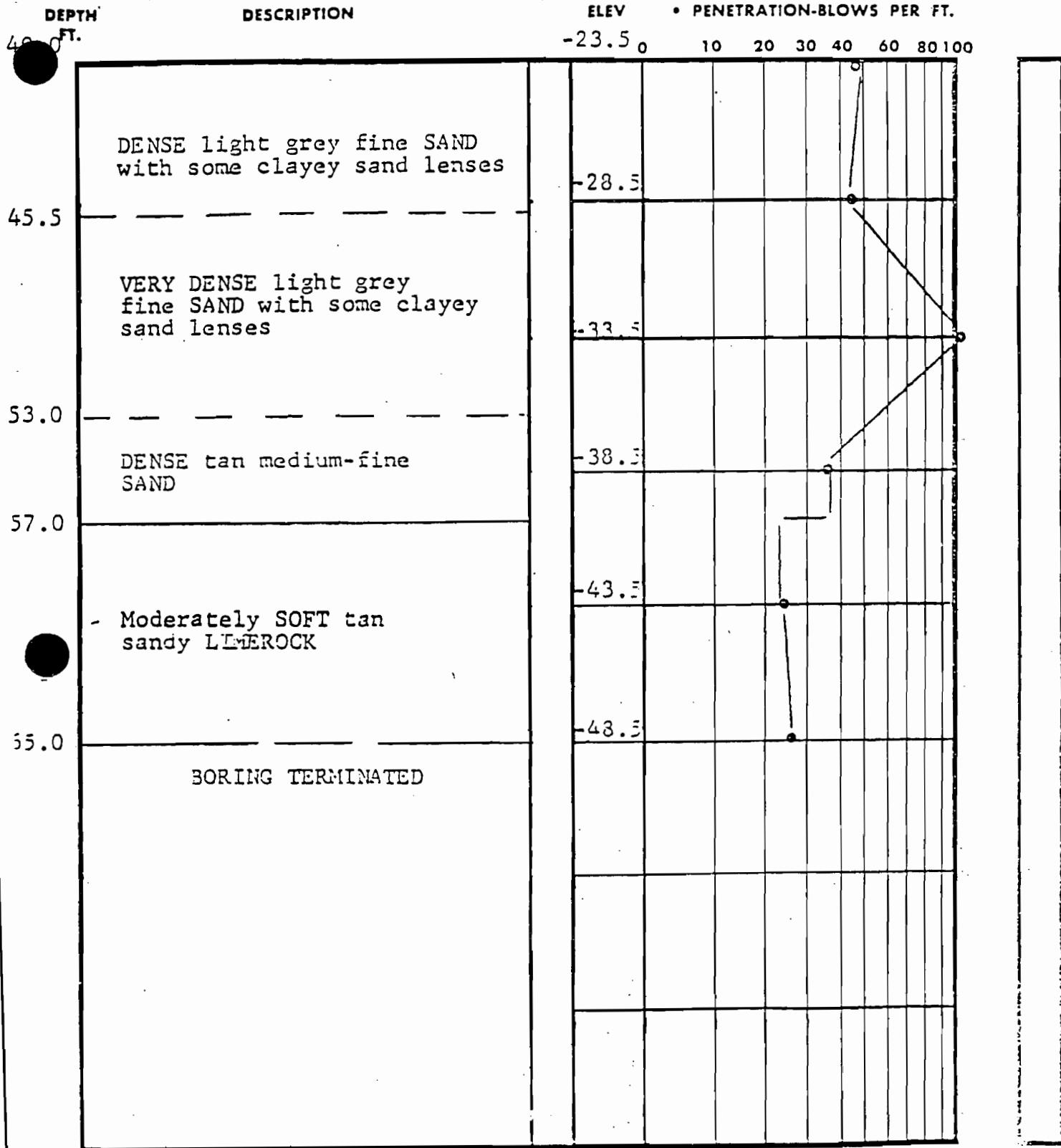
DATE DRILLED 10/3/79

JOB NO. J-13713

UNDISTURBED SAMPLE

WATER TABLE, 24 HR.

WATER TABLE, 1 HR.



### TEST BORING RECORD

Page 2 of 2 Pages

BORING NO. 3-17

DATE DRILLED 10/8/70

JOB NO. J-13713

DRILLING AND SAMPLING MEETS ASTM D-1586  
DRILLING MEETS ASTM D-2113

PENETRATION IS THE NUMBER OF BLOWS OF 140 LB. HAMMER  
FALLING 30 IN. REQUIRED TO DRIVE 1.4 IN. I.D. SAMPLER 1 FT.

UNDISTURBED SAMPLE

WATER TABLE, 24 HR.

WATER TABLE, 1 HR.

ROCK CORE RECOVERY

Number 10, 1982

Property Owners  
Within 2640 Feet of No. 9 Well

<u>TAX ROLL NUMBER</u>	<u>NAME AND ADDRESS</u>
1. 109570-0000 109685-0000	Seaboard Coast Line Railroad Company Tax Department c/o Seaboard Coast Line Railroad Company 500 Water Street Jacksonville, Florida 32202
2. 109619-0000	J. K. MacDonald Media Marketing Services Inc. 70 Perimeter Center East, N.E. Suite 7005 Atlanta, Georgia 30346
3. 109649-0000	Thomas Gelaro, Junior 15 Hyatt Lane Jacksonville, Florida 32218
4. 109650-0000	Mary E. Forbes 1638 Geraldine Drive Jacksonville, Florida 32205
5. 109656-0000	Osavell C. Odom 1433 Eastport Road Jacksonville, Florida 32218
6. 109657-0000	Marvin V. Odom Route 2, Box 136A Keystone Heights, Florida 32656
7. 109657-0010	Warren C. Lowe 2962 West 16th Street Jacksonville, Florida 32205
8. 109658-0000	Duval County Mosquito Control District 1321 Eastport Road Jacksonville, Florida 32218

Within 2640 Feet of No. 9 Well - continued  
Page 2

9. 109659-0000 Mary J. Joseph  
1001 Tanglewood Drive  
Greenville, Texas 75401
10. 109660-0000 Edward E. Hiatt  
1577 Faye Road  
Jacksonville, Florida 32218
11. 109660-0010 Mickey L. Mullis  
109660-0020 1509 Faye Road  
Jacksonville, Florida 32218
12. 109672-0000 Clara S. Dykes  
1506 Howard Road  
Jacksonville, Florida 32218
13. 109676-0000 Simplex Paper Corporation  
Adrian, Michigan 49221
14. 109677-0000 Clyde Walker  
1438 Fred Gray Road  
Jacksonville, Florida 32218
15. 109681-0000 Port Carriers, Inc.  
P.O. Box 26344  
Jacksonville, Florida 32218
16. 109682-0000 Kenneth Conner  
1416 Fred Gray Road  
Jacksonville, Florida 32218
17. 109683-0000 Jehovah Witnesses  
Northeast Unit  
1451 Eastport Road  
Jacksonville, Florida 32218
18. 109684-0000 J. B. Mallard Investment Corporation  
c/o Emily M. Acree  
1840 Shadowlawn Street  
Jacksonville, Florida 32205

November 10, 1982

Within 2640 Feet of No. 9 Well - continued  
Page 3

19.	109685-0010	Simplex Industries Inc. 1302 Eastport Road Jacksonville, Florida	32218
20.	109719-0000 109721-0000 109727-0000	Vernon A. Davis 1015 Kraft Road Jacksonville, Florida	32218
21.	109720-0000	Vonnie O. Gibson 1001 Kraft Road Jacksonville, Florida	32218
22.	109720-0010	Elva L. Hurdle 1057 Kraft Road Jacksonville, Florida	32218
23.	109723-0000	Betty L. Bryant, et al. 1000 Kraft Road Jacksonville, Florida	32218
24.	109728-0000	David C. Faircloth 1043 Kraft Road Jacksonville, Florida	32218
25.	109733-0000	Allie K. Bourbeau 1005 Kraft Road Jacksonville, Florida	32218
26.	100614-0000	Isabell Dukes 1889 Faye Road Jacksonville, Florida	32218
27.	110616-0000	William C. Sapp, Junior 1861 Faye Road Jacksonville, Florida	32218
28.	110620-0000	John H. Newton 1781 Faye Road Jacksonville, Florida	32218



November 10, 1982

Within 2640 Feet of No. 9 Well - continued  
Page 4

29.	110615-0000	Ethel M. Hess 1903 Faye Road Jacksonville, Florida	32218
30.	110617-0000	Dorothy B. Hammond 1807 Faye Road Jacksonville, Florida	32218
31.	110617-0010	David S. Black 1807 Faye Road Jacksonville, Florida	32218
32.	110618-0000	William H. Johnson 1823 Faye Road Jacksonville, Florida	32218
33.	110619-0000	David L. Corns, et al. 1841 Faye Road Jacksonville, Florida	32218
34.	110621-0000	Alden R. Carlson 8 Farragut Drive Piscataway, New Jersey	08854
35.	110622-0000	Melvin W. Henderson 11269 Locke Lane Jacksonville, Florida	32218
36.	110623-0000 110623-0100	Jarmal L. Fussell 1733 Faye Road Jacksonville, Florida	32218
37.	110624-0000	Betty F. Pickren 1721 Faye Road Jacksonville, Florida	32218
38.	110691-0000	Richard G. Lane 1527 Faye Road Jacksonville, Florida	32218

November 10, 1982

Within 2640 Feet of No. 9 Well - continued  
Page 5

39.	110693-0000	Andrew F. Ussery 11610 Dewitt Road Jacksonville, Florida	32218
40.	110694-0000	Sabine R. Landry 4034 Barmer Road Jacksonville, Florida	32210
41.	110695-0000	Paul Smith 11646 Dewitt Road Jacksonville, Florida	32218
42.	110697-0000 110698-0000	Sandra K. Parker 11660 Dewitt Road Jacksonville, Florida	32218
43.	110699-0000	George H. Dewitt 11661 Dewitt Road Jacksonville, Florida	32218
44.	110700-0000	Walter Tyson 11653 Dewitt Road Jacksonville, Florida	32218
45.	110702-0000 110703-0000	Nancy Mae Polk 8880 Old Kings Road, Apartment 121 Jacksonville, Florida	32217
46.	110705-0000 110706-0000	Eastport Baptist Church 1322 Eastport Road Jacksonville, Florida	32218
47.	110707-0000	Essie B. Conner 1360 Eastport Road Jacksonville, Florida	32218
48.	110708-0000	Ila Creech 1400 Eastport Road Jacksonville, Florida	32218

November 10, 1982

Within 2640 Feet of No. 9 Well - continued  
Page 6

49.	110708-0010	William C. Creech 1401 Eastport Road Jacksonville, Florida	32218
50.	110709-0000	H. R. Turbot P.O. Box 26216 Oceanway Branch Jacksonville, Florida	32218
51.	110710-0000	Clinton C. Scott 2103 Dunn Creek Cemetery Road Jacksonville, Florida	32218
52.	110711-0000	Cleo Chesser 1438 Eastport Road Jacksonville, Florida	32218
53.	110712-0000	Flagship Bank of Jacksonville Prudential Building General Mail Service Jacksonville, Florida	32207
54.	110714-0000	State Bank of Jacksonville Prudential Building Jacksonville, Florida	32207
55.	110715-0000	George W. Burnsed, Junior 1509 Eastport Road Jacksonville, Florida	32218
56.	110716-0000	Mattie J. Burnsed 1534 Faye Road Jacksonville, Florida	32218
57.	110718-0000	Blaine O. Conn 1682 Faye Road Jacksonville, Florida	32218

Within 2640 Feet of No. 9 Well - continued  
Page 7

58.	110719-0000	Charles C. Dicenso 1714 Faye Road Jacksonville, Florida	32218
59.	110720-0000	Lucious C. Robinson 1756 Faye Road Jacksonville, Florida	32218
60.	110721-0000 110725-0000	James D. Smith 462 New Berlin Road Jacksonville, Florida	32218
61.	110722-0000	Joe W. Adams 1778 Faye Road Jacksonville, Florida	32218
62.	110723-0000	Grace P. Lehman 1806 Faye Road Jacksonville, Florida	32218
63.	110724-0000	John Dailey 1842 Faye Road Jacksonville, Florida	32218
64.	110726-0000	Velda L. Gordon 1900 Faye Road Jacksonville, Florida	32218
65.	110726-0010	Jack Gordon 1886 Faye Road Jacksonville, Florida	32218
66.	110727-0000	Clinton C. Scott 1938 Faye Road Jacksonville, Florida	32218

November 10, 1982

Within 2640 Feet of Well No. 1

	<u>TAX ROLL NUMBER</u>	<u>NAME AND ADDRESS</u>
67.	109742-0000	Hess Fuel Oils, Inc. Attention Tax Department 1 Hess Plaza Woodridge, New Jersey 07095
68.	111059-0000	Gulf Oil Corporation P.O. Box 7245 Station C Atlanta, Georgia 30309



Henry Dean, Executive Director  
Mildred G. Horton, Assistant Executive Director

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904/328-8321

November 3, 1987

2133 N. Wickham Rd.  7775 Baymeadows Way  618 E. South St.  
Melbourne, FL 32935-8109 Suite 201 Orlando, FL 32801  
(305) 254-1761 Jacksonville, FL 32216 (305) 894-5423  
(904) 359-6521

Mr. Richard Cashen  
ES&E  
6737 South Point Drive South  
Jacksonville, FL 32216

SUBJECT: Seminole Kraft Corporation  
Consumptive Use Permits  
#2-031-0001U and 2-031-0002U

Dear Mr. Cashen:

As requested, enclosed are copies of the applications received in this office on January 4, 1983 for the above referenced permits.

Also provided are copies of the Technical Staff Reports and the Permits which were issued on March 8, 1983.

These applications were originally received in the name of St. Regis Paper Company, and have hence been transferred to Seminole Kraft Corporation. A copy of the request for transfer is attached.

If we can be of any further assistance, please do not hesitate to contact this office.

Sincerely,

*Dannise T. Kemp*  
Dannise T. Kemp, Director  
Division of Records

*Consumptive use permit application*

Enclosures

DTK:RP:rp

cc: District Permit Files

*KW*

RECEIVED  
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*Copies G. Gunn  
L. Aikens  
K. Weiss  
File 14573  
Water Supply*

MAR 17 1988

SYSTEMS ENG. DEPT  
LEGAL ENV. GROUP

*Rec'd  
5/2/88*

RALPHE SIMMONS  
Chairman - Fernandina Beach

FRANCIS SIMMONS  
Vice Chairman - Cocoa

CYNNE CAPEHART  
Secretary - Gainesville

JOHN L. MINTON  
Treasurer - Vero Beach

IDWAL H. OWEN, JR.  
Jacksonville

FRANCES S. PIGNONE  
Orlando

KELLEY R. SMITH, JR.  
Palatka

SAM L. SWETT  
Jacksonville

SAUNDRA H. GRAY  
DeBary

SEMINOLE KRAFT CORPORATION  
P.O. Box 26998  
Jacksonville, FL 32218

November 4, 1986

Ms. Dannise T. Kemp  
Director  
Division of Records  
St. Johns River Water  
Management District  
P.O. Box 1429  
Palatka, FL 32077

Re: Consumptive Water Use Permits 2-031-0001U and 2-031-0002U

Dear Ms. Kemp:

This letter is to request transfer of the above referred permits from Jacksonville Kraft Paper Company, Inc. to Seminole Kraft Corporation. Enclosed herewith are documents consummating the transaction transferring the assets of Jacksonville Kraft to Seminole Kraft.

On behalf of Seminole Kraft I wish to inform you that the Corporation will assume all obligations, responsibilities and duties under the above referred permits and intends to fully comply with statutes and regulations of the State of Florida as well as requirements of the St. Johns River Water Management District.

If you have questions, please contact me.

Sincerely yours,

  
Frank Lee

ah

BILL OF SALE

Jacksonville Kraft Paper Co., Inc., a corporation organized and existing under the laws of the State of Florida ("Seller"), for valuable consideration received from Seminole Kraft Corporation, a Delaware corporation ("Buyer"), hereby, on this 31st day of October, 1986, sells to Buyer all of the Scheduled Assets as defined and set forth in the Asset Purchase Agreement (the "Agreement") dated as of October 31, 1986, which by this reference is made a part hereof. Seller makes no representation or warranty as to the condition of the Seminole Assets or their fitness for any purpose.

JACKSONVILLE KRAFT PAPER CO., INC.

Signed, sealed and delivered in the presence of

[Signature]

[Signature]

Witnesses as to Jacksonville Kraft Paper Co., Inc.

By: [Signature]  
Its President

Attest: [Signature]  
Its Secretary



[THIS SPACE FOR RECORDER'S USE ONLY]

STATE OF Illinois  
COUNTY OF Cook

The foregoing instrument was acknowledged before me this date by Blusham Zion and Alan Dinowitz as President and Secretary respectively, of Jacksonville Kraft Paper Co., Inc., on behalf of the corporation.

Dated this 31<sup>st</sup> day of October, 1986.

Scott M. Chodura  
Notary Public duly authorized in the State and County aforesaid.

My Commission expires:  
11-27-88

SCHEDULED ASSETS

Buildings. All buildings located on the Plant site appearing on the survey attached hereto as Attachment A (the "Plant Site").

Land. Land included on the Plant Site (and all related easements including any and all rail sidings and other rights in the land and water, but excluding, in the case of the land fill area, the land fill thereon) as specified on Attachment A.

Machinery, Etc. Subject to the immediately following paragraph, all items of machinery and manufacturing equipment, vehicles, computer equipment, process equipment and office furniture and equipment which are now owned by JKP (other than the assets located at 41 Madison Avenue, New York, New York).

Off-Site Spare Parts. All spare parts and rolling stock which JKP owns and which are not located on the Plant Site and which are in the possession of third parties if, and only if, Seminole satisfies all of JKP's obligations in respect thereof and to the person holding such spare parts and rolling stock by November 30, 1986.

Spare Parts. Spare Parts and storeroom inventory, which JKP owns and which are located on the Plant Site.

Insurance. Any insurance proceeds received by JKP in respect of any casualty to any of the foregoing subsequent to August 19, 1986.

IDB Assets. The assets subject to the Agreement of Sale between The Jacksonville Port Authority (Florida) and St. Regis Paper Company dated August 1, 1974 which are not otherwise included in the foregoing.

None of the assets being purchased constitute "materials, supplies, merchandise or other inventory" within the meaning of Section 676.102(1), Florida Statutes (1985) nor do they constitute "raw materials, work in process or materials used or consumed in a business" within the meaning of Section 679.109(4), Florida Statutes (1985).

WARRANTY DEED

This Warranty Deed, made this 31<sup>st</sup> day of October, 1986, between Jacksonville Kraft Paper Co., Inc., a Florida corporation (Grantor"), and Seminole Kraft Corporation, a Delaware corporation ("Grantee"), whose post office address is: c/o Stone Container Corporation, 150 North Michigan Avenue, Chicago, Illinois 60601.

WITNESSETH: Grantor, for good and valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, hereby grants, bargains, and sells to Grantee and to Grantee's heirs, successors or assigns forever, the land lying and being in the County of Duval, State of Florida, more particularly described in Exhibit A annexed hereto and made a part hereof, together with all improvements and all fixtures on the Land, tenements hereditaments and appurtenances thereto belonging or in anywise appertaining (collectively the "Land"), to have and to hold the Land in fee simple forever.

Grantor hereby covenants with Grantee that it is lawfully seized of the Land in fee simple; that it has good right and lawful authority to sell and convey the Land; that it hereby fully warrants the title to the Land and will defend the same against the lawful claims of all persons whatsoever; and that the Land is free of all encumbrances except Permitted Exceptions set forth in Exhibit E to the Asset Purchase Agreement dated as of October 31, 1986, between Grantor and Grantee.

Prepared by and return to:

PJW/KRAFT WARRANTY DEED

Mr. Richard Schwalbe  
Rogers, Towers, Bailey, Jones & Gay  
1300 Gulf Life Drive  
Jacksonville, Florida 32207

Grantor and Grantee have entered into a License Agreement (the "License Agreement") relative to a portion of the Land, an executed copy of which is annexed hereto as Exhibit B and made a part hereof for all purposes. Grantor's conveyance herein of the Fill Area as defined and described in the License Agreement is expressly made subject to the right of reverter set forth in paragraph 15 of the License Agreement.

IN WITNESS WHEREOF, Grantor has executed this deed the day and year first above written.

Signed, sealed and delivered in the presence of:

JACKSONVILLE KRAFT PAPER CO., INC.

[Signature]

By: [Signature]  
Its President

[Signature]  
Witnesses as to Jacksonville Kraft Paper Co., Inc.

Attest: [Signature]  
Its Secretary

[THIS SPACE FOR RECORDERS USE ONLY]

STATE OF ILLINOIS  
COUNTY OF COOK

The foregoing instrument was acknowledged before me this date by

Abraham Zion and  
Alan Dinowitz as  
President and  
Secretary, respectively  
of Jacksonville Kraft Paper Co., Inc., on behalf of the corporation.

Dated this 31<sup>st</sup> day of October, 1986.

[Signature]  
Notary Public duly authorized in the State and County aforesaid.  
My Commission Expires: 11-27-88

LEGAL DESCRIPTION  
PARCEL "A":

Portions of Sections 19, 22, 24, and Webb Place, Subdivision of the John Broward Grant, Section 46, Township 1 South, Range 27 East, according to Plat recorded in Plat Book 1, Pages 7 and 8, former Public Records of Jacksonville, Duval County, Florida, being more particularly described as follows:

For point of reference, commence at a concrete monument located at the point of intersection of the North line of said Section 22 of said Subdivision, with the East line of Webb Place of said Subdivision, said monument lying S-89°57'56"W. a distance of 1,325.83 feet from a concrete monument located at the Northeast corner of said Section 22; run thence S-89°57'56"W., along the Westerly prolongation of said Northerly line of Section 22, a distance of 578.30 feet to a point on the Westerly right of way line of Eastport Road (a 66-foot right of way, as now established); run thence N-10°23'56"W., along said Westerly right of way line, a distance of 3,251.34 feet to a point; run thence S-89°21'22"W., parallel with the Southerly right of way line of Kraft Road (a 60-foot right of way, as now established), a distance of 1,639.56 feet to a point; run thence S-2°51'06"E. a distance of 1,845.0 feet to a point for point of beginning.

From the point of beginning thus described, run N-2°51'06"W. a distance of 1,845.0 feet to a point; run thence N-89°21'22"E., parallel with said Southerly right of way line of Kraft Road, a distance of 1,639.56 feet to a

EXHIBIT 2

ROBERT M. ANDAS ASSOCIATES  
JACKSONVILLE, FLORIDA 32207-0330

point on said Westerly right of way line of Eastport Road; run thence S-10°23'56"E., along said Westerly right of way line, a distance of 4,796.00 feet to a concrete monument at the point of curvaturé; run thence in a Southeasterly direction, along the arc of a curve in the Southwesterly right of way line of said Eastport Road, said curve being concave to the Northeast and having a radius of 592.89 feet, an arc distance of 317.83 feet to a concrete monument at the point of tangency, the aforementioned arc having a chord bearing and distance of S-25°45'21"E., 314.04 feet; run thence S-41°06'46"E., along said Southwesterly right of way line, a distance of 806.21 feet to a concrete monument; run thence in a Southwesterly direction, along the arc of a curve in said Westerly right of way line, not tangent to last described line, said curve being concave to the Northwest and having a radius of 113.24 feet, an arc distance of 201.17 feet to a concrete monument at the point of tangency, the aforementioned arc having a chord bearing and distance of S-22°59'46"W., 175.74 feet; run thence S-75°53'14"W., along the Northerly right of way line of said Eastport Road, a distance of 166.73 feet to a concrete monument at the intersection of said Northerly right of way line, with the Northerly right of way line of Hecksher Drive, as now established; run thence in a Westerly direction, along the arc of a curve in last mentioned Northerly right of way line, said curve not being tangent to last described line, said curve being concave to the South

Parcel "A"  
 Page 1  
 Seminole Kraft

and having a radius of 766.78 feet, an arc distance of 387.82 feet to a concrete monument at a point on a second non-tangent curve, the aforementioned arc having a chord bearing and distance of S-72°37'12"W., 383.70 feet; run thence in a Southwesterly direction, along the arc of a curve in the Northwesterly right of way line of said Hecksher Drive, said curve being concave to the Southeast and having a radius of 483.06 feet, an arc distance of 275.68 feet to the point of tangency, the aforementioned arc having a chord bearing and distance of S-59°21'27"W., 271.95 feet; run thence S-43°00'30"W., along said Northwesterly right of way line, a distance of 129.62 feet to a point on the Southwesterly line of lands described in deed recorded in Official Records Volume 1344, Page 261, Public Records of said County; run thence N-56°55'00"W., along said Southwesterly line, a distance of 2,485.40 feet to the point of curvature; run thence in a Northwesterly direction, along the arc of a curve in said Southwesterly deed line, said curve being concave to the Northeast and having a radius of 1000.00 feet, an arc distance of 122.00 feet to the Westerly corner of said deed, the aforementioned arc having a chord bearing and distance of N-53°25'18"W., 121.92 feet; run thence in a Northerly direction, along the waters of the Broward River, following the meanderings of same, a distance of 3,150 feet, more or less, to a point which bears S-87°08'54"W. from the point of beginning; run thence N-87°08'54"E. a distance of 40 feet, more or less, to the point of beginning. The land thus described contains 277 acres, more or less.

Parcel "A"  
Page 3  
Seminole Kraft  
October 27, 1986  
RMA 96D-4C



LEGAL DESCRIPTION  
PARCEL "B":

Portions of Sections 18, 19, 22, 23, and Webb Place, Subdivision of the John Broward Grant, Section 46, Township 1 South, Range 27 East, according to plat recorded in Plat Book 1, Pages 7 and 8, former Public Records of Jacksonville, Duval County, Florida, being more particularly described as follows:

For point of reference, commence at a concrete monument located at the point of intersection of the North line of said Section 22 of said Subdivision, with the East line of Webb Place of said Subdivision, said monument lying S-89°57'56"W. a distance of 1,325.83 feet from a concrete monument located at the Northeast corner of said Section 22; run thence N-89°57'56"E., along said North line, a distance of 1,325.83 feet to said concrete monument located at the Northeast corner of said Section 22; run thence S-76°37'10"W. a distance of 146.58 feet to a point for point of beginning.

From the point of beginning thus described, run N-00°24'12"W. a distance of 682.91 feet to a point; run thence N-53°56'47"E. a distance of 1,076.13 feet to a point; run thence S-60°07'28"E. a distance of 417.67 feet to a point; run thence S-36°36'37"E. a distance of 454.27 feet to a point; run thence S-43°25'48"W. a distance of 671.81 feet to a point; run thence S-35°36'59"E. a distance of 1,515.33 feet to a point; run thence S-54°38'17"W. a distance of 1,833.10 feet to a point lying on the Easterly prolongation of the Northerly line of lands described in Official Records Volume 365, Page 583, Public Records of said County; run

thence S-89°57'39"W., along said Easterly prolongation and along said Northerly line, a distance of 742.41 feet to the Northwesterly corner of said lands; run thence S-0°02'21"E., along the Westerly line of said lands, a distance of 202.96 feet to the Easterly corner of lands described in Official Records Volume 3204, Page 401, Public Records of said County; run thence S-54°56'50"W., along the Southeasterly line of said lands, a distance of 210.95 feet to a point lying on the Northeasterly right of way line of Eastport Road (a 66-foot right of way, as now established); run thence N-41°06'46"W., along said Northeasterly right of way line, a distance of 200.02 feet to a point lying on the Northwesterly line of said lands described in Official Records Volume 3204, Page 401; run thence N-54°56'50"E., along said Northwesterly line, a distance of 211.16 feet to the Northerly corner thereof; run thence N-51°36'05"W. a distance of 346.25 feet to a point; run thence N-26°44'44"W. a distance of 905.69 feet to a point; run thence N-10°06'08"W. a distance of 778.33 feet to a point; run thence S-79°36'04"W., perpendicular to the Easterly right of way line of said Eastport Road, a distance of 200.85 feet to a point lying on said Easterly right of way line; run thence N-10°23'56"W., along said Easterly right of way line, a distance of 434.92 feet to a point; run thence N-79°36'04"E., perpendicular to said Easterly right of way line, a distance of 418.33 feet to a point; run thence S-10°23'56"E., parallel to said Easterly right of way line, a distance of 432.27 feet to a point; run thence N-79°28'07"E. a distance of 751.66 feet to a point; run thence N-53°38'14"E. a distance of 226.55 feet to a point; run thence N-63°51'10"E. a distance of 297.92 feet to the point of beginning. The land thus described contains 147.01 acres, more or less.

RMA 96D-4C  
Seminole Kraft  
October 24, 1986

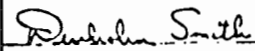
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
DISCHARGE MONITORING REPORT

Form Approved  
OMR NO. 134-R0073

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days (e.g., "3/7" is equivalent to 3 analyses performed every 7 days.) If continuous enter "CONT."
5. Specify sample type ("grab" or "hr. composite") as applicable. If frequency was continuous, enter "NA".
6. Appropriate signature is required on bottom of this form.
7. Remove carbon and retain copy for your records.
8. Fold along dotted lines, staple and mail Original to office specified in permit.

14-2 FL ST	14-100 FL 0000 400 PERMIT NUMBER	117-101 001 DIS	2621 2631 SIC	30° 24' 55" LATITUDE	081° 35' 45" LONGITUDE
REPORTING PERIOD: FROM		120-211 7/4 YEAR	120-212 11 MO	120-213 0.1 DAY	TO
		120-211 7/4 YEAR	120-212 11 MO	120-213 30 DAY	

PARAMETER		QUANTITY				UNITS	CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE		
		MINIMUM	AVERAGE	MAXIMUM	UNITS		MINIMUM	AVERAGE	MAXIMUM	UNITS					
Brackish Cooling Water Flow	REPORTED	43.2	48.0	61.2						0		Cont.	Based on pumping Cap.		
	PERMIT CONDITION	NONE	NONE	NONE	MGD							Cont.	Based on pumping Cap.		
Brackish Cooling Water Discharge Temp.	REPORTED	70	73	74						0		2/7	Grab		
	PERMIT CONDITION	NONE	93	NONE	°F							2/7	Grab		
Process Effluent Flow	REPORTED	9.8	16.2	18.6						0		Cont.	Integrator Recorder		
	PERMIT CONDITION	NONE	NONE	NONE	MGD							Cont.	Recorder		
Process Effluent pH	REPORTED	7.7	8.1	8.8						0		Cont.	Recorder & 24 Hr. Comp.		
	PERMIT CONDITION	6.0	NONE	9.0	STD. UNITS							Cont.	Recorder		
Process Effluent Temperature	REPORTED	77	81	86						0		Daily	Grab		
	PERMIT CONDITION	NONE	NONE	NONE	°F							2/7	Grab		
Process Effluent BOD <sub>5</sub>	REPORTED	2,800	5,100	7,200		21	38	57		0	Daily	24 Hour Composite			
	PERMIT CONDITION	NONE	10,000	32,000	LBS./DAY	NONE	NONE	NONE	Mg/L		Daily	24 Hour Composite			
Process Effluent TSS	REPORTED	4,200	10,300	19,500		51	77	103		0	Daily	24 Hour Composite			
	PERMIT CONDITION	NONE	13,000	39,000	LBS./DAY	NONE	NONE	NONE	Mg/L		Daily	24 Hour Composite			
	REPORTED														
	PERMIT CONDITION														
NAME OF PRINCIPAL EXECUTIVE OFFICER		TITLE OF THE OFFICER			DATE			I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.					 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		
Johnson, Clark	S.	Vice President - Kraft Div.			7/4	1/2	1/0								
LAST	FIRST	MI	TITLE			YEAR	MO	DAY							

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
DISCHARGE MONITORING REPORT

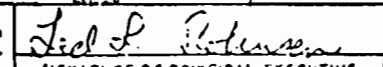
Approved  
OMU NO. LM-R0073

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. Analyses/No. Days (e.g., "3/7" is equivalent to 3 analyses performed every 7 days.) If continuous enter "CONT."
5. Specify sample type ("grab" or "hr. composite") as applicable. If frequency was continuous, enter "NA".
6. Appropriate signature is required on bottom of this form.
7. Remove carbon and retain copy for your records.
8. Fold along dotted lines, staple and mail Original to office specified in permit.

FL ST	FL 0000 400 PERMIT NUMBER	001 DIS	2621 2631 SIC	30° 24' 55" LATITUDE	081° 35' 45" LONGITUDE
REPORTING PERIOD: FROM		7 6 1 1 0 1 YEAR MO DAY	TO	7 6 1 1 3 0 YEAR MO DAY	

PARAMETER		QUANTITY				UNITS	NO. EX	CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM				MINIMUM	AVERAGE	MAXIMUM				
Brackish Cooling Water Flow	REPORTED	57.6	61.4	72.0	MGD	0						Cont.	Based on Pumping Capacity	
	PERMIT CONDITION	None	None	None									Cont.	Based on Pumping Capacity
Brackish Cooling Water Discharge Temperature	REPORTED	60	69	73	°F	0						2/7	Grab	
	PERMIT CONDITION	None	93	None									2/7	Grab
Process Effluent Flow	REPORTED	17.1	18.7	21.3	MGD	0						Cont.	Integrator & Recorder	
	PERMIT CONDITION	None	None	None									Cont.	Recorder
Process Effluent pH	REPORTED	7.4	7.6	7.8	STD. UNITS	0						Cont.	Recorder & 24-Hr. Comp.	
	PERMIT CONDITION	6.0	None	9.0									Cont.	Recorder
Process Effluent Temperature	REPORTED	78	81	83	°F	0						Daily	Grab	
	PERMIT CONDITION	None	None	None									2/7	Grab
Process Effluent BOD <sub>5</sub>	REPORTED	3,700	6,500	9,400	LBS./DAY	0	25	42	64	Mg/L	0	Daily	24-Hour Composite	
	PERMIT CONDITION	None	8,350	25,000			None	None	None					Daily
Process Effluent TSS	REPORTED	7,800	13,800	19,700	LBS/DAY	1	50	88	117	Mg/L	0	Daily	24-Hour Composite	
	PERMIT CONDITION	None	13,000	39,000			None	None	None					Daily
	REPORTED													
	PERMIT CONDITION													

NAME OF PRINCIPAL EXECUTIVE OFFICER			TITLE OF THE OFFICER			DATE			I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.	 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	
Fales	Henry	W	Vice President	7	6	1	1	0			7
LAST	FIRST	MI	TITLE	YEAR	MO	DAY					

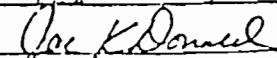
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
DISCHARGE MONITORING REPORT

Form Approved  
OMB NO. 155-R0073

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days. (e.g., "3/7" is equivalent to 3 analyses performed every 7 days.) If continuous enter "CONT."
5. Specify sample type ("grab" or "hr. composite") as applicable. If frequency was continuous, enter "NA".
6. Appropriate signature is required on bottom of this form.
7. Remove carbon and retain copy for your records.
8. Fold along dotted lines, staple and mail Original to office specified in permit.

15-2 FL	14-101 FL 0000 400	117-01 001	2621 2631	120-011 30° 24' 55"	120-011 081° 35' 45"
17 ST	PERMIT NUMBER	001	SIC	LATITUDE	LONGITUDE
REPORTING PERIOD: FROM		120-011 7 8	120-011 1 1	120-011 0 1	TO
		YEAR	MO	DAY	120-011 7 8
					120-011 1 1
					120-011 3 0
					YEAR
					MO
					DAY

PARAMETER		(3 card only)					(4 card only)					FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX	MINIMUM	AVERAGE	MAXIMUM	UNITS	NO. EX		
Brackish Cooling Water Flow	REPORTED	43.2	43.2	43.2	MGD	0						Cont.	Based on Pumping Capacity
	PERMIT CONDITION	None	None	None									Cont.
Brackish Cooling Water Discharge Temperature	REPORTED	78	80	82	°F	0						2/7	Grab
	PERMIT CONDITION	None	93	None									2/7
Process Effluent Flow	REPORTED	15.2	18.8	22.6	MGD	0						Cont.	Integrator & Recorder
	PERMIT CONDITION	None	None	None									Cont.
Process Effluent pH	REPORTED	7.2	7.3	7.5	STD. UNITS	0						Cont.	Recorder & 24 Hr. Comp.
	PERMIT CONDITION	6.0	None	9.0									Cont.
Process Effluent Temperature	REPORTED	78	83	86	°F	0						Daily	Grab
	PERMIT CONDITION	None	None	None									2/7
Process Effluent COD <sub>5</sub>	REPORTED	1,700	4,100	6,200	LBS/DAY	0	18	26	38	Mg/L	0	Daily	24-Hour Composite
	PERMIT CONDITION	None	8,350	25,000			None	None	None				
Process Effluent TSS	REPORTED	6,100	12,600	18,300	LBS/DAY	0	48	80	112	Mg/L	0	Daily	24-Hour Composite
	PERMIT CONDITION	None	13,000	39,000			None	None	None				
	REPORTED												
	PERMIT CONDITION												
NAME OF PRINCIPAL EXECUTIVE OFFICER		TITLE OF THE OFFICER			DATE		I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.					 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	
Bowersock, James N.		Vice President			7 8 1 2 2 1								
LAST	FIRST	MI	TITLE			YEAR	MO	DAY					

NAME W. J. Paper Company  
 ADDRESS P. O. Box 18020  
Jacksonville, FL 32229  
 FACILITY Jacksonville Mill  
 LOCATION 9469 Eastport Road, Jacksonville, FL

PERMIT NUMBER

001  
DISCHARGE NUMBER

MONITORING PERIOD							
FROM	YEAR	MO	DAY	TO	YEAR	MO	DAY
	80	11	01		80	11	30
	(20-21)	(22-31)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	SAMPLE MEASUREMENT / PERMIT REQUIREMENT	(3 Card Only) QUANTITY OF LOADING (46-53)			(4 Card Only) QUALITY OR CONCENTRATION (54-61)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
British Cooling Water Flow	SAMPLE MEASUREMENT	43.2	44.0	MGD				0	Cont.	Based Pumping Capacity
	PERMIT REQUIREMENT	None	None							
British Cooling Water Discharge Temperature	SAMPLE MEASUREMENT				78	81	84	0	2/7	Grab
	PERMIT REQUIREMENT				None	93	None			
Process Effluent Flow	SAMPLE MEASUREMENT	18.8	20.8	MGD				0	Cont.	Integrator Record
	PERMIT REQUIREMENT	None	None							
Process Effluent pH	SAMPLE MEASUREMENT				7.3	7.5	8.2	0	Cont.	Record & 24/11
	PERMIT REQUIREMENT				6.0	None	9.0			
Process Effluent Temperature	SAMPLE MEASUREMENT				68	75	80	0	Daily	Grab
	PERMIT REQUIREMENT				None	None	None			
Process Effluent BOD	SAMPLE MEASUREMENT	5,400	8,700	LBS/DAY	22	35	53	0	Daily	24-Hour Comp.
	PERMIT REQUIREMENT	8,350	25,000		None	None	None			
Process Effluent TSS	SAMPLE MEASUREMENT	9,600	14,400	LBS/DAY	30	62	99	0	Daily	24-Hour Comp.
	PERMIT REQUIREMENT	13,000	39,000		None	None	None			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER <u>S. S. [Signature]</u> TYPED OR PRINTED	THIS DOCUMENT IS SIGNED WITH RECOGNITION THAT KNOWINGLY MAKING A FALSE CERTIFICATION ON THIS REPORT OR SUPPORTING DOCUMENTS OR INTENTIONALLY TAMPERING WITH ANY MONITORING DEVICE OR METHOD ARE CRIMINAL OFFENSES. SEE 10 U.S.C. § 1001 AND 33 U.S.C. § 1310. (Penalties under these statutes may be fines up to \$10,000 and/or maximum imprisonment of between 6 months and 3 years.)	TELEPHONE		DATE		
		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)



November 10, 1982

Property Owners  
Within 2640 Feet of River Water Intake

	<u>TAX ROLL NUMBER</u>	<u>NAME AND ADDRESS</u>
1.	109742-0000	Hess Fuel Oils, Inc. Attention:Tax Department 1 Hess Plaza Woodridge, New Jersey 07095
2.	111059-0000	Gulf Oil Corporation P.O. Box 7245 Station C Atlanta, Georgia 30309
3.	111060-0000	Amoco Oil Company P.O. Box 5077 Atlanta, Georgia 30302
4.	111060-0500	Dawkins, Glass, & Lee 106 West Jefferson Street Monroe, North Carolina 28110
5.	111063-0000	City National Bank of Miami TRS Land Trust 500-1693 c/o Webb International, Inc. 9601 North Main Street Jacksonville, Florida 32218



EASTPONT

GARDENS

SEABOARD AIR LINE RAILROAD NORTH

SEC. 17

SEC. 17

SEC. 13

SEC. 18

LITTLE LEAGUE BALLPARK

D-533

ROBERTS SUBDIVISION

TEST WELLS

St. R. # 12,262 D / Geological  
Nos: # 2,263 Survey  
# 3,264 D

#8  
D-534

#7  
D-69

POND

POND

POND

SEC. 19

WEBB PLACE

D-564

WOODLANDS GARAGE

SMITH & DYAL

BROOKS  
CANTON  
WELL  
D-1054  
STREGGS  
MILLSITE  
#4  
D-563

POND

SEC. 19

SEC. 18

HOWARD WRIGHT

WEBB PLACE

AERATED BASINS

RIVER WATER INTAKE  
ACQUIRED JULY 27, 1961  
O. R. VOL. 1344, PGS. 261  
APPROVED BULKHEAD

Power Station

SEC. 22

D-486

PAVED AREA

R. F. Cashen  
J. K. Donald  
W. L. Durden  
H. R. Emery

R. K. Kollmeyer  
R. A. Romnes  
F. E. Westmark  
R. H. Williams

PAPER COMPANY

KRAFT DIVISION  
P.O. Box 18020  
Jacksonville, Fla. 32229  
904/751-1400

TYPICAL REPORT TO STATE September 21, 1982

Mr. Frank Watkins, Jr., P.E.  
Subdistrict Engineer  
Department of Environmental Regulation  
St. Johns River Subdistrict  
3426 Bills Road  
Jacksonville, FL 32207


Dear Mr. Watkins:

RE: Permit No. 1016-4984  
St. Regis Paper Company

The following information is being submitted in accordance with the above permit conditions for the month of August, 1982.

	<u>Permit Limit</u>
Flow, daily average 13.3 MGD	None
Flow, daily maximum 19.2 MGD	None
Temperature, daily average 84°F	None
Temperature, daily maximum 86°F	None
pH, daily average 7.6	None
pH, daily maximum 8.1	9.0
pH, daily minimum 7.3	6.0
BOD <sub>5</sub> , daily average 4,700 lbs/day	8,350
BOD <sub>5</sub> , daily maximum 12,500 lbs/day	17,068
Total Suspended Solids, daily average 3,700 lbs/day	13,000
Total Suspended Solids, daily maximum 8,700 lbs/day	36,576.

Very truly yours,

  
J. H. Johnson, Jr.  
Resident Manager

rm

cc Donald C. Bayly, BES



KRAFT DIVISION  
P.O. Box 18020  
Jacksonville, Fla. 32229  
904/751-1400

December 30, 1982

Consumptive Use Permit Application - Letter of Explanation

St. Regis Paper Company, Jacksonville Mill, is a wholly integrated pulp and paper mill located in Duval county at 9469 Eastport Road. Other divisions also operate in this county.

The Jacksonville Mill operates 24 hours a day, 7 days a week, 361 days a year, economic shutdowns excepted.

The mill has 12 wells as listed. Seven wells are considered production wells and are equipped with pumps. No. 1 and No. 2 are on standby emergency use basis. Nos. 4, 5, 7, 8, and 9 are used on a rotation basis to produce an average of 20 million gallons per day with a maximum capacity of 28 M.G.D. The mill normally uses 20 M.G.D. with a maximum use of about 25 M.G.D. No. 3 and No. 6 wells were never drilled.

Due to the nature of our production and its dependency on water, our recycle pumps control our daily use. If a large recycle pump tears up and requires several days for repair, our use of fresh water will be near the maximum.

Conservation has always been practiced in our mill with recycles approaching 14. We will continue to look for economical ways to improve the conservation measures.

Our waste treatment system is operated under EPA Permit No. FL 0000-400 and State Permit No. 1016-4984.

The attached map shows our well locations and our river water intake.



# United States Department of the Interior

GEOLOGICAL SURVEY  
Box 35032, Federal Office Bldg.  
400 West Bay Street  
Jacksonville, Florida 32202

June 26, 1975

J. Bert Rhyne  
St. Regis Paper Company  
P. O. Box 18020  
Jacksonville, FL 32229

Dear Mr. Rhyne:

Listed below are the analyses on the wells which you requested by telephone. There is a question as to the validity of two of these samples.

D-262	Cl 30	CaCO <sub>3</sub> 144?? Spec. Cond. 250? (75-05-09)
D-263	Cl 20	CaCO <sub>3</sub> not valid Spec. Cond. 370 (75-05-09)
D-264	Cl 22	CaCO <sub>3</sub> 228 Spec. Cond. 461 (75-05-09)
D-265	Cl 20	CaCO <sub>3</sub> 244 Spec. Cond. 500 (75-05-09)

The hardness, chloride, and potentiometric surface maps that you requested will be mailed to you as soon as additional copies are printed.

Please let us know if we can be of further service to you.

Sincerely,

*G. W. Leve*  
G. W. Leve  
Hydrologist-in-charge

GWL:bbm

**STR** REGIS INTER-OFFICE CORRESPONDENCE

GULF LIFE TOWER  
JACKSONVILLE, FLORIDA 32207

DATE: November 30, 1972

FROM: G. D. Lyon

TO: Mr. Bert Rhyne  
Jacksonville Mill

Subject: Well - North Side Aeration  
Ponds CE 30-117-16

Well was drilled for Houdaille Construction Company by O. E. Smith Well Drilling Company and has a total depth of 782 ft. The well has 528 ft. of 6" casing and 108 ft. of 8" casing. The 8" section is at the top. Well capacity is 500 GPM.

APPROX OCT 1971

  
G. D. Lyon

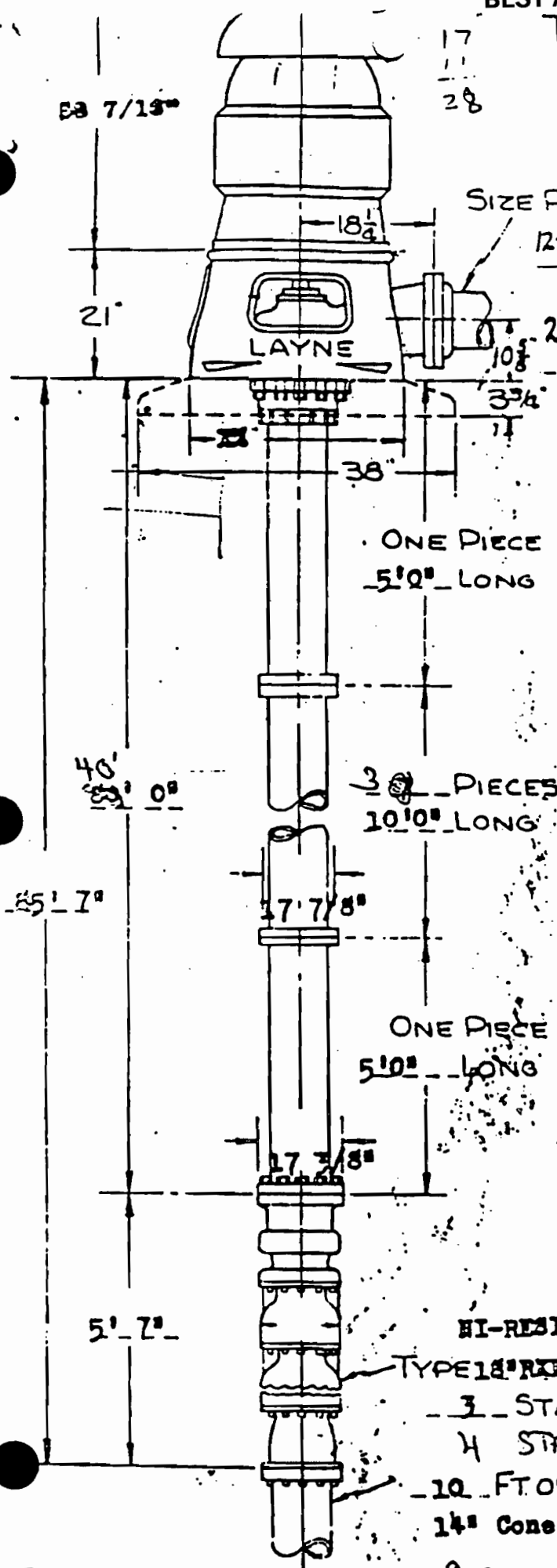
bh

cc: Messrs.  
J. F. Eschner  
R. G. Gonzales  
J. F. Robbins  
R. S. Welch

TR1425 PUMP HEAD

LAYNE & BOWLER, INC  
MEMPHIS, TENN.

19 - 8 3/4  
10 3/8  
9 - 4  
29 - 10 3/4



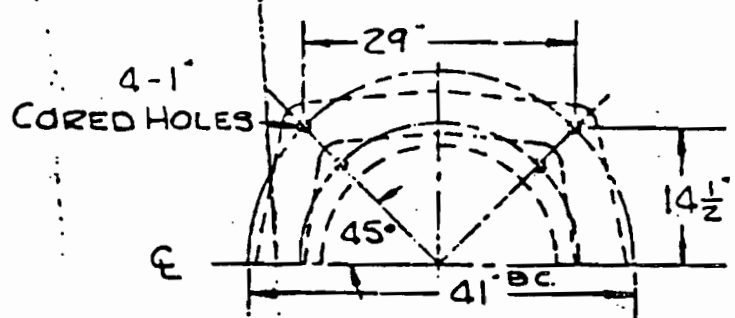
SIZE PIPE 1 1/2"

12-18 CORED HOLES

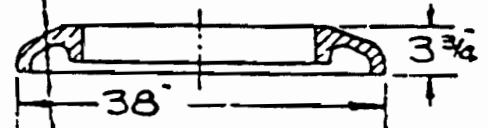


DISCHARGE FLANGE

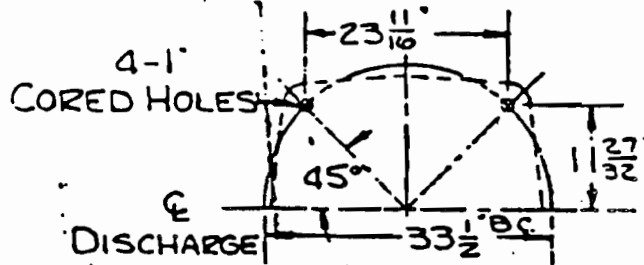
USE THESE DIMENSIONS ONLY WHEN CERTIFIED BY FACTORY.



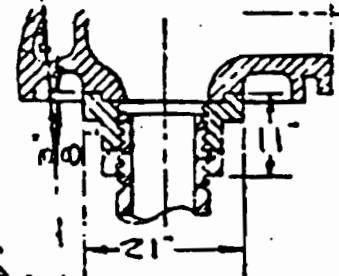
LOCATION OF HOLES IN BASE PLATE



SECTION THRU BASE PLATE



LOCATION OF HOLES IN BASE OF ELL



SECTION THRU BASE OF ELL

HI-RESIS T

TYPE 18 REX BOWLS

3 STAGES 8 x 8

4 STAGES 4 x 9

10 FT. OF 1 1/2 IN SUCTION

1 1/2 Cone Strainer

2 STAGES 8 x 8

PERMITTEE NAME/ADDRESS  
 Facility Name/Location if different  
 NAME WATTS PAPER - 103  
 ADDRESS 103 WATTS  
103 WATTS EL 1221  
 FACILITY \_\_\_\_\_  
 LOCATION \_\_\_\_\_

PERMIT NUMBER 103-103  
 DISCHARGE NUMBER 103-103  
 MONITORING PERIOD  
 FROM YEAR MO DAY TO YEAR MO DAY  
 (10-31) (11-30) (12-31) (10-31) (11-30) (12-31)

PERMIT TYPE INDUSTRIAL  
 PROCESS WASTEWATER  
 NOTE: Read instructions before completing this form.

PARAMETER (32-37)	SAMPLE MEASUREMENT	(3 Card Only) QUANTITY OR LOADING (46-51)			(4 Card Only) QUALITY OR CONCENTRATION (34-41)				NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
BOD <sub>5</sub> , 5-DAY (20 DEG. C) 00310 0	5400	9,000			39	57		0			
	PERMIT REQUIREMENT	150	25000	LBS/D					DAILY		
PH 00400 0	7.5				7.5	8.1		0			
	PERMIT REQUIREMENT								CONT. MONIT.		
SOLIDS, TOTAL SUSPENDED 00530 0	12,800	21,000			97	152		0			
	PERMIT REQUIREMENT	1000	19000	LBS/D					DAILY		
FLOW, IN CONDUIT OR THROUGH TREATMENT PLANT 50050 0	16.6	19.3						0			
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
Toek. Donald, Vice-President  
 TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE 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. SEE 18 USC § 1001 AND 33 USC § 1319. (Penalties under these statutes may include fines up to \$10,000 and/or maximum imprisonment of between 6 months and 5 years.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  
Toek Donald

TELEPHONE 704 751-1400  
 DATE 8/15/9  
 AREA CODE NUMBER YEAR MO DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NAME Reids Paper Company  
 ADDRESS P. O. Box 18020  
Jacksonville, FL 32229  
 FACILITY Jacksonville Mill  
 LOCATION 9469 Eastport Road, Jacksonville, FL

PERMIT NUMBER  
11 01 01

DISCHARGE NUMBER  
001

MONITORING PERIOD						
FROM			TO			
YEAR	MO	DAY	YEAR	MO	DAY	
(20-21)	(22-23)	(24-25)	(26-27)	(28-29)	(30-31)	
	11	01	89	11	30	

NOTE: Read instructions before completing this form.

PARAMETER (32-37)	X	(3 Card Only) QUANTITY OF LOADING (46-53)			(4 Card Only) QUALITY OR CONCENTRATION (46-53)			NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLING TYPE (69-71)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
Brackish Cooling Water Flow	SAMPLE MEASUREMENT	43.2	43.2	MGD				0	Cont.	Base Pump
	PERMIT REQUIREMENT	None	None							Cont.
Brackish Cooling Water Discharge Temperature	SAMPLE MEASUREMENT				78	81	84	0	2/7	Grab
	PERMIT REQUIREMENT				None	93	None			
Process Effluent Flow	SAMPLE MEASUREMENT	18.8	20.5	MGD				0	Cont.	Inter
	PERMIT REQUIREMENT	None	None							Cont.
Process Effluent pH	SAMPLE MEASUREMENT				7.3	7.5	8.2	0	Cont.	Reco & 24
	PERMIT REQUIREMENT				6.0	None	9.0			
Process Effluent Temperature	SAMPLE MEASUREMENT				68	75	80	0	Daily	Grab
	PERMIT REQUIREMENT				None	None	None			
Process Effluent TSS	SAMPLE MEASUREMENT	5,400	8,500	LBS/DAY	22	35	53	0	Daily	24-hr Comp
	PERMIT REQUIREMENT	8,350	25,000			None	None			
Process Effluent TSS	SAMPLE MEASUREMENT	9,600	14,000	LBS/DAY	30	62	99	0	Daily	24-hr Comp
	PERMIT REQUIREMENT	13,000	19,000			None	None			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  
S. J. Smith  
 TYPED OR PRINTED

THIS DOCUMENT IS SIGNED WITH RECOGNITION THAT KNOWINGLY MAKING A FALSE CERTIFICATION ON THIS REPORT OR SUPPORTING DOCUMENTS OR INTENTIONALLY TAMPERING WITH ANY MONITORING DEVICE OR METHOD ARE CRIMINAL OFFENSES. SEE 18 U.S.C. § 1001 AND 23 U.S.C. § 1310. (Penalties under these statutes may be fines up to \$10,000 and/or maximum imprisonment of between 5 months and 3 years.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE  
904 751-1100  
 DATE  
89 1 1

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
DISCHARGE MONITORING REPORT

Form Approved  
OMB NO. 155-R001

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days. (e.g., "2/7" is equivalent to 3 analyses performed every 7 days.) If continuous enter "CONT."
5. Specify sample type ("grab" or "hr. composite") as applicable. If frequency was continuous, enter "NA".
6. Appropriate signature is required on bottom of this form.
7. Remove carbon and retain copy for your records.
8. Fold along dotted lines, staple and mail Original to office specified in permit.

15-B  
FL  
ST

14-101  
FL 0000 400  
PERMIT NUMBER

17-101  
001  
2621  
2631  
DIB  
SIC

30° 24' 55" 081° 35' 45"  
LATITUDE LONGITUDE

REPORTING PERIOD: FROM

12-15: 12-31 13-31  
7 8 1 1 0 1  
YEAR MO DAY

TO

12-31 13-31 13-31  
7 8 1 1 3 0  
YEAR MO DAY

PARAMETER		QUANTITY				UNITS	NO. EX.	CONCENTRATION				NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM				MINIMUM	AVERAGE	MAXIMUM				
Brackish Cooling Water Flow	REPORTED	43.2	43.2	43.2	MGD	0						Cont.	Based on Pumping Cap	
	PERMIT CONDITION	None	None	None										
Brackish Cooling Water Discharge Temperature	REPORTED	78	80	82	°F	0						2/7	Grab	
	PERMIT CONDITION	None	93	None										
Process Effluent Flow	REPORTED	15.2	18.8	22.6	MGD	0						Cont.	Integrator & Recorder	
	PERMIT CONDITION	None	None	None										
Process Effluent pH	REPORTED	7.2	7.3	7.5	STD. UNITS	0						Cont.	Recorder & 24 Hr. Comp.	
	PERMIT CONDITION	6.0	None	9.0										
Process Effluent Temperature	REPORTED	78	83	86	°F	0						Daily	Grab	
	PERMIT CONDITION	None	None	None										
Process Effluent BOD <sub>5</sub>	REPORTED	1,700	4,100	6,200	LBS/DAY	0	18	26	38	Mg/L	0	Daily	24-Hour Composite	
	PERMIT CONDITION	None	8,350	25,000										
Process Effluent TSS	REPORTED	6,100	12,600	18,300	LBS/DAY	0	48	80	112	Mg/L	0	Daily	24-Hour Composite	
	PERMIT CONDITION	None	13,000	39,000										
	REPORTED													
	PERMIT CONDITION													

NAME OF PRINCIPAL EXECUTIVE OFFICER: Bowersock, James N.  
TITLE OF THE OFFICER: Vice President  
DATE: 7 8 1 2 2 1  
LAST FIRST MI TITLE YEAR MO DAY

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

*James N. Bowersock*  
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
DISCHARGE MONITORING REPORT

Approved  
OMB NO. 156-0073

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days. (e.g., "1/7" is equivalent to 3 analyses performed every 7 days.) If continuous enter "CONT."
5. Specify sample type ("grab" or "hr. composite") as applicable. If frequency was continuous, enter "NA".
6. Appropriate signature is required on bottom of this form.
7. Remove carbon and retain copy for your records.
8. Fold along dotted lines, staple and mail Original to office specified in permit.

15-2	16-101	110-101	110-101	110-101	110-101	110-101	110-101
FL	FL 0000 400	001	2621 2631	30° 24' 55"	081° 35' 45"		
ST	PERMIT NUMBER	01	SIC	LATITUDE	LONGITUDE		
110-101 (10-10) 110-101 (10-10) 110-101 (10-10)		110-101 (10-10) 110-101 (10-10) 110-101 (10-10)		110-101 (10-10) 110-101 (10-10) 110-101 (10-10)		110-101 (10-10) 110-101 (10-10) 110-101 (10-10)	
REPORTING PERIOD: FROM		TO					
7   6   1   1   0   1		7   6   1   1   3   0					
YEAR NO DAY		YEAR MD DAY					

PARAMETER		QUANTITY				UNITS	CONCENTRATION				FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM	NO. EX		MINIMUM	AVERAGE	MAXIMUM	UNITS		
Brackish Cooling Water Flow	REPORTED	57.6	61.4	72.0	0						Cont.	Based on Pumping Capacity
	PERMIT CONDITION	None	None	None							Cont.	Based on Pumping Capacity
Brackish Cooling Water Discharge Temperature	REPORTED	60	69	73	0						2/7	Grab
	PERMIT CONDITION	None	93	None							2/7	Grab
Process Effluent Flow	REPORTED	17.1	18.7	21.3	0						Cont.	Integrator & Recorder
	PERMIT CONDITION	None	None	None							Cont.	Recorder
Process Effluent pH	REPORTED	7.4	7.6	7.8	0						Cont.	Recorder & 24-Hr. Comp.
	PERMIT CONDITION	6.0	None	9.0							Cont.	Recorder
Process Effluent Temperature	REPORTED	78	81	83	0						Daily	Grab
	PERMIT CONDITION	None	None	None							2/7	Grab
Process Effluent BOD <sub>5</sub>	REPORTED	3,700	6,500	9,400	0	25	42	64		0	Daily	24-Hour Composite
	PERMIT CONDITION	None	8,350	25,000		None	None	None	Mg/L		Daily	24-Hour Composite
Process Effluent TSS	REPORTED	7,800	13,800	19,700	1	50	88	117		0	Daily	24-Hour Composite
	PERMIT CONDITION	None	13,000	39,000		None	None	None	Mg/L		Daily	24-Hour Composite
	REPORTED											
	PERMIT CONDITION											

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

*Neil S. Robinson*  
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

J. K. Donald  
W. L. Durden  
H. R. Emery

F. E. Westmark  
R. H. Williams

PAPER COMPANY

KRAFT DIVISION  
P.O. Box 18020  
Jacksonville, Fla. 32229  
904/751-1400

TYPICAL REPORT TO STATE September 21, 1982

Mr. Frank Watkins, Jr., P.E.  
Subdistrict Engineer  
Department of Environmental Regulation  
St. Johns River Subdistrict  
3426 Bills Road  
Jacksonville, FL 32207

Dear Mr. Watkins:

RE: Permit No. 1016-4984  
St. Regis Paper Company

The following information is being submitted in accordance with the above permit conditions for the month of August, 1982.

	<u>Permit</u>
Flow, daily average 13.3 MGD	None
Flow, daily maximum 19.2 MGD	None
Temperature, daily average 84°F	None
Temperature, daily maximum 86°F	None
pH, daily average 7.6	None
pH, daily maximum 8.1	9.0
pH, daily minimum 7.3	6.0
BOD <sub>5</sub> , daily average 4,700 lbs/day	8,350
BOD <sub>5</sub> , daily maximum 12,500 lbs/day	17,060
Total Suspended Solids, daily average 3,700 lbs/day	13,000
Total Suspended Solids, daily maximum 8,700 lbs/day	36,570

Very truly yours,



J. H. Johnson, Jr.  
Resident Manager

rm

cc Donald C. Bayly, BES

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
DISCHARGE MONITORING REPORT

Form Approved  
OMB NO. 158-RO073

INSTRUCTIONS

11-2 FL ST	14-101 FL 0000 400 PERMIT NUMBER	117-101 001 DIS	2671 2631 SIC	30° 24' 55" LATITUDE	081° 35' 45" LONGITUDE
120-211 120-212 120-213 REPORTING PERIOD: FROM 7/4 1/1 0/1 YEAR MO DAY		TO 7/4 1/1 3/0 YEAR MO DAY		120-217 120-218 120-219	

- Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
- Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge to operating. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
- Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
- Specify frequency of analysis for each parameter as No. analyses/No. days (e.g., "3/7" is equivalent to 3 analyses performed every 7 days.) If continuous enter "CONT."
- Specify sample type ("grab" or "hr. composite") as applicable. If frequency was continuous, enter "NA".
- Appropriate signature is required on bottom of this form.
- Remove carbon and retain copy for your records.
- Fold along dotted lines, staple and mail Original to office specified in permit.

PARAMETER	PERMIT CONDITION	QUANTITY				UNITS	NO. EX.	CONCENTRATION				NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		MINIMUM	AVERAGE	MAXIMUM	UNITS			MINIMUM	AVERAGE	MAXIMUM	UNITS			
Brackish Cooling Water Flow	REPORTED	43.2	48.0	61.2		0						Cont.	Based on pumping Cap.	
	PERMIT CONDITION	NONE	NONE	NONE	MGD							Cont.	Based on pumping Cap.	
Brackish Cooling Water Discharge Temp.	REPORTED	70	73	74		0						2/7	Grab	
	PERMIT CONDITION	NONE	93	NONE	°F							2/7	Grab	
Process Effluent Flow	REPORTED	9.8	16.2	18.6		0						Cont.	Integratop Recorder	
	PERMIT CONDITION	NONE	NONE	NONE	MGD							Cont.	Recorder	
Process Effluent pH	REPORTED	7.7	8.1	8.8		0						Cont.	Recorder & 24 Hr. Comp.	
	PERMIT CONDITION	6.0	NONE	9.0	STD. UNITS							Cont.	Recorder	
Process Effluent Temperature	REPORTED	77	81	86		0						Daily	Grab	
	PERMIT CONDITION	NONE	NONE	NONE	°F							2/7	Grab	
Process Effluent BOD <sub>5</sub>	REPORTED	2,800	5,100	7,200		0	21	38	57		0	Daily	24 Hour Composite	
	PERMIT CONDITION	NONE	10,000	32,000	LBS./DAY		NONE	NONE	NONE	Mg/L		Daily	24 Hour Composite	
Process Effluent TSS	REPORTED	6,200	10,300	33,500		0	51	77	103		0	Daily	24 Hour Composite	
	PERMIT CONDITION	NONE	13,000	39,000	LBS./DAY		NONE	NONE	NONE	Mg/L		Daily	24 Hour Composite	

NAME OF PRINCIPAL EXECUTIVE OFFICER John [unclear]	TITLE OF THE OFFICER [unclear]	DATE [unclear]	I certify that I was familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.	Signature of Principal Executive Officer D. Smith Signature of Authorized Agent [unclear]
---	-----------------------------------	-------------------	---	--



KRAFT DIVISION  
P.O. Box 18020  
Jacksonville, Fla. 32229  
904/751-1400

December 30, 1982

Consumptive Use Permit Application - Letter of Explanation

St. Regis Paper Company, Jacksonville Mill, is a wholly integrated pulp and paper mill located in Duval county at 9469 Eastport Road. Other divisions also operate in this county.

The Jacksonville Mill operates 24 hours a day, 7 days a week, 361 days a year, economic shutdowns excepted.

The mill has 12 wells as listed. Seven wells are considered production wells and are equipped with pumps. No. 1 and No. 2 are on standby emergency use basis. Nos. 4, 5, 7, 8, and 9 are used on a rotation basis to produce an average of 20 million gallons per day with a maximum capacity of 28 M.G.D. The mill normally uses 20 M.G.D. with a maximum use of about 25 M.G.D. No. 3 and No. 6 wells were never drilled.

Due to the nature of our production and its dependency on water, our recycle pumps control our daily use. If a large recycle pump tears up and requires several days for repair, our use of fresh water will be near the maximum.

Conservation has always been practiced in our mill with recycles approaching 14. We will continue to look for economical ways to improve the conservation measures.

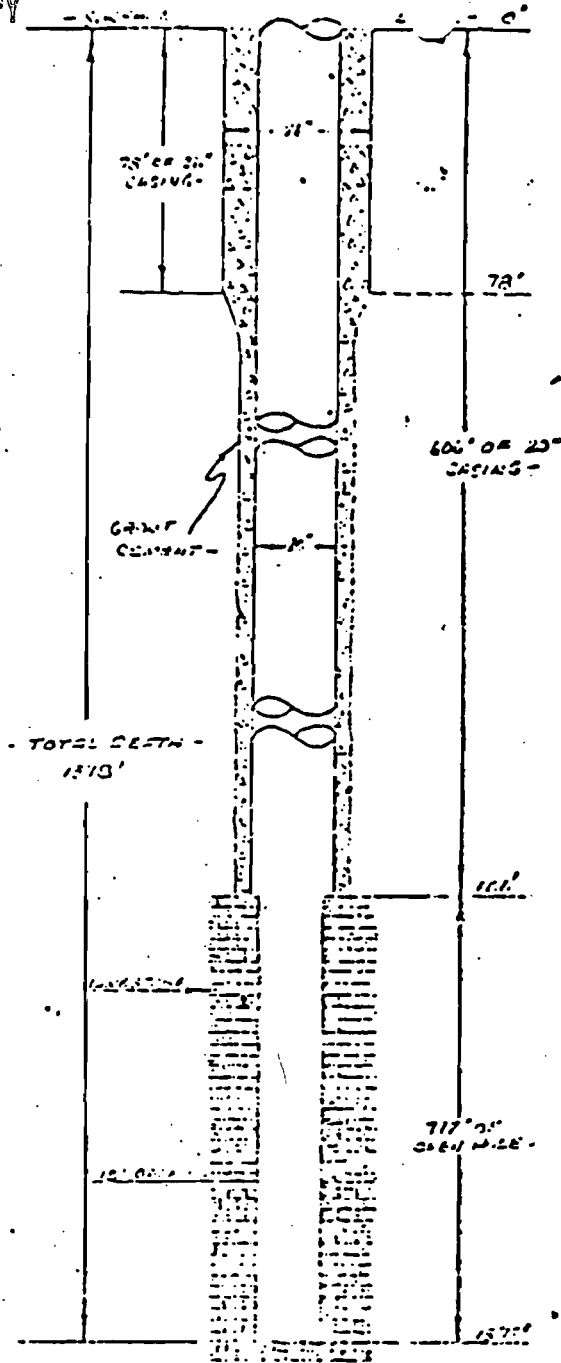
Our waste treatment system is operated under EPA Permit No. FL 0000-400 and State Permit No. 1016-4984.

The attached map shows our well locations and our river water intake.

BEST AVAILABLE COPY

WELL NO 1  
PRODUCTION

172



DATE CASING ORDERED - 5/12/54  
FINISHED ORDERED - 11/12/54

DATE STARTED - 5/12/54  
FINISHED - 7/15/54

NO.		BY		DATE		REVISION		NO.		BY		DATE		REVISION	
DESIGNED BY		CHECKED BY		DATE		PROJECT		NO.		BY		DATE		REVISION	
TITLE		SCALE		DATE		ST. REGIS PAPER CO.		NO.		BY		DATE		REVISION	
ST. REGIS PAPER CO.		JACKSONVILLE, FLA.		DATE		PROJECT		NO.		BY		DATE		REVISION	
ST. REGIS PAPER CO.		JACKSONVILLE, FLA.		DATE		PROJECT		NO.		BY		DATE		REVISION	

STR. NO. 1 Well No. 302510N0P13E02.1

U. S. DEPT. OF THE INTERIOR GEOLOGICAL SURVEY WATER RESOURCES DIVISION

BEST AVAILABLE COPY

Well No. 302510N0P13E02.1

30 25 10 00 P 13 E 02

MASTER CARD

Operator: A. J. Longo Office: ROSELAND Well: 12/1/23 Eastport 7.5 ft

Well No: 302510N0P13E02.1 Section: 0815602 Township: 1

Well Name: 46 Landsgrant Twp 11R SR 1

Well Type: 0-4-P-6 Well Depth: 71-55-3 Production: D-466

Well Status: 0-1-2-7-E-4-6 Well Owner: St. Regis Paper Co.

Well Section: St. Regis PAPER Well Name: JAN 7A

Well Completion: Corp Co.

Well Material: Comm

Well Test: No Measurement

Well Log: \* Partial (OIL & Hardness)

Well Log Type: Original

WELL-DESCRIPTION CARD

DATE OF WELL PASSED CARD: 137P Well No: 1372 Report: 6

Well Depth: 606 Well Name: Iron Well Type: 2:0

Well Material: 5/51 Well Depth: 9.5.1

Well Log: LYONS AZIMUTH Well Name: SADWADCH GA

Well Test: 11' Well Name: TEPP MAP

Well Log: 1400

Well Test: 24

HYDROGEOLOGIC CARD

Well No: 302510N0P13E02.1 Section: 03 Township: 7

Well Name: Sec C Well Type: ST. JOHN R. 09E Well Status: OKLAHOMA 3

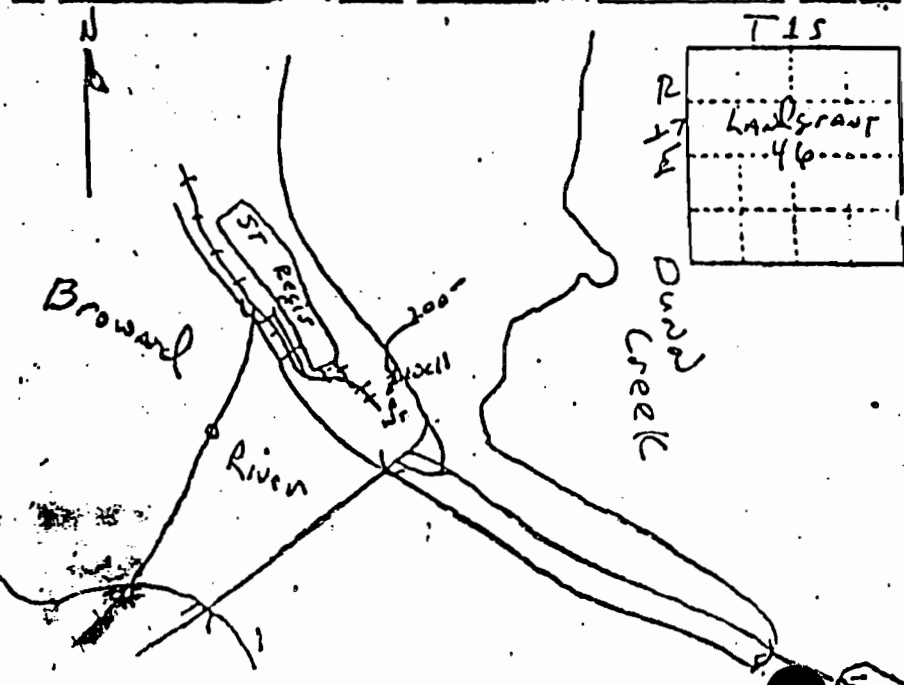
Well Material: FIAT

Well Test: Tertiary Eocene Well Name: 7 Well Type: 1 F

Well Log: Limestone Well Name: 4 Well Type: 6

Well Depth: 772 Well Name: 772

Well Test: 772



302510N0P13E02.1



# REPORT OF WATER ANALYSIS

FROM:  
ST. REGIS  
JACKSONVILLE, FLORIDA

ANALYSIS NO. C497954  
DATE SAMPLED 12/16/74  
DATE RECEIVED 12/30/74  
DATE PRINTED 1/ 9/75

SAMPLE MARKED:  
NO. 1 WELL

CATIONS:	PPM
CALCIUM (CACO3) - SOLUBLE	120.
MAGNESIUM (CACO3) - SOLUBLE	100.
SODIUM (CACO3)	29.
AMMONIA (CACO3)	0.8

ANIONS:	PPM
BICARBONATE ALKALINITY (CACO3)	132.
CARBONATE ALKALINITY (CACO3)	24.
CHLORIDE (CACO3)	31.
SULFATE (CACO3)	93.
NITRATE (CACO3)	*ND (1.)
SILICA (SIO2) - SOLUBLE	26.

OTHERS:	PPM
PH (PH UNITS)	8.3
ALKALINITY (CACO3) - TOTAL	156.
ALKALINITY (CACO3) - PHENOLPHTHALEIN	12.
ALKALINITY (CACO3) - P-BACL2	*ND (2.)
CONDUCTIVITY (MICROMHOS PER CM)	460.
CALCIUM (CACO3) - SOLUBLE AND INSOLUBLE	120.
MAGNESIUM (CACO3) - SOLUBLE AND INSOLUBLE	110.
IRON (FE) - SOLUBLE AND INSOLUBLE	0.2
TOTAL ORGANIC CARBON (C)	4.

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

*James J. Hickey*



# LABORATORY REPORT

**NALCO**

## BEST AVAILABLE COPY WATER ANALYSIS

FROM:  
ST. REGIS PULP AND PAPER COMPANY  
JACKSONVILLE, FLORIDA

ANALYSIS NO. 5  
DATE SAMPLED 3  
DATE RECEIVED 3  
DATE PRINTED 3

SAMPLE MARKED:  
WELL NO. 1

CATIONS:		PPM
CALCIUM (CACO3) - SOLUBLE		130.
MAGNESIUM (CACO3) - SOLUBLE		88.
SODIUM (CACO3)		35.
AMMONIA (CACO3)		*ND (0.

ANIONS:		PPM
BICARBONATE ALKALINITY (CACO3)		146.
CHLORIDE (CACO3)		36.
SULFATE (CACO3)		94.
NITRATE (CACO3)		*ND (1.
SILICA (SIO2) - SOLUBLE		21.

OTHERS:		PPM
PH (PH UNITS)		8.0
ALKALINITY (CACO3) - TOTAL		146.
ALKALINITY (CACO3) - PHENOLPHTHALEIN		*ND (2.)
ALKALINITY (CACO3) - P-BACL2		*ND (2.)
CONDUCTIVITY (MICROMHOS PER CM)		490.
CONDUCTIVITY (MICROMHOS PER CM) - NEUTRALIZED		490.
CALCIUM (CACO3) - SOLUBLE AND INSOLUBLE		130.
MAGNESIUM (CACO3) - SOLUBLE AND INSOLUBLE		88.
IRON (FE) - SOLUBLE AND INSOLUBLE		3.8

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

P. O. BOX 87 • SUGAR LAND, TEXAS 77478

**NALCO** trademarks of Nalco Chemical Company.

**NALCO CHEMICAL COMPANY**  
REGIONAL ANALYTICAL LABORATORIES

2111 E. Dominguez St.  
Carson, CA 90745

6216 W. 66th Place  
Chicago, Illinois 60638

Box 16A  
Paulsboro, NJ 08066

Box 87  
Sugar Land, TX 77478

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**ST. REGIS KRAFT CORP.  
JACKSONVILLE, FLORIDA**

**Identification and Description:**

- Lab. No. P-8596 (G) - Water test well #1 well at 1216' below grd. level. Sampled 6/4/51. Very pale amber, clear.
- Lab. No. P-8905 (P) - Water well No. 1 640' deep. Sampled 6/12/51.
- Lab. No. P-8904 (P) - Water well # 1-1045' deep. Sampled 6/14/51. Water white, clear.

**Chemical Analysis:**

Laboratory No.	P-8596 Hall		P-8905 Hall		P-8904 Hall	
pH Value	7.2		9.3		7.5	
Titration, ml.						
A reading	0.0		0.7		0.0	
B reading						
M. O. reading	10.1		2.4		9.0	
Hardness as CaCO <sub>3</sub> Concentrations	ppm	epm	ppm	epm	ppm	epm
Hydroxide (OH)	0	0.00	0		0	0.00
Carbonate (CO <sub>3</sub> )	0	0.00	14		0	0.00
Bicarbonate (HCO <sub>3</sub> )	206	3.37	20		183	3.00
Iodine Demand as Na <sub>2</sub> SO <sub>3</sub>						
Sulfate (SO <sub>4</sub> )	75	1.56	85		80	1.66
Chloride (Cl)	23	0.65	21		24	0.68
Nitrate (NO <sub>3</sub> )	1	0.02	< 1		1	0.02
Phosphate (PO <sub>4</sub> )						
Silica (SiO <sub>2</sub> )	31		26		30	
Iron (Fe)	0.21		0.37		0.06	
Aluminum (Al)	0.05		No evid.		No evid.	
Calcium (Ca)	54	2.70	filt. 36		58	2.90
Magnesium (Mg)	26	2.10	filt. 3		22	1.78
Sodium (Na)						
Potassium (K)						
Dissolved Solids						
Suspended Solids	est. 6-8		est. 10-12		est. 2-4	
Total Solids						
Hardness as CaCO <sub>3</sub>	240	4.80	filt. 104		234	4.68
Organic (Ether Soluble)						
Conductivity at 77°F				Micromhos/cm		
Manganese	< 0.1		< 0.1		< 0.1	
Color	15-20					
Total Calcium			44			
Total Hardness			130			
Total Magnesium			5			
Free Carbon Dioxide (CO <sub>2</sub> )						
Ammonia (NH <sub>3</sub> )						
Dissolved Solids from Conductivity						

**BEST AVAILABLE COPY**

SOUTHWEST KRAFT CORP.  
EASTPOET, FLORIDA

Identification and Description:

RENUMBERED #2

Lab. No. P-9131 (G) - Water test well No. 3 658 feet. Sampled 6/20/51.  
Water white, clear

Lab. No. P-9166 (F) - Water well No. 1 1378 " deep. Sampled 6/21/51. Water  
white, clear.

Chemical Analysis:

Laboratory No.	P-9131		P-9166	
	Hall		Hall	
pH Value	7.4		7.6	
Titrations, ml.				
A reading	0.0		0.0	
B reading				
M. O. reading	9.7		9.6	
Hardness as CaCO <sub>3</sub>				
Concentrations	ppm	ecm	ppm	ecm
Hydroxide (OH)	0	0.00	0	0.00
Carbonate (CO <sub>3</sub> )	0	0.00	0	0.00
Bicarbonate (HCO <sub>3</sub> )	197	3.23	195	3.20
Iodine Demand as Na <sub>2</sub> SO <sub>3</sub>				
Sulfate (SO <sub>4</sub> )	80	1.66	80	1.66
Chloride (Cl)	24	0.68	24	0.68
Nitrate (NO <sub>3</sub> )	1	0.02	1	0.02
Phosphate (PO <sub>4</sub> )				
Silica (SiO <sub>2</sub> )	31		29	
Iron (Fe)	< 0.05		< 0.05	
Aluminum (Al)	No evid.		No evid.	
Calcium (Ca)	58	2.90	58	2.90
Magnesium (Mg)	23	1.90	21	1.74
Sodium (Na)				
Potassium (K)				
Dissolved Solids				
Suspended Solids	est. 2-4		Negligible	
Total Solids				
Hardness as CaCO <sub>3</sub>	240	4.80	232	4.64
Organic (Ether Soluble)				
Conductivity at 77°F			Micromhos/cm	
Manganese	< 0.1		< 0.1	
Color			< 5	

Free Carbon Dioxide (CO<sub>2</sub>)

Ammonia (NH<sub>3</sub>)

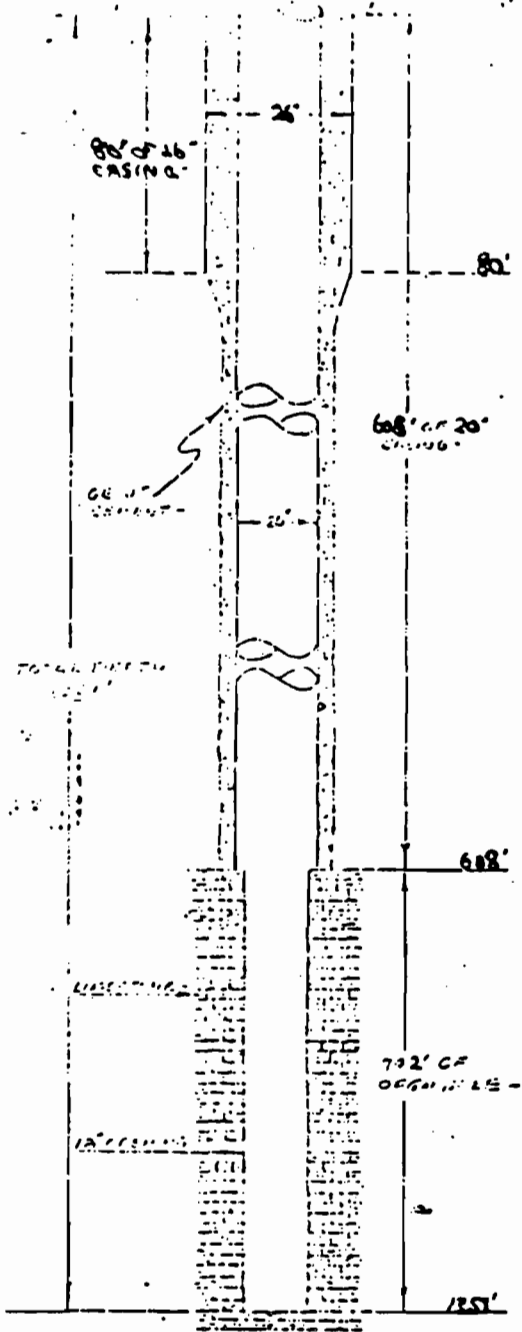
Dissolved Solids from  
Conductivity

RECEIVED  
JUN 21 1951

D 274

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WELL No 2  
PRODUCTION



NO	DATE	REVISION	NO	BY	DATE	REVISION

REFERENCE DRAWINGS		JOB NO		PROJECT		ST. REGIS PAPER CO. Jacksonville, Fla.		
DATE		DATE		TITLE		DRAWING NO. <b>B</b>		
DRAWN BY		CHECKED BY		APPROVED BY		DATE		REVISION

SEABOARD AIR LINE RAILROAD 100 R/W

SEC 1

SEC 18

LITTLE LEAGUE BALLPARK

D-533

ROBERTS SUBDIVISION

TEST WELLS  
St. R. # 2630  
# 2635  
# 32640

Geological Survey

# 70  
D-532

# 71  
D-69

POND

POND

POND

SEC 19

WEBB PLACE

D-564

WOODLANDS GARAGE

CARPENTER & UTAL

STREETS  
MILLSITE

# 4  
D-563

POND

SEC 19

WRIGHT

WEBB PLACE

D-275

SEC 22

SEC 22

AERATED BASINS

RIVER WATER INTAKE  
ACQUIRED JULY 27, 1961  
O. R. VOL. 1344, PGS. 261  
APPROVED BULKHEAD

D-1186

SEC 22

FILL AREA

ST. REGIS BRISTOL DIVISION  
JACKSON

Identification and Description:

Lab. No. P-9650 (P) - Water, well  
Water white, c

Chemical Analysis:

Laboratory No. \_\_\_\_\_

pH Value \_\_\_\_\_

Titration, ml. \_\_\_\_\_

A reading \_\_\_\_\_

B reading \_\_\_\_\_

M. O. reading \_\_\_\_\_

Hardness as CaCO<sub>3</sub> \_\_\_\_\_

Concentrations \_\_\_\_\_

Hydroxide (OH) \_\_\_\_\_

Carbonate (CO<sub>3</sub>) \_\_\_\_\_

Bicarbonate (HCO<sub>3</sub>) \_\_\_\_\_

Iodine Demand as Na<sub>2</sub>SO<sub>3</sub> \_\_\_\_\_

Sulfate (SO<sub>4</sub>) \_\_\_\_\_

Chloride (Cl) \_\_\_\_\_

Nitrate (NO<sub>3</sub>) \_\_\_\_\_

Phosphate (PO<sub>4</sub>) \_\_\_\_\_

Silica (SiO<sub>2</sub>) \_\_\_\_\_

Iron (Fe) \_\_\_\_\_

Aluminum (Al) \_\_\_\_\_

Calcium (Ca) \_\_\_\_\_

Magnesium (Mg) \_\_\_\_\_

Sodium (Na) \_\_\_\_\_

Potassium (K) \_\_\_\_\_

Dissolved Solids \_\_\_\_\_

Suspended Solids \_\_\_\_\_

Total Solids \_\_\_\_\_

Hardness as CaCO<sub>3</sub> \_\_\_\_\_

Organic (Ether Soluble) \_\_\_\_\_

Conductivity at 77°F \_\_\_\_\_

Manganese (mn) \_\_\_\_\_

Free Carbon Dioxide (CO<sub>2</sub>) \_\_\_\_\_

Ammonia (NH<sub>3</sub>) \_\_\_\_\_

Dissolved Solids from \_\_\_\_\_

Conductivity \_\_\_\_\_

5331  
WELL SCHEDULE  
STK. No. 2

WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR GEOLOGICAL SURVEY WATER RESOURCES DIVISION

STATE: Florida

COUNTY: Duval

TOWNSHIP: 27 N

RANGE: 12 E

SECTION: 10

WELL NO.: 1390

WELL NAME: ST. JOHN'S RIVER

WELL TYPE: Artesian

WELL DEPTH: 139.0

WELL STATUS: In use

WELL OWNER: ST. JOHN'S RIVER

WELL LOCATION: Eastport Fla.

WELL PURPOSE: Industrial

WELL DATE: 1969

WELL-DESCRIPTION CARD

WELL NO.: 1390

WELL NAME: ST. JOHN'S RIVER

WELL TYPE: Artesian

WELL DEPTH: 139.0

WELL STATUS: In use

WELL OWNER: ST. JOHN'S RIVER

WELL LOCATION: Eastport Fla.

WELL PURPOSE: Industrial

WELL DATE: 1969

BEST AVAILABLE COPY

30-25-226-1-36-06

HYDROGEOLOGIC CARD

WELL NO.: 1390

WELL NAME: ST. JOHN'S RIVER

WELL TYPE: Artesian

WELL DEPTH: 139.0

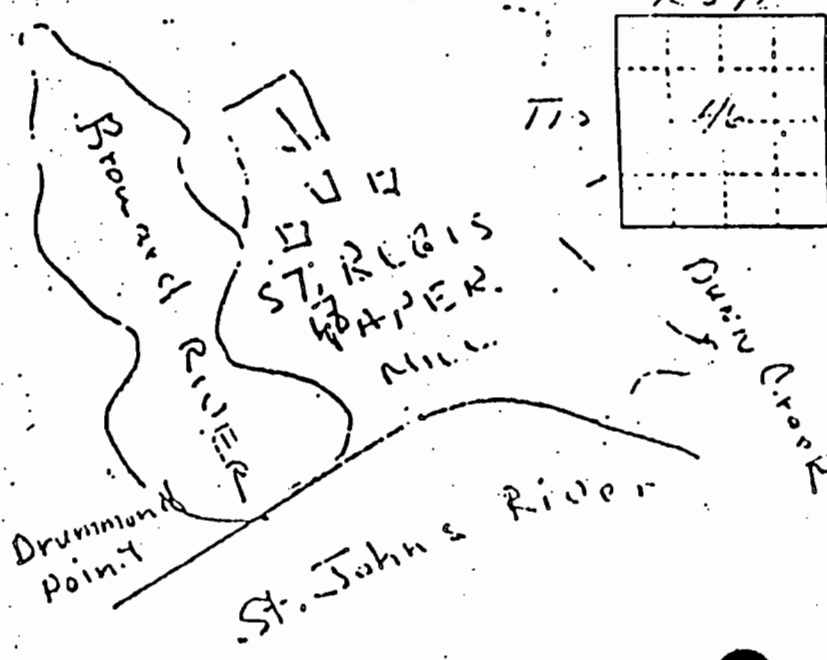
WELL STATUS: In use

WELL OWNER: ST. JOHN'S RIVER

WELL LOCATION: Eastport Fla.

WELL PURPOSE: Industrial

WELL DATE: 1969



30-25-226-1-36-06



REPORT OF

WATER ANALYSIS

FROM:  
ST. REGIS  
JACKSONVILLE, FLORIDA

ANALYSIS NO. 0002955  
DATE SAMPLED 12/16/74  
DATE RECEIVED 12/30/74  
DATE PRINTED 1/ 9/75

SAMPLE MARKED:  
NO. 2 WELL

CATIONS:

CALCIUM (CAC03) - SOLUBLE  
MAGNESIUM (CAC03) - SOLUBLE  
SODIUM (CAC03)  
AMMONIA (CAC03)

29.  
0.2

ANIONS:

BICARBONATE ALKALINITY (CAC  
- CARBONATE ALKALINITY (CAC03)  
CHLORIDE (CAC03)  
SULFATE (CAC03)  
NITRATE (CAC03)  
SILICA (SI02) - SOLUBLE

PPM  
100  
30  
120  
10  
30

OTHERS:

PH (PH UNITS)  
ALKALINITY (CAC03) - TOTAL  
ALKALINITY (CAC03) - PHENO  
ALKALINITY (CAC03) - P-BAC  
CONDUCTIVITY (MICROMHOS PE  
CALCIUM (CAC03) - SOLUBLE  
MAGNESIUM (CAC03) - SOLUBLE  
IRON (FE) - SOLUBLE AND IN  
TOTAL ORGANIC CARBON (C)

MEIN

PH  
3  
100  
10  
100  
100  
100  
100

\*NOT DETECTED (BELOW INSTR



Identification and Description:

- Lab. No. P-9642 (G) - Water, test well No. 2 - 1025' deep. Sampled 7/9/51.  
 Water white, clear.
- Lab. No. P-9551 (P) - Water, well No. 2 - 740' deep. Sampled 7/3/51.  
 Water white, clear.
- Lab. No. P-9552 (P) - Water, well No. 2 - 1136' deep. Sampled 7/5/51.  
 Water white, clear.

Chemical Analysis:

Laboratory No.	P-9642		P-9551		P-9552	
	Ball		Ball		Ball	
pH Value	7.5		7.8		7.8	
Titration, ml						
A reading	0.0		0.0		0.0	
B reading						
M. O. reading	9.0		9.9		9.9	
Hardness as CaCO <sub>3</sub>						
Concentrations	ppm	epm	ppm	epm	ppm	epm
Hydroxide (OH)	0	0.00	0	0.00	0	0.00
Carbonate (CO <sub>3</sub> )	0	0.00	0	0.00	0	0.00
Bicarbonate (HCO <sub>3</sub> )	183	3.00	199	3.27	207	3.30
Iodine Demand as Na <sub>2</sub> SO <sub>3</sub>						
Sulfate (SO <sub>4</sub> )	90	1.66	70	1.46	75	1.56
Chloride (Cl)	24	0.68	23	0.65	23	0.65
Nitrate (NO <sub>3</sub> )	2	0.03	1		1	
Phosphate (PO <sub>4</sub> )						
Silica (SiO <sub>2</sub> )	32		31		30	
Iron (Fe)	< 0.05		< 0.05		< 0.05	
Aluminum (Al)	No evid.		< 0.1		No evid.	
Calcium (Ca)	57	2.85	56	2.80	56	2.80
Magnesium (Mg)	23	1.87	22	1.76	23	1.87
Sodium (Na)						
Potassium (K)						
Dissolved Solids						
Suspended Solids	est. 24		Negligible		Negligible	
Total Solids			30			
Hardness as CaCO <sub>3</sub>	236	4.72	288	4.56	272	4.6
Organic (Ether Soluble)						
Conductivity at 77°F			Micromhos/cm			
Manganese (Mn)	< 0.1		< 0.1		< 0.1	

Free Carbon Dioxide (CO<sub>2</sub>) \_\_\_\_\_  
 Ammonia (NH<sub>3</sub>) \_\_\_\_\_

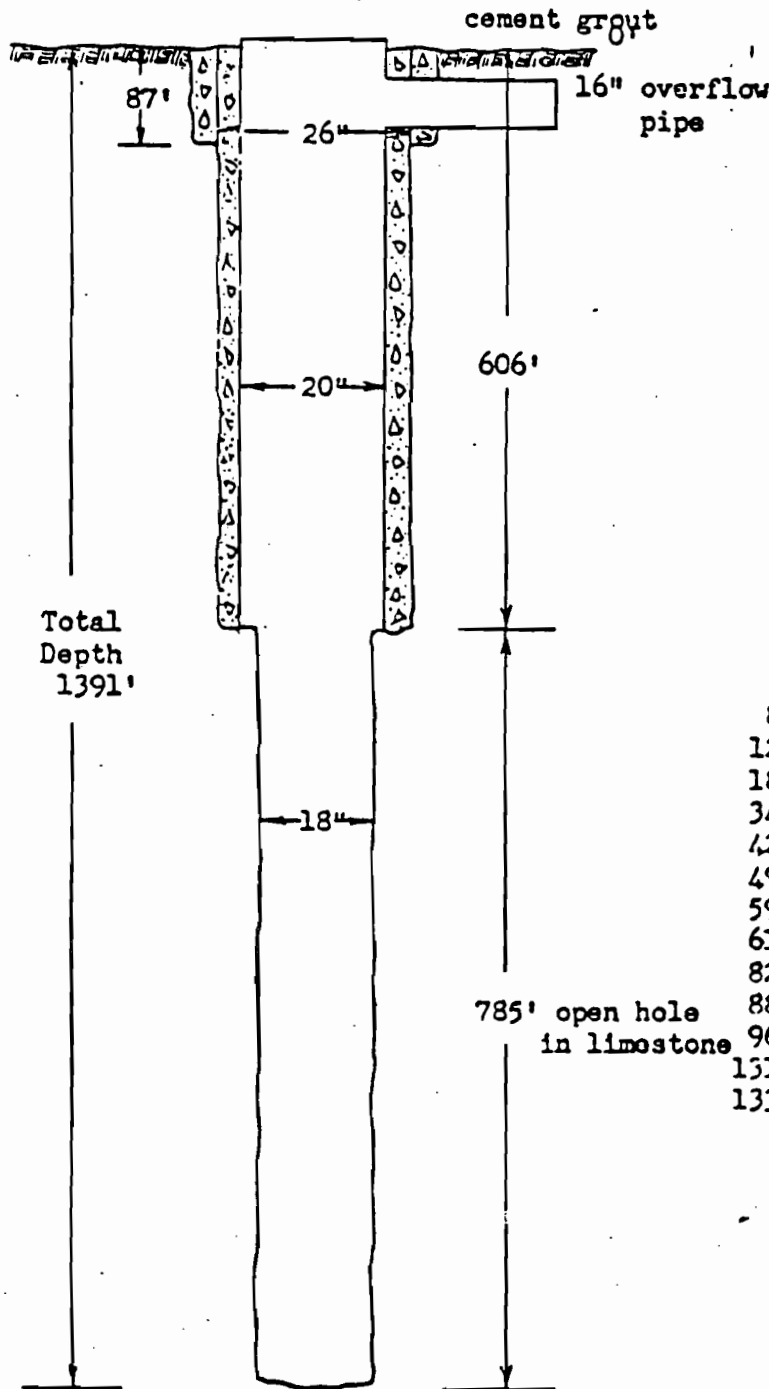
Dissolved Solids from  
 Conductivity \_\_\_\_\_

BEST AVAILABLE COPY

WELL NO. 4

WELL DIAGRAM

WELL DATA



Total depth of well 1391'  
 Casing 606' of 20" steel cas  
 87' of 26" pit casing  
 Cement 400 bags pumped arou  
 casing

PUMP DATA

Static water level  
 Pumping level  
 Drawdown  
 Production

PUMP

FORMATION

- 0-87 Sand
- 87-128 White limestone
- 128-189 Limestone and clay
- 189-342 Blue clay, soft and med.
- 342-420 Blue acid clay and rock
- 420-490 Blue limestone rock, hard
- 490-595 Blue clay and limestone
- 595-617 White limestone, med.
- 617-828 Limestone, med. and hard
- 828-887 Br. limestone, soft and med.
- 887-960 White limestone, med.
- 960-1310 Br. limestone, med. drill
- 1310-1330 Br. limestone, very hard
- 1330-1391 Br. limestone and flint  
 drill very hard

785' open hole  
 in limestone

Total  
 Depth  
 1391'





# REPORT OF WATER ANALYSIS

FROM:  
ST. REGIS  
JACKSONVILLE, FLORIDA

ANALYSIS NO. C497885  
DATE SAMPLED 12/16/74  
DATE RECEIVED 12/27/74  
DATE PRINTED 1/7/75

SAMPLE MARKED:  
NO. 4 WELL

CATIONS:	PPM
CALCIUM (CACO3) - SOLUBLE	140.
MAGNESIUM (CACO3) - SOLUBLE	100.
SODIUM (CACO3)	28.
AMMONIA (CACO3)	0.8

ANIONS:	PPM
BICARBONATE ALKALINITY (CACO3)	126.
CARBONATE ALKALINITY (CACO3)	32.
CHLORIDE (CACO3)	31.
SULFATE (CACO3)	89.
NITRATE (CACO3)	*ND (1.)
SILICA (SI02) - SOLUBLE	28.

OTHERS:	PPM
PH (PH UNITS)	8.4
ALKALINITY (CACO3) - TOTAL	158.
ALKALINITY (CACO3) - PHENOLPHTHALEIN	16.
ALKALINITY (CACO3) - P-BACL2	*ND (2.)
CONDUCTIVITY (MICROMHOS PER CM)	440.
CALCIUM (CACO3) - SOLUBLE AND INSOLUBLE	150.
MAGNESIUM (CACO3) - SOLUBLE AND INSOLUBLE	120.
IRON (FE) - SOLUBLE AND INSOLUBLE	*ND (0.1)

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

*James J. Hickey*



# ANALYTICAL SERVICE LABORATORY REPORT WATER ANALYSIS

FROM:

ST. REGIS PULP AND PAPER COMPANY  
JACKSONVILLE, FLORIDA

ANALYSIS NO. S 48699  
DATE SAMPLED 3/ 9/78  
DATE RECEIVED 3/16/78  
DATE PRINTED 3/22/78

SAMPLE MARKED:  
WELL NO. 4

CATIONS:

	PPM
CALCIUM (CACO3) - SOLUBLE	140.
MAGNESIUM (CACO3) - SOLUBLE	88.
SODIUM (CACO3)	35.
AMMONIA (CACO3)	*ND (0.6)

ANIONS:

	PPM
BICARBONATE ALKALINITY (CACO3)	140.
CHLORIDE (CACO3)	30.
SULFATE (CACO3)	110.
NITRATE (CACO3)	*ND (1.)
SILICA (SIO2) - SOLUBLE	24.

OTHERS:

	PPM
PH (PH UNITS)	7.6
ALKALINITY (CACO3) - TOTAL	140.
ALKALINITY (CACO3) - PHENOLPHTHALEIN	*ND (2.)
ALKALINITY (CACO3) - P-BACL2	*ND (2.)
CONDUCTIVITY (MICROMHOS PER CM)	530.
CONDUCTIVITY (MICROMHOS PER CM) - NEUTRALIZED	530.
CALCIUM (CACO3) - SOLUBLE AND INSOLUBLE	140.
MAGNESIUM (CACO3) - SOLUBLE AND INSOLUBLE	88.
IRON (FE) - SOLUBLE AND INSOLUBLE	5.5

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

P. O. BOX 87 - SUGAR LAND, TEXAS 77478

trademarks of Nalco Chemical Company.

**NALCO CHEMICAL COMPANY**  
REGIONAL ANALYTICAL LABORATORIES

2111 E. Dominguez St.  
Carson, CA 90745

6216 W. 66th Place  
Chicago, Illinois 60638

Box 16A  
Paulsboro, NJ 08068

Box 87  
Sugar Land, TX 77478

BEST AVAILABLE COPY

CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

COMPANY JACKSONVILLE, FLORIDA

JOB NO. 968

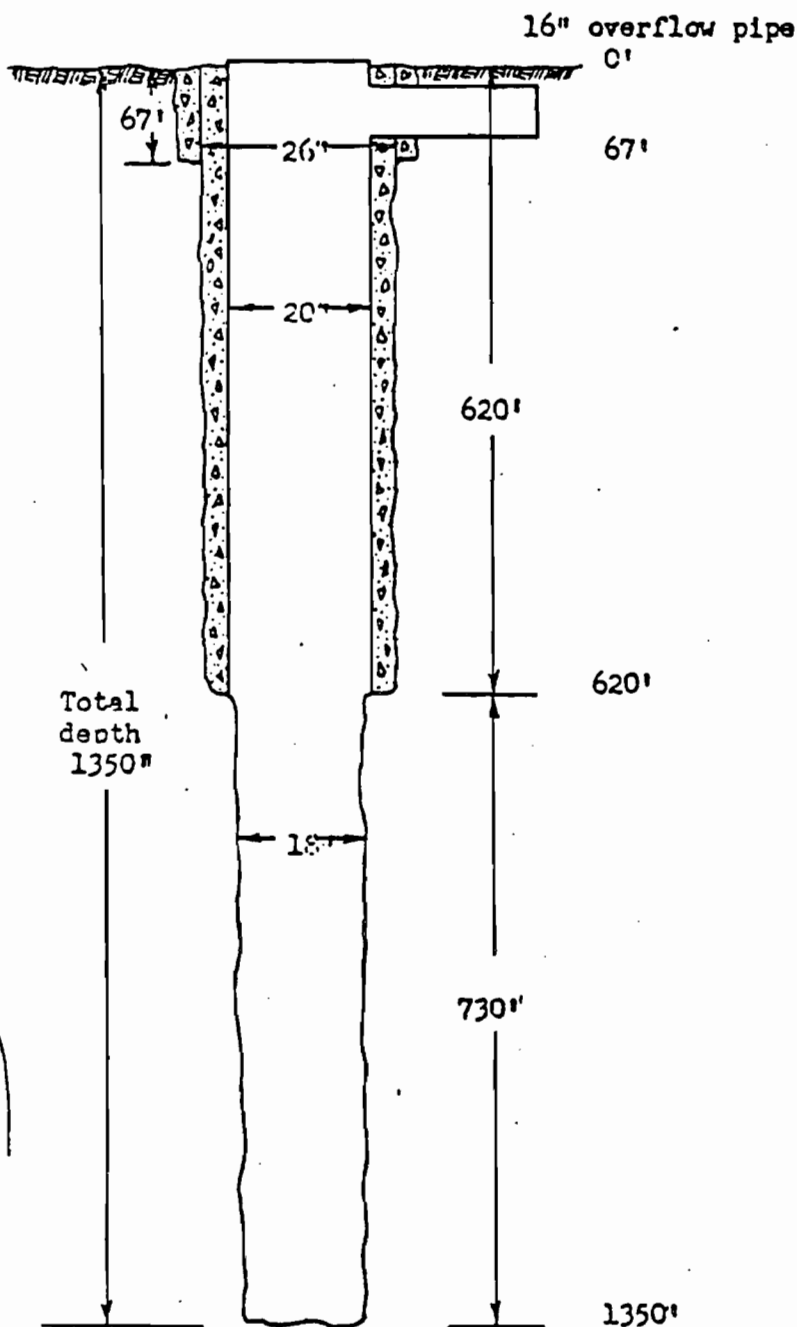
BY: LAYNE ATLANTIC CO.

January 7, 1950

WELL No. 5

WELL DIAGRAM

WELL DATA



Total depth of well 1350'  
 Casing 67' of 26" pit casing  
 620' of 20" steel casing  
 Cement 400 bags pumped around casing

PUMPING DATA

Static water level flowing  
 Pumping level 22.5'  
 Drawdown 22.5'  
 Production 7500 gpm(app.)

PUMP# 33692

FORMATION DATA

- 0-67 Sand
- 67-145 Brown limestone, hard &
- 145-230 Fine sand
- 230-305 Sandy gray and white cla
- 305-338 Gray and white clay
- 338-368 Blue clay
- 368-400 Sandy clay
- 400-418 Sandy clay
- 418-430 Blue clay and rock
- 430-461 Sand and limestone
- 461-532 Blue sandy clay
- 532-584 Sandy clay, limestone
- 584-608 Limestone and blue clay
- 608-630 Limestone, white
- 630-666 White limestone, soft
- 666-690 White limestone, med.
- 690-880 White limestone
- 880-978 Gray limestone
- 978-1256 Brown limestone, hard an  
 soft streaks.
- 1256-1350 White limestone and flin  
 rock, drilled very hard

MASTER CARD

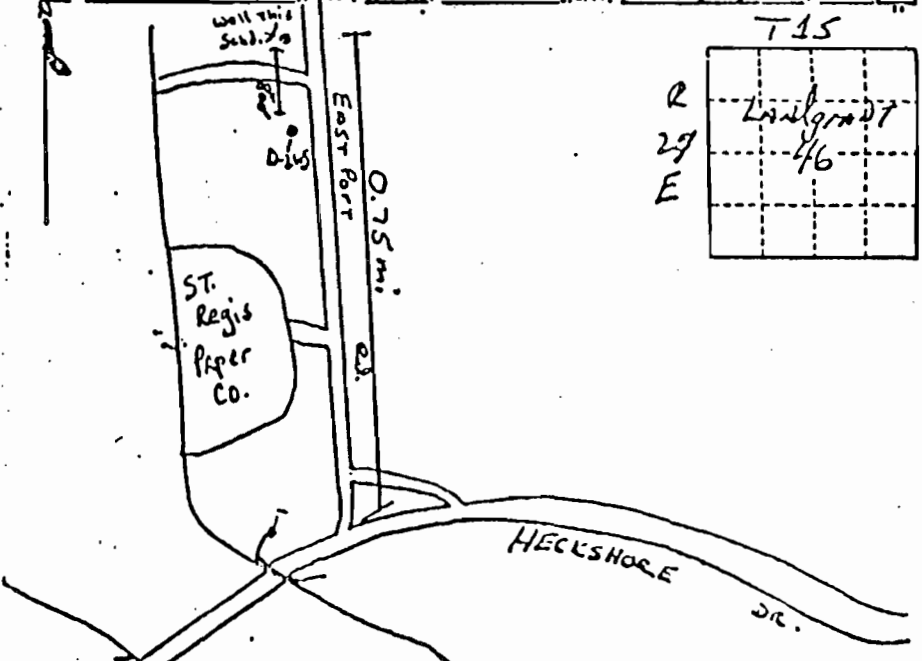
Master Card form with handwritten entries: Record by A. Long, Well No. 302542N0813610.1, Sec 0, T15, R29, E46, ST. REGIS PAPER CO., etc.

WELL-DESCRIPTION CARD

Well-Description Card form with handwritten entries: Depth well 1400, Iron, 20, 14:00, RPTD, etc.

HYDROGEOLOGIC CARD

Hydrogeologic Card form with handwritten entries: Central Plain, ST. JOHN'S R, OKLAHOMA, Territary Eocene, Limestone, etc.



302542N0813610.1

302542N0813610.1



# ANALYTICAL SERVICE LABORATORY REPORT WATER ANALYSIS

FROM:  
ST. REGIS PULP AND PAPER COMPANY  
JACKSONVILLE, FLORIDA

ANALYSIS NO. S 48700  
DATE SAMPLED 3/ 9/78  
DATE RECEIVED 3/16/78  
DATE PRINTED 3/22/78

SAMPLE MARKED:  
WELL NO. 5

CATIONS:	PPM
CALCIUM (CaCO <sub>3</sub> ) - SOLUBLE	140.
MAGNESIUM (CaCO <sub>3</sub> ) - SOLUBLE	88.
SODIUM (CaCO <sub>3</sub> )	35.
AMMONIA (CaCO <sub>3</sub> )	*ND (0.6)

ANIONS:	PPM
BICARBONATE ALKALINITY (CaCO <sub>3</sub> )	144.
CHLORIDE (CaCO <sub>3</sub> )	38.
SULFATE (CaCO <sub>3</sub> )	100.
NITRATE (CaCO <sub>3</sub> )	*ND (1.)
SILICA (SiO <sub>2</sub> ) - SOLUBLE	25.

OTHERS:	PPM
PH (PH UNITS)	7.6
ALKALINITY (CaCO <sub>3</sub> ) - TOTAL	144.
ALKALINITY (CaCO <sub>3</sub> ) - PHENOLPHTHALEIN	*ND (2.)
ALKALINITY (CaCO <sub>3</sub> ) - P-BACL <sub>2</sub>	*ND (2.)
CONDUCTIVITY (MICROMHOS PER CM)	520.
CONDUCTIVITY (MICROMHOS PER CM) - NEUTRALIZED	520.
CALCIUM (CaCO <sub>3</sub> ) - SOLUBLE AND INSOLUBLE	140.
MAGNESIUM (CaCO <sub>3</sub> ) - SOLUBLE AND INSOLUBLE	88.
IRON (FE) - SOLUBLE AND INSOLUBLE	*ND (0.1)

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

P. O. BOX 87 • SUGAR LAND, TEXAS 77478

trademarks of Nalco Chemical Company.

**NALCO CHEMICAL COMPANY**  
REGIONAL ANALYTICAL LABORATORIES

2111 E. Dominguez St.  
Carson, CA 90745

6216 W. 66th Place  
Chicago, Illinois 60638

Box 16A  
Paulsboro, NJ 08066

Box 87  
Sugar Land, TX 77478





# REPORT OF WATER ANALYSIS

FROM:  
ST. REGIS  
JACKSONVILLE, FLORIDA

ANALYSIS NO. C497957  
DATE SAMPLED 12/16/74  
DATE RECEIVED 12/30/74  
DATE PRINTED 1/9/75

SAMPLE MARKED:  
NO. 5 WELL

CATIONS:	PPM
- CALCIUM (CACO3) - SOLUBLE	130.
MAGNESIUM (CACO3) - SOLUBLE	99.
SODIUM (CACO3)	29.
AMMONIA (CACO3)	0.9

ANIONS:	PPM
CHLORIDE (CACO3)	29.
SULFATE (CACO3)	95.
NITRATE (CACO3)	*ND (1.)
SILICA (SI02) - SOLUBLE	31.

OTHERS:	PPM
PH (PH UNITS)	8.1
ALKALINITY (CACO3) - TOTAL	98.
ALKALINITY (CACO3) - PHENOLPHTHALEIN	*ND (2.)
ALKALINITY (CACO3) - P-BACL2	*ND (2.)
CONDUCTIVITY (MICROMHOS PER CM)	480.
CALCIUM (CACO3) - SOLUBLE AND INSOLUBLE	140.
MAGNESIUM (CACO3) - SOLUBLE AND INSOLUBLE	110.
IRON (FE) - SOLUBLE AND INSOLUBLE	0.1

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

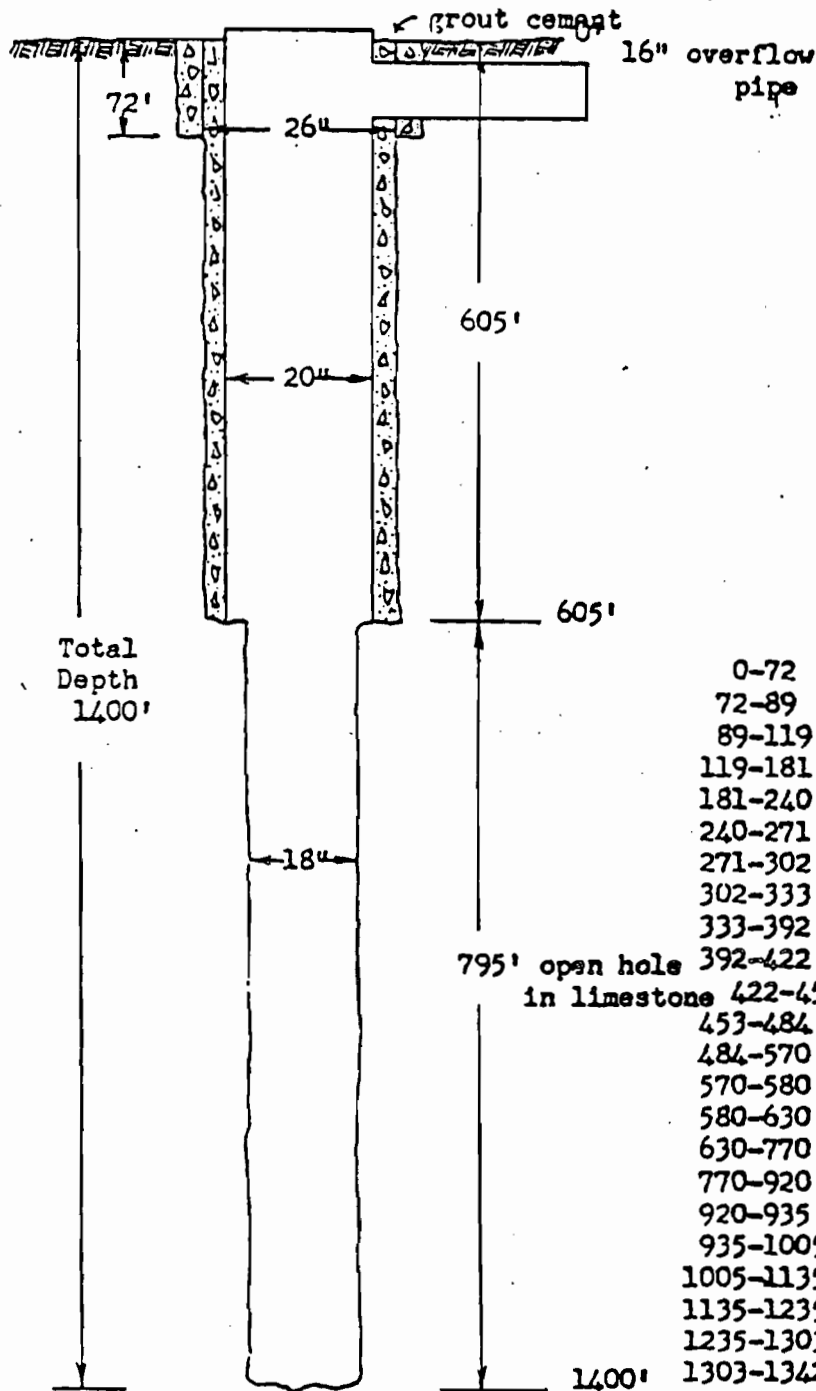
*James J. Hickey*

BEST AVAILABLE COPY

WELL NO. 7

WELL DIAGRAM

WELL DATA



Total depth of well 1400'  
 Casing 72' of 26" pit cas  
 605' of 20" steel c  
 Cement 350 bags pumped ar  
 casing

PUMPING DATA

Static water level  
 Pumping level  
 Drawdown  
 Production 7600 gpm flow

PUMP# 3359

FORMATION DATA

- 0-72 Yellow sand
- 72-89 White sand, shell
- 89-119 Limestone, streaks clay
- 119-181 Blue clay streaks limestone
- 181-240 Blue clay with streaks sand
- 240-271 Fine pepper sand
- 271-302 Fine sand, soft
- 302-333 Fine sand streaks blue clay
- 333-392 Blue sandy clay and rock
- 392-422 Blue and white clay with sand
- 422-453 Blue clay and sand
- 453-484 Blue clay and rock, hard
- 484-570 Blue clay and limestone
- 570-580 Limestone, soft
- 580-630 Limestone, hard
- 630-770 Gray limestone
- 770-920 Brown limestone, soft
- 920-935 Br. limestone, med. hard
- 935-1005 Br. limestone, hard
- 1005-1135 Br. limestone, soft
- 1135-1235 Br. limestone, hard and soft
- 1235-1303 Br. limestone streaks sand
- 1303-1342 Br. and white limestone
- 1342-1355 Br. limestone streaks sand
- 1355-1387 Br. limestone, hard and soft
- 1387-1400 Br. limestone, very hard drill

W.S. Rep. (Dr)  
April 1968

J133  
STK. NO. 1

Well No. 30260710813616.1

WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR GEOLOGICAL SURVEY WATER RESOURCES DIVISION

MASTER CARD M.H.

Well log No. 8-7-69 7.5 mi Quad  
 State Florida 019 Duval 11A  
 Latitude 3:02:6 0:2 W Longitude 0:8:13:6 1:6  
 Well depth 219 ft 46 Land Grant Tallahassee  
 Well No. D-69 W-3974  
 Well name W-3974 01:5:2:7:4:6 St. Regis Paper Co.  
 Name of owner ST. REGIS PAPER CO. Jacksonville, Fla.  
 Ownership (1) County, Fed Gov't, State, Corp or Co, Private, State Agency, Water Dist, Other (2) N  
 Size of well (1) Air cond, drilling, conn, breaker, pump, pipe, box, log, and (2) 8, 10, 12, 14, 16, 18, 20, 24, 30, 36, 42, 48, 54, 60, 72, 84, 96, 108, 120, 144, 168, 192, 216, 240, 270, 300, 324, 360, 400, 450, 500, 540, 600, 660, 720, 780, 840, 900, 960, 1080, 1200, 1320, 1440, 1560, 1680, 1800, 1920, 2160, 2400, 2700, 3000, 3240, 3600, 4000, 4500, 5000, 5400, 6000, 6600, 7200, 7800, 8400, 9000, 9600, 10800, 12000, 13200, 14400, 15600, 16800, 18000, 19200, 21600, 24000, 27000, 30000, 32400, 36000, 40000, 45000, 50000, 54000, 60000, 66000, 72000, 78000, 84000, 90000, 96000, 108000, 120000, 132000, 144000, 156000, 168000, 180000, 192000, 216000, 240000, 270000, 300000, 324000, 360000, 400000, 450000, 500000, 540000, 600000, 660000, 720000, 780000, 840000, 900000, 960000, 1080000, 1200000, 1320000, 1440000, 1560000, 1680000, 1800000, 1920000, 2160000, 2400000, 2700000, 3000000, 3240000, 3600000, 4000000, 4500000, 5000000, 5400000, 6000000, 6600000, 7200000, 7800000, 8400000, 9000000, 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# REPORT OF WATER ANALYSIS

BEST AVAILABLE COPY

FROM:  
ST. REGIS  
JACKSONVILLE, FLORIDA

ANALYSIS NO. C49795R  
DATE SAMPLED 12/16/74  
DATE RECEIVED 12/30/74  
DATE PRINTED 1/29/75

SAMPLE MARKED:  
NO. 7 WELL

CATIONS:	PPM
CALCIUM (CACO3) - SOLUBLE	140.
MAGNESIUM (CACO3) - SOLUBLE	110.
SODIUM (CACO3)	32.
AMMONIA (CACO3)	0.5

-ANIONS:	PPM
BICARBONATE ALKALINITY (CACO3)	130
CARBONATE ALKALINITY (CACO3)	27
CHLORIDE (CACO3)	3
SULFATE (CACO3)	120
NITRATE (CACO3)	*ND (1)
SILICA (SI02) - SOLUBLE	25

OTHERS:	PPM
PH (PH UNITS)	8.1
ALKALINITY (CACO3) - TOTAL	157
ALKALINITY (CACO3) - PHENOLPHTHALEIN	12
ALKALINITY (CACO3) - P-BACL2	*ND (2)
CONDUCTIVITY (MICROMHOS PER CM)	500.
CALCIUM (CACO3) - SOLUBLE AND INSOLUBLE	140.
MAGNESIUM (CACO3) - SOLUBLE AND INSOLUBLE	110.
IRON (FE) - SOLUBLE AND INSOLUBLE	0.2

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

*James J. Hickey*



# ANALYTICAL SERVICE LABORATORY REPORT WATER ANALYSIS

FROM:  
ST. REGIS PULP AND PAPER COMPANY  
JACKSONVILLE, FLORIDA

ANALYSIS NO. 8  
DATE SAMPLED 3/15/78  
DATE RECEIVED 3/16/78  
DATE PRINTED 3/22/78

SAMPLE MARKED:  
WELL NO. 7

### CATIONS:

CALCIUM (CACO3) - SOLUBLE  
MAGNESIUM (CACO3) - SOLUBLE  
SODIUM (CACO3)  
AMMONIA (CACO3)

1  
2  
\*ND (0.5)

### ANIONS:

BICARBONATE ALKALINITY (CACO3)  
CHLORIDE (CACO3)  
SULFATE (CACO3)  
NITRATE (CACO3)  
SILICA (SIO2) - SOLUBLE

1  
2  
3  
4  
5

### OTHERS:

PH (PH UNITS)  
ALKALINITY (CACO3) - TOTAL  
ALKALINITY (CACO3) - PHENOLPHTHALEIN  
ALKALINITY (CACO3) - P-BACL2  
CONDUCTIVITY (MICROMHOS PER CM)  
CONDUCTIVITY (MICROMHOS PER CM) - NEUTRALIZED  
CALCIUM (CACO3) - SOLUBLE AND INSOLUBLE  
MAGNESIUM (CACO3) - SOLUBLE AND INSOLUBLE  
IRON (FE) - SOLUBLE AND INSOLUBLE

PPM  
7.6  
146.  
\*ND (2.0)  
\*ND (2.0)  
140.  
510.  
150.  
71.  
\*ND (0.1)

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

*Alton P. [Signature]*

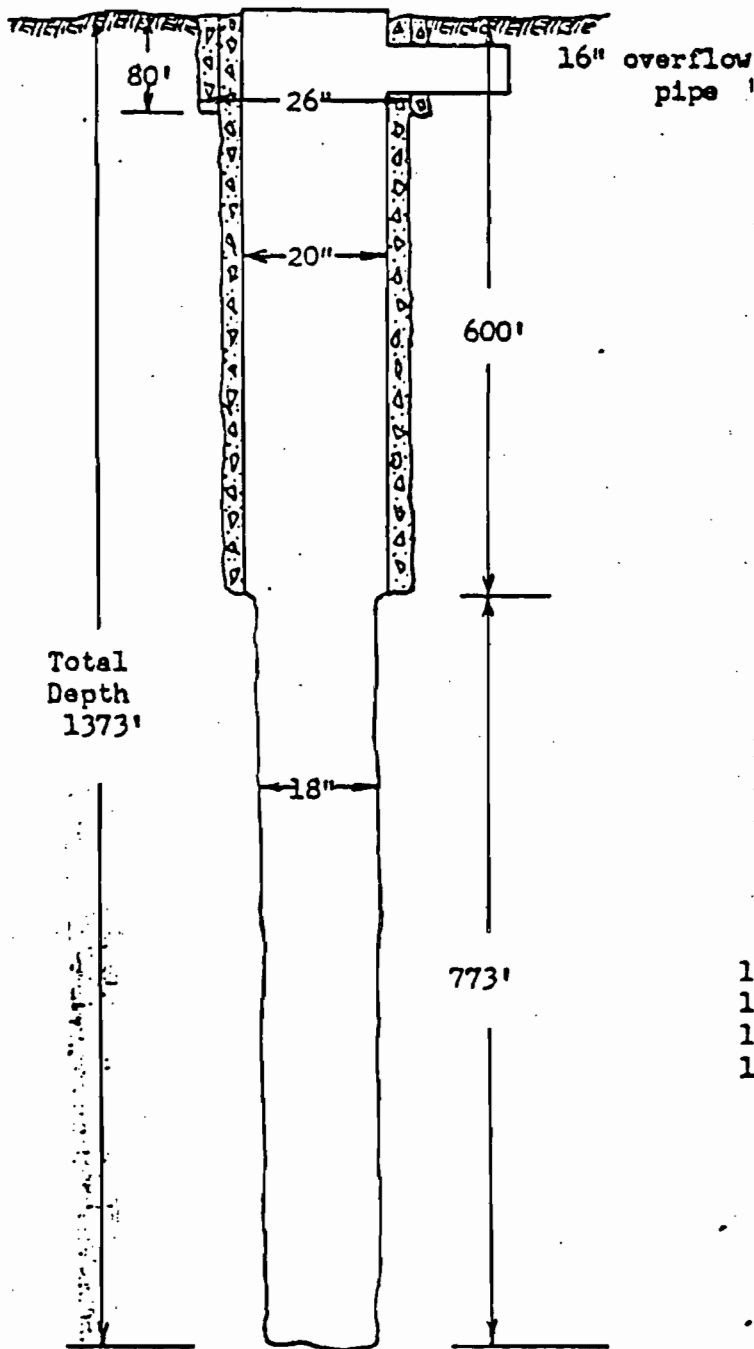
P. O. BOX 87 • SUGAR LAND, TEXAS 77478

BEST AVAILABLE COPY

WELL NO. 8

WELL DIAGRAM

WELL DATA



Total depth of well 1373'  
 Casing 80' of 26" pit casin  
 600' of 20" steel cas  
 Cement 350 bags pumped around casing

PUMPING DATA

Static water level  
 Pumping level  
 Drawdown  
 Production

PUMP# 33694

FORMATION DATA

- 0-80 Sand
- 80-100 White sand, soft
- 100-180 Grey limestone, hard sc
- 180-210 Clay streaks limestone
- 210-300 Blue clay and sand
- 300-360 Blue clay and shell, ha
- 360-520 Blue clay and sand
- 520-590 Blue and white clay, li
- 590-1054 Limestone, med. hard
- 1054-1263 Br. limestone, hard and
- 1268-1282 Br. limestone, hard
- 1283-1295 Limestone and flint roc
- 1293-1375 Brown limestone and fli  
 rock, drilled very hard



# REPORT OF WATER ANALYSIS

From  
ST. REGIS  
JACKSONVILLE, FLORIDA

Analysis No. 433311  
Sampling Date 7/26/72  
Date Sample Rec'd. 8/7/72

Sample Marked  
WELL NO. 8

(To convert parts per million to grains per gallon, divide by 17.1)

Parts per million		Parts per m.	
Total Dis. Solids.....	380.	Chloride (NaCl).....	25 42.
Suspended Solids.....		Sulfate (Na <sub>2</sub> SO <sub>4</sub> ).....	94 139
Total Hard. (CaCO <sub>3</sub> ).....	247.	Ortho. PO <sub>4</sub> .....	0.
Ca. Hard. (CaCO <sub>3</sub> ).....	144.	Total PO <sub>4</sub> .....	- 0.
Mg. Hard. (CaCO <sub>3</sub> ).....	103.	Total Filtered PO <sub>4</sub> .....	0.
Ph. Alk. (CaCO <sub>3</sub> ).....	0.	Silica (SiO <sub>2</sub> ).....	34.
P(BaCl <sub>2</sub> ) Alk. (CaCO <sub>3</sub> ).....		Total Iron (Fe).....	TRACE <
Total Alk. (CaCO <sub>3</sub> ).....	164.	Alumina (Al <sub>2</sub> O <sub>3</sub> ).....	
Total (Calc.) Alk. (CaCO <sub>3</sub> ).....		Nitrate (NO <sub>3</sub> ).....	
		Total Extractable.....	

• ESTIMATED

pH ..... 7.6

Color No. ....

*James J. Hickey*







# ANALYTICAL SERVICE LABORATORY REPORT WATER ANALYSIS

FROM:

ST. REGIS PULP AND PAPER COMPANY  
JACKSONVILLE, FLORIDA

ANALYSIS NO. S 48702  
DATE SAMPLED 3/ 9/78  
DATE RECEIVED 3/16/78  
DATE PRINTED 3/22/78

SAMPLE MARKED:  
WELL NO. 8

CATIONS:

	PPM
CALCIUM (CACO3) - SOLUBLE	150.
MAGNESIUM (CACO3) - SOLUBLE	92.
SODIUM (CACO3)	35.
AMMONIA (CACO3)	*ND (0.6)

ANIONS:

	PPM
BICARBONATE ALKALINITY (CACO3)	156.
CHLORIDE (CACO3)	38.
SULFATE (CACO3)	98.
NITRATE (CACO3)	*ND (1.)
SILICA (SIO2) - SOLUBLE	25.

OTHERS:

	PPM
PH (PH UNITS)	8.0
ALKALINITY (CACO3) - TOTAL	156.
ALKALINITY (CACO3) - PHENOLPHTHALEIN	*ND (2.)
ALKALINITY (CACO3) - P-BACL2	*ND (2.)
CONDUCTIVITY (MICROMHOS PER CM)	530.
CONDUCTIVITY (MICROMHOS PER CM) - NEUTRALIZED	530.
CALCIUM (CACO3) - SOLUBLE AND INSOLUBLE	150.
MAGNESIUM (CACO3) - SOLUBLE AND INSOLUBLE	92.
IRON (FE) - SOLUBLE AND INSOLUBLE	0.1

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

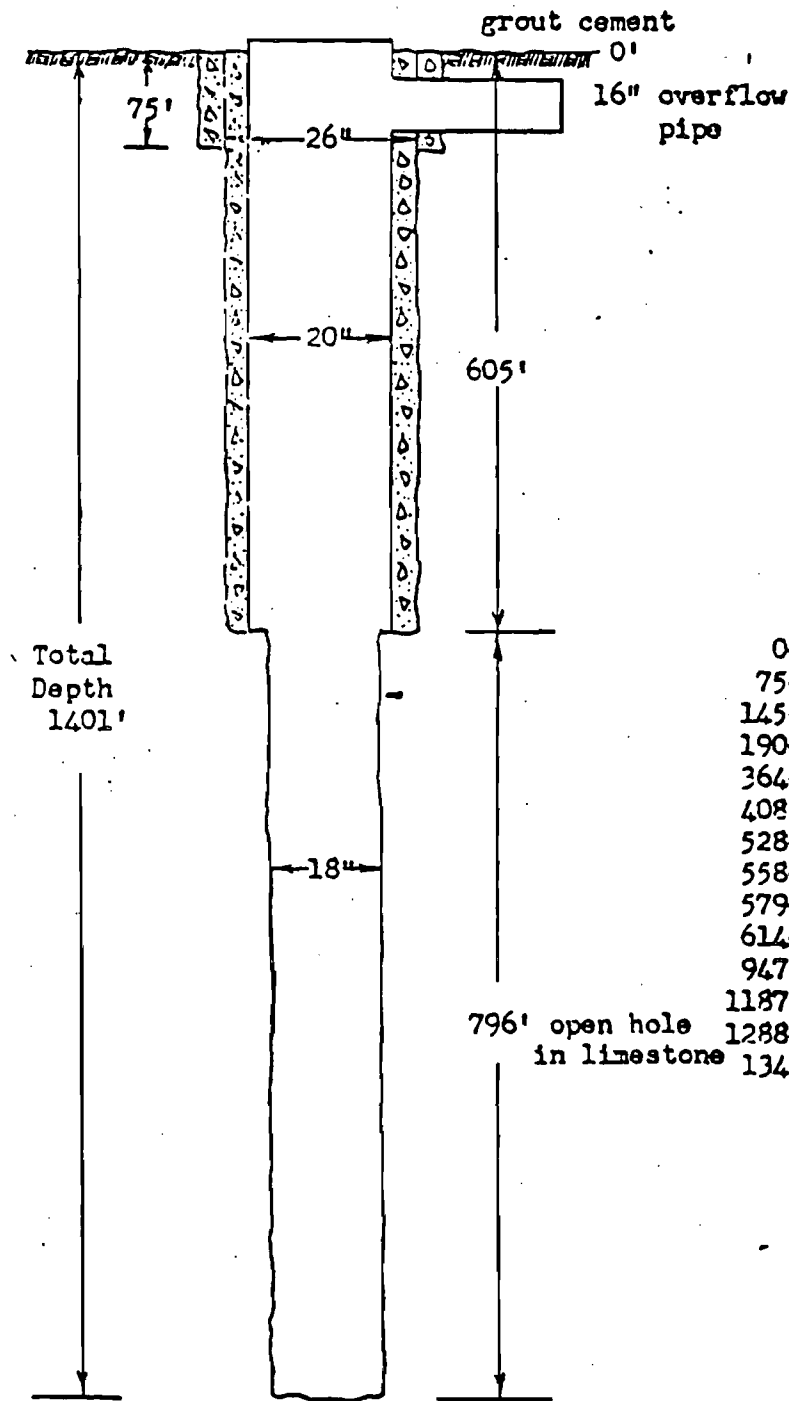
P. O. BOX 87 • SUGAR LAND, TEXAS 77478

BEST AVAILABLE COPY

WELL NO. 9

WELL DIAGRAM

WELL DATA



Total depth of well 1401'  
 Casing 75' of 26" pit casing  
 605' of 20" steel casing  
 Cement 400 bags pumped around casing

PUMPING DATA

Static water level  
 Pumping level  
 Drawdown  
 Production 7600 gpm flowing

PUMP# 33695

FORMATION DATA

0-75 Sand  
 75-145 Limestone, streaks blue clay  
 145-190 Blue clay streaks limestone  
 190-364 Blue clay streaks sand  
 364-408 Blue clay, soft  
 408-528 Blue clay, sand and shell  
 528-558 Sand and shell, med.  
 558-579 Sand and streaks limestone  
 579-614 Limestone, med.  
 614-947 White limestone, hard and  
 947-1187 Br. limestone, med. hard  
 1187-1288 Br. limestone streaks white  
 1288-1340 Br. limestone, hard  
 1340-1401 Br. limestone and flint  
 drilled very hard



# REPORT OF WATER ANALYSIS

FROM:  
ST. REGIS  
JACKSONVILLE, FLORIDA

ANALYSIS NO. C497960  
DATE SAMPLED 12/16/74  
DATE RECEIVED 12/30/74  
DATE PRINTED 1/ 9/75

SAMPLE MARKED:  
NO. 9 WELL

CATIONS:	PPM
CALCIUM (CAC03) - SOLUBLE	140.
MAGNESIUM (CAC03) - SOLUBLE	120.
SODIUM (CAC03)	36.
AMMONIA (CAC03)	0.7

ANIONS:	PPM
BICARBONATE ALKALINITY (CAC03)	130.
CARBONATE ALKALINITY (CAC03)	28.
CHLORIDE (CAC03)	33.
SULFATE (CAC03)	130.
NITRATE (CAC03)	*ND (1.)
SILICA (SI02) - SOLUBLE	31.

OTHERS:	PPM
PH (PH UNITS)	8.2
ALKALINITY (CAC03) - TOTAL	158.
ALKALINITY (CAC03) - PHENOLPHTHALEIN	14.
ALKALINITY (CAC03) - P-BACL2	*ND (2.)
CONDUCTIVITY (MICROMHOS PER CM)	500.
CALCIUM (CAC03) - SOLUBLE AND INSOLUBLE	140.
MAGNESIUM (CAC03) - SOLUBLE AND INSOLUBLE	120.
IRON (FE) - SOLUBLE AND INSOLUBLE	0.7
TOTAL ORGANIC CARBON (C)	16.

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

*James J. Hickey*

12901.01/SAPTOC.AES/BAI/083088

APPENDIX A  
WELL SAMPLE RECORDS

# WELL SAMPLE RECORD

 PROJECT AES

 DATE 7/20/88

 PROJECT NO. 12902-01

 SAMPLED BY P. Shumate, M. Hampton

WELL I.D.	DEPTH TO WATER (FT. BMP)	TOTAL WELL DEPTH (FT. BMP)	WELL TYPE AND DIAMETER	WATER VOLUME IN WELL (GAL.)	PURGE RATE (GPM)	DURATION OF PURGING (MIN.)	VOLUME PURGED (GAL.)	PURGE METHOD	METHOD OF SAMPLE COLLECTION	DATE OF SAMPLE COLLECTION	TIME OF SAMPLE COLLECTION	SAMPLE TEMP. (°C)	SAMPLE PH	SAMPLE CONDUCTIVITY UMHOS/CM	COMMENTS (ODOR, COLOR, ETC.)
mw1	11.96	20.30	2" PVC	1.36	2	13	26	C	TB	7/8/88	915	25°C	9.90	700	
mw2	8.41	15.33	2" PVC	1.13	1.5	25	37.5	C	TB	7/8/88	1045	25°C	11.70	22000	
mw3	4.92	10.35	2" PVC	.89	1.5	15	22.5	C	TB	7/8/88	1155	26°C	8.00	3500	
mw4	5.47	9.65	2" PVC	.68	1.2	10	12	C	TB	7/8/88	1855	28°C	11.55	NA	meter broken
mw5	11.01	20.50	2" PVC	1.54	2.0	27	54	C	TB	7/8/88	1815	26°C	8.10	4000	
mw6	13.53	20.13	2" PVC	1.08	.25	12	3	B	TB	7/8/88	1930	25°C	10.40	NA	meter broken
mw7	11.18	13.37	2" PVC	.36	.25	10	2.5	C	TB	7/8/88	1440	29°C	7.03	130	
mw8	5.91	8.30	2" PVC	.38	.08	15	1.2	C	TB	7/8/88	1540	27°C	6.60	540	
mw9	4.89	7.33	2" PVC	.40	.18	8	1.5	B	TB	7/8/88	1605	27°C	6.90	1200	
mw10	6.18	8.35	2" PVC	.35	.10	20	2.0	P	TB	7/8/88	1655	27°C	6.70	480	
mw11	6.41	9.0	2" PVC	.42	.13	20	2.5	P	TB	7/8/88	1715	27°C	6.70	620	
mw12	6.88	8.5	2" PVC	.26	.13	15	2.0	P	TB	7/8/88	1735	27°C	6.80	210	

PURGE AND COLLECTION METHODS: C - CENTRIFUGAL PUMP  
P - PERISTALTIC PUMP

TB - TEFLON BAILER  
PB - PVC BAILER

X - OTHER

# WELL SAMPLE RECORD

PROJECT AES

DATE 7/20/88

PROJECT NO. 12902-01

SAMPLED BY NA

WELL I.D.	DEPTH TO WATER (FT. BMP)	TOTAL WELL DEPTH (FT. BMP)	WELL TYPE AND DIAMETER	WATER VOLUME IN WELL (GAL.)	PURGE RATE (GPM)	DURATION OF PURGING (MIN.)	VOLUME PURGED (GAL.)	PURGE METHOD	METHOD OF SAMPLE COLLECTION	DATE OF SAMPLE COLLECTION	TIME OF SAMPLE COLLECTION	SAMPLE TEMP. (C)	SAMPLE PH	SAMPLE CONDUCTIVITY UMHOS/CM	COMMENTS (ODOR, COLOR, ETC.)
PZ1	10.84	13.85	2" PVC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	water level only
PZ2	6.40	9.73	2" PVC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	water level only
PZ3	10.69	20.32	2" PVC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	water level only
Staff guage	gauge reading 2.80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	total depth of guage = 6.66'

PURGE AND COLLECTION METHODS: C - CENTRIFUGAL PUMP  
 P - PERISTALTIC PUMP

TB - TEFLON BAILER  
 PB - PVC BAILER

X - OTHER

12901.01/SAPTOC.AES/BAI/083088

APPENDIX C-1  
ANALYTICAL DATA SUMMARY TABLES

12902.01/70C2.WRI/HR/SB/080888

## PAINT SHED GROUND WATER SAMPLES

## AES CEDAR BAY

PARAMETERS	UNITS	MW-10	MW-11	MW-12
<b>EPA METHOD 601</b>				
Bromodichloromethane	ug/L	<1.0	<1.0	<1.0
Bromoform	ug/L	<1.0	<1.0	<1.0
Bromomethane	ug/L	<1.0	<1.0	<1.0
Carbon Tetrachloride	ug/L	<1.0	<1.0	<1.0
Chlorobenzene	ug/L	<1.0	<1.0	<1.0
Chloroethane	ug/L	<1.0	<1.0	<1.0
Chloroform	ug/L	<1.0	<1.0	<1.0
Chloromethane	ug/L	<1.0	<1.0	<1.0
Cis-1,3-Dichloropropene	ug/L	<1.0	<1.0	<1.0
Dibromochloromethane	ug/L	<1.0	<1.0	<1.0
Dichlorodifluoromethane	ug/L	<1.0	<1.0	<1.0
Methylene Chloride	ug/L	<1.0	<1.0	<1.0
Tetrachloroethene	ug/L	<1.0	<1.0	<1.0
Trans-1,2-Dichloroethene	ug/L	<1.0	<1.0	<1.0
Trans-1,3-Dichloropropene	ug/L	<1.0	<1.0	<1.0
Trichloroethene	ug/L	<1.0	<1.0	<1.0
Trichlorofluoromethane	ug/L	<1.0	<1.0	<1.0
Vinyl Chloride	ug/L	<1.0	<1.0	<1.0
1,1-Dichloroethane	ug/L	<1.0	<1.0	<1.0
1,1,1-Dichloroethene	ug/L	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	ug/L	<1.0	<1.0	<1.0
1,1,2-Trichloroethane	ug/L	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	<1.0	<1.0	<1.0
1,2-Dichloroethane	ug/L	<1.0	<1.0	<1.0
1,2-Dichloropropane	ug/L	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	ug/L	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	<1.0	<1.0	<1.0
2-Chloroethylvinyl Ether	ug/L	<1.0	<1.0	<1.0
<b>EPA METHOD 602</b>				
Benzene	ug/L	<1.0	<1.0	<1.0
Chlorobenzene	ug/L	<1.0	<1.0	<1.0
Ethyl Benzene	ug/L	<1.0	<1.0	<1.0
Toluene	ug/L	<1.0	<1.0	<1.0
Xylene	ug/L	<2.0	<2.0	<2.0
1,2-Dichlorobenzene	ug/L	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	ug/L	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	<1.0	<1.0	<1.0
<b>SOLVENTS</b>				
Methyl Ethyl Ketone	ug/L	<30	<30	<30
<b>DISSOLVED METALS</b>				
Cadmium	ng/L	<0.005	<0.005	<0.005
Chromium	ng/L	<0.01	<0.01	<0.01
Lead	ng/L	<5	<5	<5
Nickel	ng/L	<0.02	<0.02	<0.02
Zinc	ng/L	0.07	0.42	0.22



12902.01/VOC2.WR1/HR/SB/080888

PITCH AND FUEL OIL TANK GROUND WATER SAMPLES

ARS CEDAR BAY

PARAMETERS	UNITS	MW-6	MW-7	MW-8	MW-9
<u>EPA METHOD 610</u>					
Acenaphthene	ng/L	<0.005	<0.005	<0.005	<0.005
Acenaphthylene	ng/L	<0.005	<0.005	<0.005	<0.005
Benzo (a) Anthracene	ng/L	<0.005	<0.005	<0.005	<0.005
Benzo (a) Pyrene	ng/L	<0.005	<0.005	<0.005	<0.005
Benzo (b) Fluoranthene	ng/L	<0.005	<0.005	<0.005	<0.005
Benzo (g,h,i) Perylene	ng/L	<0.005	<0.005	<0.005	<0.005
Benzo (k) Fluoranthene	ng/L	<0.005	<0.005	<0.005	<0.005
Chrysene	ng/L	<0.005	<0.005	<0.005	<0.005
Dibenzo(a,b)Anthracene	ng/L	<0.005	<0.005	<0.005	<0.005
Fluoranthene	ng/L	<0.005	<0.005	<0.005	<0.005
Fluorene	ng/L	<0.005	<0.005	<0.005	<0.005
Ideno(1,2,3-cd)Pyrene	ng/L	<0.005	<0.005	<0.005	<0.005
Naphthalene	ng/L	<0.005	<0.005	<0.005	0.014
Phenanthrene & Anthracene	ng/L	<0.005	<0.005	<0.005	<0.005
Pyrene	ng/L	<0.005	<0.005	<0.005	<0.005

12902.01/70C2.WR1/MH/SB/080888

SPOIL PILES, GROUND WATER SAMPLES AND SURFACE WATER SAMPLES

AES CEDAR BAY

PARAMETERS	UNITS	MH-1	MH-2	MH-3	MH-4	SW-1	SW-2
<b>RPA METHOD 624</b>							
Acrolein	ug/L	<250	<250	<250	<250	<25	<25
Acrylonitrile	ug/L	<250	<250	<250	<250	<25	<25
Benzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Bromodichloromethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
Bromoform	ug/L	<10	<10	<10	<10	<1.0	<1.0
Bromomethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
Carbon Tetrachloride	ug/L	<10	<10	<10	<10	<1.0	<1.0
Chlorobenzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Chloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
Chloroform	ug/L	<10	<10	<10	<10	<1.0	1.4
Chloromethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
Cis-1,3,-Dichloropropene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Ethyl Benzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Methylene Chloride	ug/L	<10	<10	<10	<10	<1.0	<1.0
Tetrachloroethene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Toluene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Trans-1,2-Dichloroethene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Trans-1,3-Dichloropropene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Trichloroethene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Trichlorofluoromethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
Vinyl Chloride	ug/L	<10	<10	<10	<10	<1.0	<1.0
Xylene	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,1-Dichloroethene	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,1,1-Trichloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,1,2-Trichloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,2-Dichloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,2-Dichloropropane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,3-Dichlorobenzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
2-Chloroethylvinyl Ether	ug/L	<10	<10	<10	<10	<1.0	<1.0

(Continued)

## SPOIL PILES, GROUND WATER SAMPLES AND SURFACE WATER SAMPLES

## ABS CEDAR BAY

PARAMETERS	UNITS	MW-1	MW-2	MW-3	MW-4	SW-1	SW-2
<b>KPA METHOD 625</b>							
a-BHC	ug/L	<50	<50	<50	<50	<50	<50
b-BHC	ug/L	<50	<50	<50	<50	<50	<50
d-BHC	ug/L	<50	<50	<50	<50	<50	<50
g-BHC	ug/L	<50	<50	<50	<50	<50	<50
Acenaphthene	ug/L	<100	<100	<100	<100	<100	<100
Acenaphthylene	ug/L	<100	<100	<100	<100	<100	<100
Aldrin	ug/L	<50	<50	<50	<50	<50	<50
Anthracene	ug/L	<100	<100	<100	<100	<100	<100
Benidine	ug/L	<100	<100	<100	<100	<100	<100
Benzo (a) Anthracene	ug/L	<100	<100	<100	<100	<100	<100
Benzo (a) Pyrene	ug/L	<100	<100	<100	<100	<100	<100
Benzo (b) Fluoranthene	ug/L	<100	<100	<100	<100	<100	<100
Benzo (g,h,i) Perylene	ug/L	<250	<250	<250	<250	<250	<250
Benzo (k) Fluoranthene	ug/L	<100	<100	<100	<100	<100	<100
Benzyl Butyl Phthalate	ug/L	<100	<100	<100	<100	<100	<100
Bis (2-chloroisopropyl) Ether	ug/L	<100	<100	<100	<100	<100	<100
Bis (2-chloroethyl) Ether	ug/L	<100	<100	<100	<100	<100	<100
Bis (2-chloroethoxy) Methane	ug/L	<100	<100	<100	<100	<100	<100
Bis (2-ethyl hexyl) Phthalate	ug/L	<100	<100	<100	<100	<100	<100
Chlordane	ug/L	<400	<400	<400	<400	<400	<400
Chrysene	ug/L	<100	<100	<100	<100	<100	<100
Di-n-butylphthalate	ug/L	<100	<100	<100	<100	<100	<100
Di-n-octylphthalate	ug/L	<100	<100	<100	<100	<100	<100
Dibenzo(a,h)Anthracene	ug/L	<100	<100	<100	<100	<100	<100
Dieldrin	ug/L	<100	<100	<100	<100	<100	<100
Diethyl Phthalate	ug/L	<100	<100	<100	<100	<100	<100
Dimethyl Phthalate	ug/L	<100	<100	<100	<100	<100	<100
Endosulfan I	ug/L	<50	<50	<50	<50	<50	<50
Endosulfan II	ug/L	<50	<50	<50	<50	<50	<50
Endosulfan Sulfate	ug/L	<50	<50	<50	<50	<50	<50
Endrin	ug/L	<50	<50	<50	<50	<50	<50
Endrin Aldehyde	ug/L	<50	<50	<50	<50	<50	<50
Fluoranthene	ug/L	<100	<100	<100	<100	<100	<100
Fluorene	ug/L	<100	<100	<100	<100	<100	<100
Heptachlor	ug/L	<50	<50	<50	<50	<50	<50
Heptachlor Epoxide	ug/L	<50	<50	<50	<50	<50	<50
Hexachlorobenzene	ug/L	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	ug/L	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	ug/L	<100	<100	<100	<100	<100	<100
Hexachloroethane	ug/L	<100	<100	<100	<100	<100	<100
Ideno(1,2,3-cd)Pyrene	ug/L	<250	<250	<250	<250	<250	<250
Isophorone	ug/L	<100	<100	<100	<100	<100	<100

(Continued)

## SPOIL PILES, LANDFILL GROUND WATER SAMPLES AND SURFACE WATER SAMPLES

## AES CEDAR BAY

PARAMETERS	UNITS	MW-1	MW-2	MW-3	MW-4	SW-1	SW-2
<u>EPA METHOD 625</u>							
N-Nitrosodiphenylamine	ug/L	<100	<100	<100	<100	<100	<100
Naphthalene	ug/L	<100	<100	<100	<100	<100	<100
Nitrobenzene	ug/L	<100	<100	<100	<100	<100	<100
Pentachlorophenol	ug/L	<100	<100	<100	<100	<100	<100
Phenanthrene	ug/L	<100	<100	<100	<100	<100	<100
Phenol	ug/L	72	<50	<50	<50	<50	<50
Pyrene	ug/L	<100	<100	<100	<100	<100	<100
PCB-1016	ug/L	<400	<400	<400	<400	<400	<400
PCB-1221	ug/L	<400	<400	<400	<400	<400	<400
PCB-1232	ug/L	<400	<400	<400	<400	<400	<400
PCB-1242	ug/L	<400	<400	<400	<400	<400	<400
PCB-1248	ug/L	<400	<400	<400	<400	<400	<400
PCB-1254	ug/L	<400	<400	<400	<400	<400	<400
PCB-1260	ug/L	<400	<400	<400	<400	<400	<400
Toxaphene	ug/L	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100
1,2,3-Trichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	ug/L	<100	<100	<100	<100	<100	<100
2-Chlorophenol	ug/L	<50	<50	<50	<50	<50	<50
2-Methyl-4,6-Dinitrophenol	ug/L	<150	<150	<150	<150	<150	<150
2-Nitrophenol	ug/L	<50	<50	<150	<50	<50	<50
2,4-Dichlorophenol	ug/L	<50	<50	<50	<50	<50	<50
2,4-Diethylphenol	ug/L	<50	<50	<50	<50	<50	<50
2,4-Dinitrophenol	ug/L	<200	<200	<200	<200	<200	<200
2,4-Dinitrotoluene	ug/L	<100	<100	<100	<100	<100	<100
2,4,6-Dinitrotoluene	ug/L	<50	<50	<50	<50	<50	<50
2,6-Dinitrotoluene	ug/L	<100	<100	<100	<100	<100	<100
3,3-Dichlorobenzidine	ug/L	<100	<100	<100	<100	<100	<100
4-Bromophenyl Phenyl Ether	ug/L	<100	<100	<100	<100	<100	<100
4-Chloro-3-Methylphenol	ug/L	<50	<50	<50	<50	<50	<50
4-Chlorophenyl Phenyl Ether	ug/L	<100	<100	<100	<100	<100	<100
4-Nitrophenol	ug/L	<150	<150	<150	<150	<150	<150
4,4'-DDD	ug/L	<50	<50	<50	<50	<50	<50
4,4'-DDE	ug/L	<50	<50	<50	<50	<50	<50
4,4'-DDT	ug/L	<50	<50	<50	<50	<50	<50
<u>OTHER</u>							
Sulfate	mg/L				1197		
Total Dissolved Solids	mg/L	4520	12606	1402	6108	29212	4024
PH		9.9	11.7	8	11.6	---	---

12902.01/VOC2.WR1/MH/SB/080888

(Continued)

SPOIL PILES, LANDFILL GROUND WATER SAMPLES AND SURFACE WATER SAMPLES

AES CEDAR BAY

PARAMETERS	UNITS	MW-1	MW-2	MW-3	MW-4	SW-1	SW-2
<u>PRIORITY POLLUTANT METALS</u>							
Antimony	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Beryllium	ug/L	0.007	<0.005	<0.005	<0.005	<0.005	<0.005
Cadmium	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	ug/L	0.07	<0.01	<0.01	0.04	<0.01	<0.01
Lead	ug/L	0.12	<0.02	<0.02	0.05	<0.02	<0.02
Mercury	ug/L	0.78	<0.50	<0.50	1.22	7.73	<0.50
Nickel	ug/L	0.09	0.02	<0.02	0.08	<0.02	<0.02
Selenium	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

12902.01/VOC2.WR1/MH/SB/080888

OLD LANDFILL GROUND WATER SAMPLE

ABS CEDAR BAY

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PARAMETERS	UNITS	MH-5
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RPA METHOD 624

Acrolein	ug/L	<250
Acrylonitrile	ug/L	<250
Benzene	ug/L	<10
Bromodichloromethane	ug/L	<10
Bromoform	ug/L	<10
Bromomethane	ug/L	<10
Carbon Tetrachloride	ug/L	<10
Chlorobenzene	ug/L	<10
Chloroethane	ug/L	<10
Chloroform	ug/L	<10
Chloromethane	ug/L	<10
Cis-1,3,-Dichloropropene	ug/L	<10
Ethyl Benzene	ug/L	<10
Methylene Chloride	ug/L	<10
Tetrachloroethene	ug/L	<10
Toluene	ug/L	<10
Trans-1,2-Dichloroethene	ug/L	<10
Trans-1,3-Dichloropropene	ug/L	<10
Trichloroethene	ug/L	<10
Trichlorofluoromethane	ug/L	<10
Vinyl Chloride	ug/L	<10
Xylene	ug/L	<10
1,1-Dichloroethene	ug/L	<10
1,1,1-Trichloroethane	ug/L	<10
1,1,2-Trichloroethane	ug/L	<10
1,1,2,2-Tetrachloroethane	ug/L	<10
1,2-Dichlorobenzene	ug/L	<10
1,2-Dichloroethane	ug/L	<10
1,2-Dichloropropane	ug/L	<10
1,3-Dichlorobenzene	ug/L	<10
1,4-Dichlorobenzene	ug/L	<10
2-Chloroethylvinyl Ether	ug/L	<10

(Continued)

## OLD LANDFILL GROUND WATER SAMPLE

AES CEDAR BAY

PARAMETERS	UNITS	MW-5
<u>EPA METHOD 625</u>		
N-Nitrosodiphenylamine	ug/L	<100
Naphthalene	ug/L	<100
Nitrobenzene	ug/L	<100
Pentachlorophenol	ug/L	<100
Phenanthrene	ug/L	<100
Phenol	ug/L	<50
Pyrene	ug/L	<100
PCB-1016	ug/L	<400
PCB-1221	ug/L	<400
PCB-1232	ug/L	<400
PCB-1242	ug/L	<400
PCB-1248	ug/L	<400
PCB-1254	ug/L	<400
PCB-1260	ug/L	<400
Toxaphene	ug/L	<100
1,2-Dichlorobenzene	ug/L	<100
1,2,3-Trichlorobenzene	ug/L	<100
1,3-Dichlorobenzene	ug/L	<100
1,4-Dichlorobenzene	ug/L	<100
2-Chloronaphthalene	ug/L	<100
2-Chlorophenol	ug/L	<50
2-Methyl-4,6-Dinitrophenol	ug/L	<150
2-Nitrophenol	ug/L	<50
2,4-Dichlorophenol	ug/L	<50
2,4-Dimethylphenol	ug/L	<50
2,4-Dinitrophenol	ug/L	<200
2,4-Dinitrotoluene	ug/L	<100
2,4,6-Dinitrotoluene	ug/L	<50
2,6-Dinitrotoluene	ug/L	<100
3,3-Dichlorobenzidine	ug/L	<100
4-Bromophenyl Phenyl Ether	ug/L	<100
4-Chloro-3-Methylphenol	ug/L	<50
4-Chlorophenyl Phenyl Ether	ug/L	<100
4-Nitrophenol	ug/L	<150
4,4'-DDD	ug/L	<50
4,4'-DDE	ug/L	<50
4,4'-DDT	ug/L	<50
Sulfate	ng/L	12.4
Total Dissolved Solids	ng/L	3106
PH		8.1

12902.01/TOC2.WRI/KH/SB/080888

(Continued)

OLD LANDFILL GROUND WATER SAMPLE

AES CEDAR BAY

PARAMETERS	UNITS	HW-5
PCA METHOD 625		
a-BHC	ug/L	<50
b-BHC	ug/L	<50
d-BHC	ug/L	<50
g-BHC	ug/L	<50
Acenaphthene	ug/L	<100
Acenaphthylene	ug/L	<100
Aldrin	ug/L	<50
Anthracene	ug/L	<100
Benzidine	ug/L	<100
Benzo (a) Anthracene	ug/L	<100
Benzo (a) Pyrene	ug/L	<100
Benzo (b) Fluoranthene	ug/L	<100
Benzo (g,h,i) Perylene	ug/L	<250
Benzo (k) Fluoranthene	ug/L	<100
Benzyl Butyl Phthalate	ug/L	<100
Bis (2-chloroisopropyl) Ether	ug/L	<100
Bis (2-chloroethyl) Ether	ug/L	<100
Bis (2-chloroethoxy) Methane	ug/L	<100
Bis (2-ethyl hexyl) Phthalate	ug/L	<100
Chlordane	ug/L	<400
Chrysene	ug/L	<100
Di-n-butylphthalate	ug/L	<100
Di-n-octylphthalate	ug/L	<100
Dibenzo(a,h,)Anthracene	ug/L	<100
Dieldrin	ug/L	<100
Diethyl Phthalate	ug/L	<100
Dimethyl Phthalate	ug/L	<100
Endosulfan I	ug/L	<50
Endosulfan II	ug/L	<50
Endosulfan Sulfate	ug/L	<50
Endrin	ug/L	<50
Endrin Aldehyde	ug/L	<50
Fluoranthene	ug/L	<100
Fluorene	ug/L	<100
Heptachlor	ug/L	<50
Heptachlor Epoxide	ug/L	<50
Hexachlorobenzene	ug/L	<100
Hexachlorobutadiene	ug/L	<100
Hexachlorocyclopentadiene	ug/L	<100
Hexachloroethane	ug/L	<100
Indeno(1,2,3-cd)Pyrene	ug/L	<250
Isophorone	ug/L	<100



12902.01/VOC2.WR1/MH/SB/080888

(Continued)

OLD LANDFILL GROUND WATER SAMPLE

A&S CEDAR BAY

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PARAMETERS	UNITS	MW-5
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PRIORITY POLLUTANT METALS

Antimony	ng/L	<0.05
Arsenic	ng/L	<0.005
Beryllium	ng/L	<0.005
Cadmium	ng/L	<0.005
Chromium	ng/L	0.054
Copper	ng/L	0.03
Lead	ng/L	0.09
Mercury	ng/L	<.50
Nickel	ng/L	0.04
Selenium	ng/L	<0.005
Silver	ng/L	<0.01
Thallium	ng/L	<0.01
Zinc	ng/L	<0.01

10.12 SURFACE WATER QUALITY DATA

100488

10-81

*S Day (for B&V dist)*

**DEPARTMENT OF HEALTH, WELFARE  
& BIO-ENVIRONMENTAL SERVICES**  
Bio-Environmental Services Division  
Air and Water Pollution Control



June 23, 1988

Mr. Kerry Varkonda  
1925 North Lynn Street, Suite 1200  
Arlington, VA 22209

Dear Mr. Varkonda:

Enclosed is the Broward River Water Quality Data you requested from Ms. Deuerling on May 31, 1988. The data is for two monitoring stations. The designated numbers are 2 and 12. Station 2 is located at the mouth of the Broward River, slightly upstream of its confluence with the St. Johns River. Station 12 is located at the U.S. Highway 17 Bridge (North Main Street). Stations 2 and 12 can be found on U.S.G.S. topographic map quadrangles Eastport, FL and Trout River, respectively.

Both sites are considered to be Class III waters and are generally marine. A copy of applicable state water quality standards are attached. The copying charges for this material is \$2.10. Please send a check for this amount, made payable to the City of Jacksonville, to this office, attention Ms. Corrine Harris, at your convenience.

If you have any questions concerning how the data is collected or analyzed, please call Mr. Lou Grant or Ms. Betsy Deuerling, Ambient Water Quality Specialist, at (904) 630-3666.

Very truly yours,

*W. Louis Grant*

W. Louis Grant  
Engineering Technician II

WLG/mh

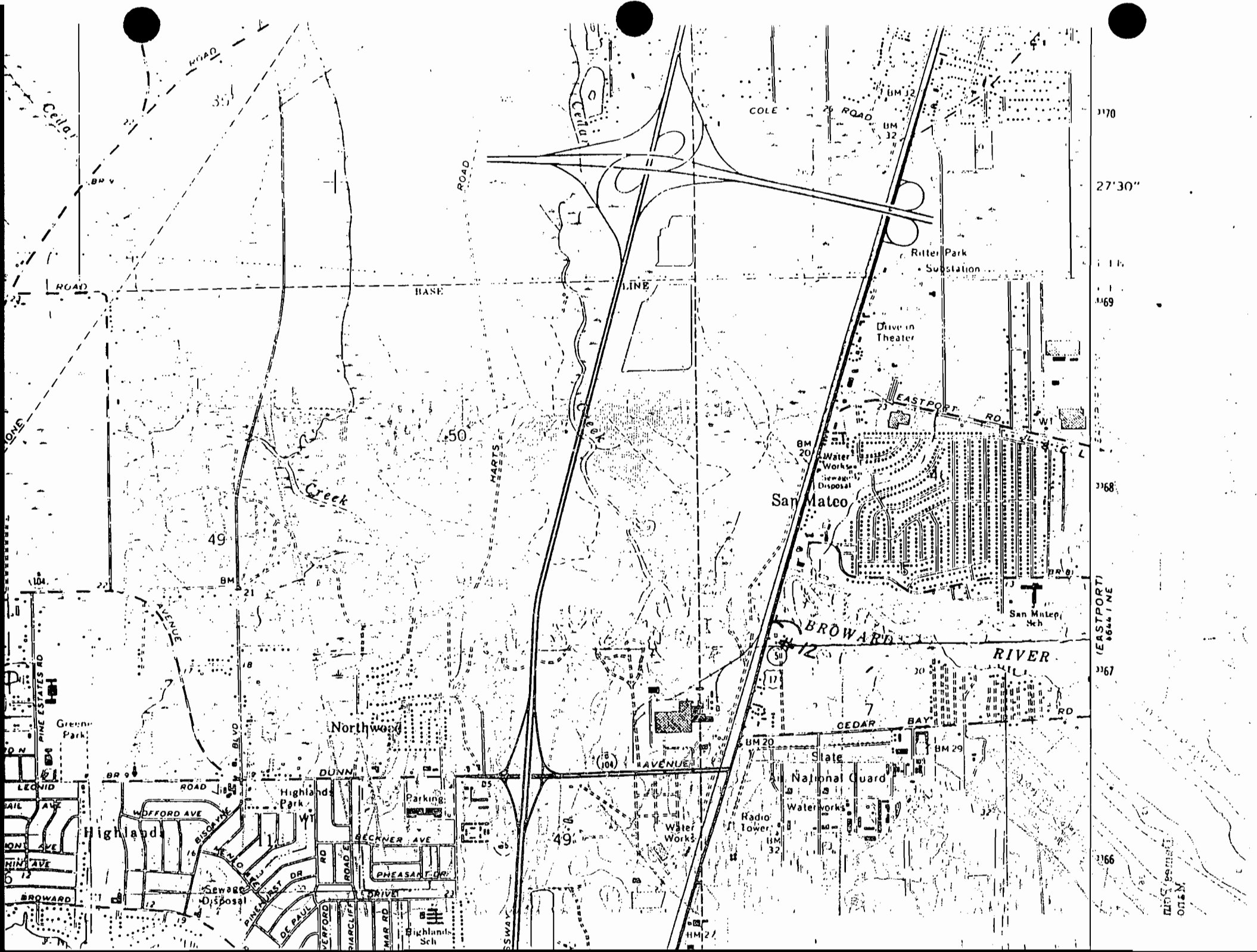
disc 9/28

AES JACKSONVILLE			
FILE 14573	41.0602		
REC'D		JUL 19 1988	B&V
R. F. CARVAJAL		J. M. MORNER	
S. W. DAY		R. I. JACOB	
M. R. GOANS		H. L. JACOBS	
G. Y. GUNN		K. R. WEISS	X
G. J. HART		H. A. STRICK	
	ACTR	INFO	ACTR INFO



PARAMETER	CLASS II	CLASS III FRESH	CLASS III MARINE
Alkalinity	-	> 20 mg/l as CaCO <sub>3</sub>	-
Aluminum	1.5 mg/l	-	1.5 mg/l
Ammonia, Un-ionized	-	0.02 mg/l	-
Antimony	0.2 mg/l	-	0.2 mg/l
Arsenic	0.05 mg/l	0.05 mg/l	0.05 mg/l
Beryllium	-	0.011 mg/l if hardness ≤ 150 mg/l CaCO <sub>3</sub> 1.10 mg/l if hardness > 150 mg/l CaCO <sub>3</sub>	-
Biological Integrity	Shannon-Weaver Diversity Index (H) of benthic macroinvertebrates shall not be reduced to less than 75% of established background.	Shannon-Weaver Diversity Index (H) of benthic macroinvertebrates shall not be reduced to less than 75% of established background	-
Bromates	100 mg/l	-	100 mg/l
Bromine (Free Molecular)	0.1 mg/l	-	0.1 mg/l
Cadmium	5.0 ug/l	0.8 ug/l if hardness < 150 mg/l CaCO <sub>3</sub> 1.2 ug/l if hardness ≥ 150 mg/l CaCO <sub>3</sub>	5.0 ug/l
Chlorides	<10% increase over normal background levels in pre-dominantly marine waters	-	<10% increase over normal background levels in pre-dominately marine waters
Chlorine (Total Residual)	0.01 mg/l	0.01 mg/l	0.01 mg/l
(After Heavy) → Chromium, Total	0.05 mg/l	0.05 mg/l	0.05 mg/l
Coliforms, Fecal	14 counts/100 ml median; 43 counts/100 ml <10% of samples	200 counts/100 ml monthly average; 400 counts/100 ml <10% of samples per month; 800 counts/100 ml on any 1 day	200 counts/100 ml monthly average; 400 counts/100 ml <10% of samples per month; 800 counts/100 ml on any 1 day.
Coliforms, Total	70 counts/100 ml median; 230 counts <10% of samples	1,000 counts/100 ml monthly average; 1,000 counts/100 ml <20% of samples per month; 2,400 counts/100 ml at any time	1,000 counts/100 ml monthly average; 1,000 counts/100 ml <20% of samples per month; 2,400 counts/100 ml at any time
Copper	15 ug/l	30 ug/l	15 ug/l
Cyanide	5.0 ug/l	5.0 ug/l	5.0 ug/l
Detergents	0.5 mg/l	0.5 mg/l	0.5 mg/l
Dissolved Gases, Total	<110% saturation	<110% saturation	<110% saturation
Dissolved Oxygen	>5.0 mg/l 24 hour average; >4.0 mg/l instantaneous	>5.0 mg/l	>5.0 mg/l 24 hour average; >4.0 mg/l instantaneous
Fluoride	1.5 mg/l	10 mg/l	5.0 mg/l
Iron	0.3 mg/l	1.0 mg/l	0.3 mg/l
Lead	50 ug/l	30 ug/l	50 ug/l
Manganese	100 ug/l	-	-
Mercury	0.1 ug/l	0.2 ug/l	0.1 ug/l
Nickel	100 ug/l	100 ug/l	100 ug/l
Nutrients	Shall not be altered so as to cause an imbalance in natural populations of aquatic flora and fauna	Shall not be altered so as to cause an imbalance in natural populations of aquatic flora and fauna	Shall not be altered so as to cause an imbalance in natural populations of aquatic flora and fauna

PARAMETER	CLASS II	CLASS III FRESH	CLASS III MARINE
		Chloride Conc. < 1,500 mg/l	Chloride Conc. ≥ 1,500 mg/l
<b>Oil and Grease</b>			
Dissolved or Emulsified	5.0 mg/l	5.0 mg/l	5.0 mg/l
Undissolved	No visible oil to interfere with beneficial use	No visible oil to interfere with beneficial use	No visible oil to interfere with beneficial use
<b>Pesticides and Herbicides</b>			
Aldrin Plus	0.003 ug/l	0.003 ug/l	0.003 ug/l
Dieldrin	0.004 ug/l	0.01 ug/l	0.004 ug/l
Chlordane	0.001 ug/l	0.001 ug/l	0.001 ug/l
ODT	0.1 ug/l	0.1 ug/l	0.1 ug/l
Demeton	0.001 ug/l	0.003 ug/l	0.001 ug/l
Endosulfan	0.004 ug/l	0.004 ug/l	0.004 ug/l
Endrin	0.01 ug/l	0.01 ug/l	0.01 ug/l
Guthion	0.001 ug/l	0.001 ug/l	0.001 ug/l
Heptachlor	0.004 ug/l	0.01 ug/l	0.004 ug/l
Lindane	0.1 ug/l	0.1 ug/l	0.1 ug/l
Malathion	0.03 ug/l	0.03 ug/l	0.03 ug/l
Methoxychlor	0.001 ug/l	0.001 ug/l	0.001 ug/l
Mirex	0.04 ug/l	0.04 ug/l	0.04 ug/l
Parathion	0.005 ug/l	0.005 ug/l	0.005 ug/l
Toxaphene			
pH range	6.5 to 8.5	6.0 to 8.5	6.5 to 8.5
pH Variation from Background	±1.0	±1.0	±1.0
Phenolic Compounds	1.0 ug/l	1.0 ug/l	1.0 ug/l
Phosphorous (Elemental)	0.1 ug/l	-	0.1 ug/l
Phthalate Esters	-	3.0 ug/l	-
Polychlorinated Biphenyls	0.001 ug/l	0.001 ug/l	0.001 ug/l
Radioactive Substances			
Radium 226 & 228	<5 pCi/l	<5 pCi/l	<5 pCi/l
Gross Alpha	<15 pCi/l	<15 pCi/l	<15 pCi/l
Selenium	25 ug/l	25 ug/l	25 ug/l
Silver	0.05 ug/l	0.07 ug/l	0.05 ug/l
Specific Conductance		Shall not be increased more than 50% above background or to 1275 $\mu$ mhos/cm, whichever is greater.	
Transparency	<10% reduction from background	<10% reduction from background	<10% reduction from background
Turbidity	<29 NTU increase from background	<29 NTU increase from background	<29 NTU increase from background
Zinc	1.0 mg/l	30 ug/l	1.0 mg/l



1170

27°30''

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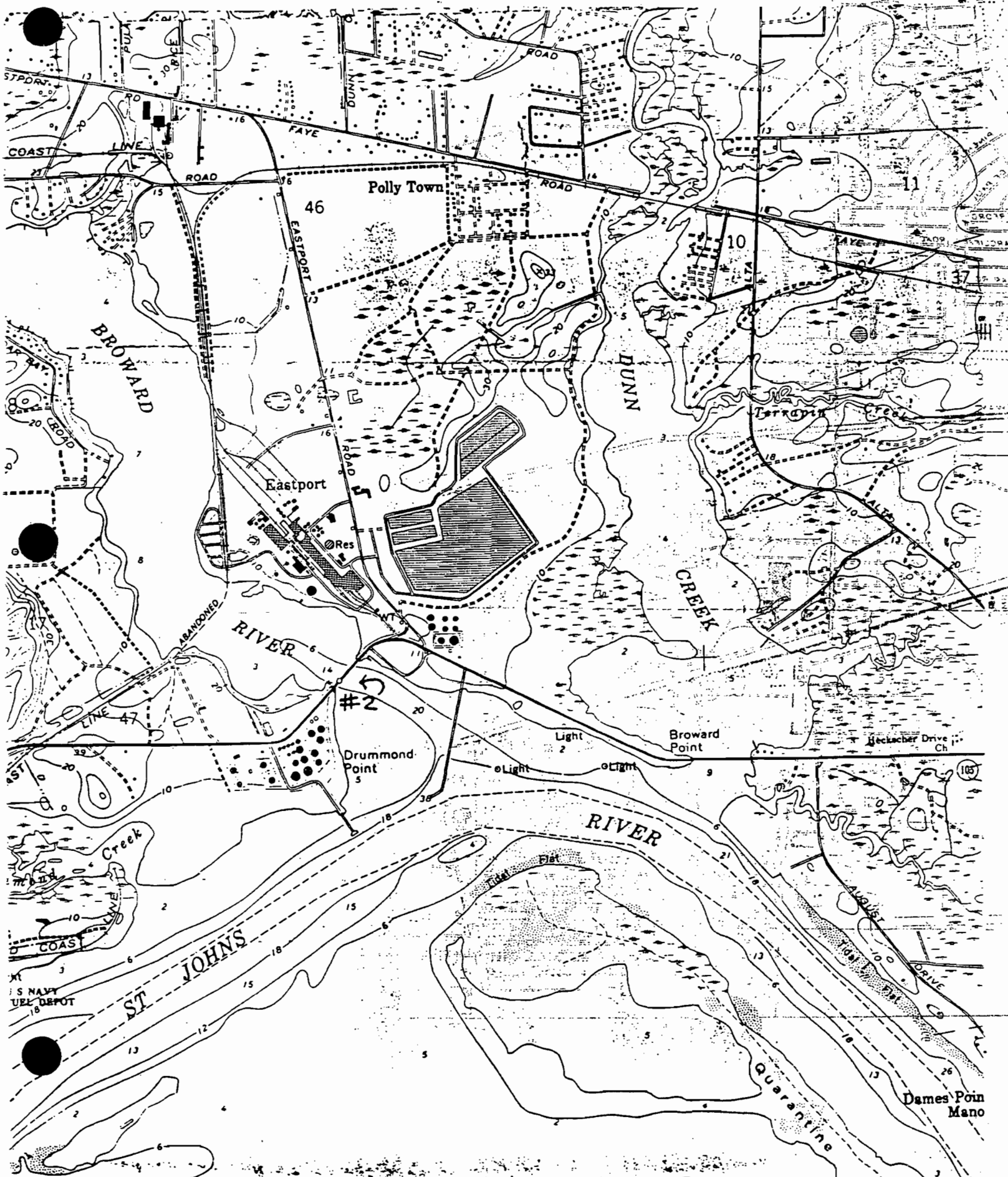
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1157

(EASTPORT)  
1164 LINE

Radio  
Transmitter  
Site



U.S. NAVY  
VEL. DEPOT

Dames Point  
Mano

PARAMETERS	UNITS	AMBIENT WATER QUALITY STANDARDS (a) (CLASS III)	SAMPLE STATION DATA (b)				
			DATE	DATE	DATE	DATE	DATE
			10/5/83	12/14/83	3/14/84	6/26/84	8/14/84
				am			9:15 AM
Temperature	°C	(6) 6.5-(8.5)	15.5	18.5			High-Incoming
Dissolved Oxygen	mg/l	(5.0) (4.0)	5.7	5.7	6.8		6.0
pH	mg/l		3.3	2.3			(3.25)
Acidity	NTU		10	11	7	11	26
Suspended Solids	mg/l		65	19	24	37	87
Conductivity	umhos/cm	5,000					
Chlorides	mg/l		8,300	58	2,250	6,600	1,000
Ortho-Phosphorous	mg/l			0.264	0.133	0.138	0.360
Total Phosphorous	mg/l	(0.02)		0.059	0.06	< 0.013	0.066
Nitrate-Nitrite	mg/l			0.68	0.54		
	ug/l			0.089	0.09	< 0.022	0.106
	ug/l	(1000) 300	(390)	600	178	260	
	ug/l	300 (30) 50	< 40	< 40	(52)	< 10	< 10
	ug/l	(30) 15	< 10	5	< 7	< 10	< 10
	ug/l	(0.8) 5	< 2	< 10	< 2		< 10
	ug/l	(300) (30) 100	20	30	< 240	40	20
Uniformity	#/100 ml	30(2400)/100 ml	(> 2,400)		60	(> 2,400)	(> 2400)
Ammonia Nitrogen	mg/l			0.62			< 10
Collector							
Analyst							
	ug/l					< 10	

Notes:  
 (a) Standards shown in parentheses are for "Predominantly Fresh Water." Standards not in parentheses are for "Predominant Marine Water," defined by conductivity equal to or greater than 5000 micromhos per centimeter. The Main St. Bridge is an approximate geographical divisor of predominantly fresh and predominantly marine waters in Duval County Florida.

(b) Values shown in brackets are violations of A.W.Q. Standards.



STREAM

St. Johns River

STATION # 12

Broward River @ Main St. Bridge

PARAMETERS	UNITS	AMBIENT WATER QUALITY STANDARDS (a) (CLASS III)	SAMPLE STATION DATA (b)						
			DATE	DATE	DATE	DATE	DATE	DATE	
Time			10/23/84	12/5/84	2/19/85	4/10/85	6/11/85	10/15/85	
Tide						0910	0845	1025	8:15 AM
Temperature	°C		25.0°	17.5°	14.0	Dead Low	21°/21°	29.7/29.7°	25.0
pH		(6) 6.5-(8.5)		6.6	6.9		6.0	7.3	6.0
Dissolved Oxygen	mg/l	(5.0) (4.0)	5.4	2.2	10.6	7.5/9.0	5.5/5.2	4.7	
BOD5	mg/l								
Turbidity	NTU		18	4	6	8	14.0	4	
Suspended Solids	mg/l		56	26	45	35	99	15	
Conductivity	umhos/cm	5,000				90,000/90,000	25,800/25,800	N/A	
Chlorides	mg/l		3,300	5,300	7,190	3,800	10,400	2,400	
Ortho-Phosphorous	mg/l	(100) 300	0.177	0.077	0.113	0.286	0.318	0.226	
Total Phosphorous	mg/l		<0.012	0.025	0.017	<0.013	<0.014	<0.014	
Ammonia	mg/l	(0.02)							
TKN	mg/l								
Nitrate-Nitrite	mg/l		0.175	0.223	0.133	<0.013	<0.015	0.129	
Fe	ug/l	(1000) 300	[760]	220	210	[490]	[440]	880	
Pb	ug/l	300 (30) 50	310	48	<1	4	49	12.9	
Cu	ug/l	(30) 15	[18]	8	10	10	30	130	
Cd	ug/l	(0.8) 5	2	2	1	2	4	<3.8	
Zn	ug/l	(300) (30) 1000	50	<19	<24	417	20	38	
Coliform	#/100 ml	<2400/100 ml	480	[2400]	740	[2400]	[2400]	13000	
P.C.									
Collector			AC TH, JR	BP KH, JR	BP KH, JR	KG	KG	KH, JR, B.	
Analyst			Malcomb	Malcomb	Malcomb	JH, JM	JH, JM		
SAMPLE DEPTH								SURFACE	

Notes:

(a) Standards shown in parentheses are for "Predominantly Fresh Water." Standards not in parentheses are for "Predominantly Marine Water," defined by conductivity equal to or greater than 5000 micromhos per centimeter. The Main St. Bridge is an approximate geographical divisor of predominantly fresh and predominantly marine waters in Duval County Florida.

(b) Values shown in brackets are violations of A.W.Q. Standards.

WATERBODY: ST. JOHNS RIVER

BEST AVAILABLE COPY

STATION

BROWARD RIVER AT MAIN ST. BRIDGE

PARAMETERS	UNITS	CLASS III WATER QUALITY STANDARDS (a)	SAMPLE STATION DATA (b)					
			DATE	DATE	DATE	DATE	DATE	DATE
Time			12/3/85	2/26/86	5/21/86	7/8/86	9/8/86	11/4/86
Tide			9:00	8:52	8:55	9:20	9:00	9:10
Temperature	°C				outgoing	Incoming	LOW	INCOMING
pH		(6.0-8.5) 6.5-8.5	6.2	6.6	7.0	7.0	6.6	6.7
Dissolved Oxygen	mg/l	(5.0) 4.0	5.1	7.9	5.5	6.2	3.7	5.9
BOD5	mg/l							
Turbidity	NTU	inc. bkgd. <29	6.8	10	6.2	13	4.9	9.0
Suspended Solids	mg/l		18	47	53	75	38	52
Conductivity	umhos/cm			6,600	12,000	6,900	7,000	
Chlorides	mg/l		300	3,600	9,900	6,900	4,500	10,700
Ortho-Phosphorous	mg/l							
Total Phosphorous	mg/l		0.505	0.227	0.299	0.291	0.161	0.120
Ammonia Nitrogen	mg/l		0.188	0.086	<0.013	0.016	<0.015	0.084
Ammonia, Unionized	mg/L	(0.02) -						
TKN	mg/l							
Nitrate-Nitrite	mg/l		0.241	0.178	<0.016	<0.013	0.078	0.104
Fe	ug/l	(1000) 300	1000	660	413	540	609	330
Pb	ug/l	(30) 50	<9.6	<8.4	<5	<20	24.8	38.5
Cu	ug/l	(30) 15	<8.0	<11.3	60.4	30.8	41	44
Cd	ug/l	(1.2) 5	<1	<1	<6	<6	<6	<6
Zn	ug/l	(30) 1000	16	3.9	<24	39	23	<44
Cr	ug/L	(50) 50						19.6
Coliform - Total	#/100 ml	(2400) 2400				>2400	>1600	>1600
Coliform - Fecal	#/100 ml	(800) 800	>2400	>2400	>2400	920	>1600	500
PCB's	ug/L	(0.001) 0.001						
Pesticides								
Hg	ug/L					N.D.		
Collector			AC, JK, KH	AC, TH, RD	LG, AC, KG	LG, AC, BD	LG, AC, BD	BD
Analyst			JH, JM	JH, JM	JH, JM	JH, JM	JH, JM	JH, JM
Comments								

Notes:

(a) Standards shown in parentheses are for "Predominantly Fresh Water." Standards not in parentheses are for "Predominantly Marine Water," defined by chlorides equal to or greater than 1500 milligrams per liter. The Main St. Bridge is an approximate geographical divisor of predominantly fresh and predominantly marine waters in Duval County Florida.

(b) Values in brackets are violations of A.W.Q. standards.

WATERBODY ST. JOHNS RIVER

STATION # 12 BROWARD RIVER AT MAIN ST. BRIDGE

PARAMETERS	UNITS	CLASS III WATER QUALITY STANDARDS (a)	SAMPLE STATION DATA (b)					
			DATE	DATE	DATE	DATE	DATE	DATE
			2/4/87	3/31/87	6/2/87	9/15/87	1/12/88	
Time			11:05	12:19		1:45	1:10	
Tide			LOW-FLOOD		INCOMING	INCOMING		
Temperature	°C		14	15.5	30.0	30.0	9.6	
pH		(6.0-8.5) 6.5-8.5	6.6	6.1	6.8	7.0	7.3	
Dissolved Oxygen	mg/l	(5.0) 4.0		6.4	7.0	7.9	8.2	
BOD5	mg/l							
Turbidity	NTU	inc. bkgd. < 29	8.4	14	9.4	7.2	7.5	
Suspended Solids	mg/l		28	23	60	30	20	
Conductivity	umhos/cm			150	118,100			
Chlorides	mg/l		800	39	6100	2700	3700	
Ortho-Phosphorous	mg/l							
Total Phosphorous	mg/l		0.233	0.195	0.263	0.410	0.174	
Ammonia Nitrogen	mg/l		0.258	<0.013	<0.012	0.057	0.119	
Ammonia, Unionized	mg/L	(0.02)						
TKN	mg/l							
Nitrate-Nitrite	mg/l		0.210	<0.013	<0.013	0.145	0.213	
Ferrous Iron	ug/l	(1000) 300	236	1210	400	642	300	
Pb	ug/l	(30) 50			8.4	15.2	<1.0	
Copper	ug/l	(30) 15	<3.2	6.4	11.0	22		
Cd	ug/l	(1.2) 5						
Zn	ug/l	(30) 1000					<10	
Cr	ug/l	(50) 50				39.3	24	
Coliform - Total	#/100 ml	(2400) 2400	>1600	30,000	>1600	>1600	>1600	
Coliform - Fecal	#/100 ml	(800) 800	900	8,000	1600	>1600	>1600	
PCB's	ug/L	(0.001) 0.001						
Pesticides								
Collector			LG, AC	LG, AC	LG, AC	LG, AC, BD	LG, AC, BD	
Analyst			JM, JH	JM, JH	JM, JH	BESD	BESD	
Comments	mg/L		400	56	2040	1100	820	

Notes: (a) Standards shown in parentheses are for "Predominantly Fresh Water." Standards not in parentheses are for "Predominantly Marine Water," defined by chlorides equal to or greater than 1500 milligrams per liter. The Main St. Bridge is an approximate geographical divisor of predominantly fresh and predominantly marine waters in Duval County Florida.

WATERBODY

ST. JOHNS RIVER

STATION

# 12 BROWARD RIVER AT MAIN ST. BRIDGE

PARAMETERS	UNITS	CLASS III WATER QUALITY STANDARDS (a)	SAMPLE STATION DATA (b)				
			DATE	DATE	DATE	DATE	DATE
			12/4/87	3/31/87	6/2/87	9/15/87	11/12/88
As	ug/L	(50) 50	<1	<1			
Se	ug/L	(25) 25	<1	<1			
Hg	ug/L	(0.2) 0.1	<1	0.25	0.09		
Ni	ug/L	(100) 100			260	830	<5

Notes:

(a) Standards shown in parentheses are for "Predominantly Fresh Water." Standards not in parentheses are for "Predominant Marine Water," defined by chlorides equal to or greater than 1500 milligrams per liter. The Main St. Bridge is an approximate geographical divisor of predominantly fresh and predominantly marine waters in Duval County Florida.

(b) Values shown in brackets are violations of A.W.Q. Standards.

PARAMETERS	UNITS	AMBIENT WATER QUALITY STANDARDS (a) (CLASS III)	SAMPLE STATION DATA (b)				
			DATE 10/5/83	DATE 12/14/83	DATE 3/14/84	DATE 6/26/84	DATE 8/14/84
Time		(Fresh) Morning	9:45am	9:40am	11:05am	10:55am	11:50 PM
Temperature	°C		high inc	out	outgoing	outgoing	High-incoming
			27	18.0	16	29	29.8°
Dissolved Oxygen	mg/l	(6) 6.5-(8.5)	7.0	5.8	6.0	6.0	7.5
pH	mg/l	(5.0) (4.0)	5.8	8.8	8.0	7.0	5.5
Turbidity	NTU		3.2	0.5			
Suspended Solids	mg/l		3	6	6	7	13
Conductivity	umhos/cm	5,000	22	42	32	45	23
Chlorides	mg/l		26,000		12,000	34,000	21,000
Ortho-Phosphorous	mg/l		8,600	4,100	4,800	10,800	6,800
Total Phosphorous	mg/l			0.137	0.115	0.062	0.059
Ammonia	mg/l	(0.02)	(0.067)	(0.101)	(0.10)	< 0.013	< 0.013
Nitrate-Nitrite	mg/l			0.40	0.60		
Iron	ug/l	(1000) 300	0.081	0.218	0.16	< 0.022	0.327
Zinc	ug/l	(300) (30) 50	170	280	32	260	
Copper	ug/l	(30) 15	< 40	< 40	(61)	< 10	10
Cadmium	ug/l	(0.8) 5	< 10	< 4	< 7	< 10	< 10
Lead	ug/l	(300) (30) 1000	< 2	< 10	< 2		< 10
Mercury	ug/l		20	40	240	140	30
Total Nitrogen	ug/100 ml	2400/100 ml 800	23		40	49	(1600)
Depth of Stream	feet			0.30			< 10
Electromet						4	6
Analysis							
Residue	ug/kg					< 10	

(a) Standards shown in parentheses are for "Predominantly Fresh Water" Standards not in parentheses are for "Predominant Marine Water," defined by conductivity equal to or greater than 5000 micromhos per centimeter. The Main St. Bridge is an approximate geographical divisor of predominantly fresh and predominantly marine waters in Duval County Florida.

(b) Values shown in brackets are violations of A.W.Q. Standards.

PARAMETERS	UNITS	CLASS III WATER QUALITY STANDARDS (a)	SAMPLE STATION DATA (b)					
			DATE 12/3/85	DATE 2/26/86	DATE 5/21/86	DATE 7/8/86	DATE 9/8/86	DATE 11/4/86
Time			10:10	10:25	10:35	11:00	10:15	9:43
Tide			OUTGOING	OUTGOING	OUTGOING	Low Outgoing	Outgoing	INCOMING
Temperature	°C		21.2/22.0	13.0/13.0	22.5/23.0	30.0/30.0	28.5/28.5	21.5/21.5
pH		(6.0-8.5) 6.5-8.5	6.3	6.8	7.0	6.9	7.2	7.1
Dissolved Oxygen	mg/l	(5.0) 4.0	8.4/8.2	8.8/8.8	6.7/6.7	6.3/6.1	6.5/6.2	7.5/7.5
BOD5	mg/l							
Turbidity	NTU	inc. bkgd. < 29	4.3	4.3	4.0	1.6	2.9	7.0
Suspended Solids	mg/l		43	85	44	69	53	38
Conductivity	umhos/cm		15,400/17,000	16,500/16,500	22,100/22,000	27,000/28,000	28,200/28,000	8,300/8,300
Chlorides	mg/l		5,800	11,900	11,000	10,300	11,900	14,800
Ortho-Phosphorous	mg/l							
Total Phosphorous	mg/l		0.211	0.80	0.115	0.189	0.169	0.089
Ammonia Nitrogen	mg/l		< 0.013	< 0.015	0.016	< 0.014	< 0.015	0.028
Ammonia, Unionized	mg/L	(0.02) -						
TKN	mg/l							
Nitrate-Nitrite	mg/l		0.383	0.141	0.077	0.242	0.320	0.124
Fe	ug/l	(1000) 300	360	200	274	130	81	218
Pb	ug/l	(30) 50	< 9.6	10	< 5	420	50.6	36.4
Cu	ug/l	(30) 15	8.4	< 11.3	10.8	43.5	60	64
Cd	ug/l	(1.2) 5	< 1.0	< 1	< 6	< 6	< 6	< 6
Zn	ug/l	(30) 1000	< 13	< 1	< 24	< 15	23	< 44
Cr	ug/L	(50) 50						8.35
Coliform - Total	#/100 ml	(2400) 2400				130	170	180
Coliform - Fecal	#/100 ml	(800) 800	> 2400	79	170	49	50	30
PCB's	ug/L	(0.001) 0.001						
Pesticides								
Hg	ug/L					0.73		
Collector			KH, JR, AL	TH, AC, BD	LG, AC, KG	LG, AC, BD	LG, AC, BD	LG, AC, S
Analyst			JM, JH	JM, JH	JM, JH	JM, JH	JM, JH	JM, JH
Comments						surface/ 5' depth	Surface/ 6'	SURFACE

## Notes:

(a) Standards shown in parentheses are for "Predominantly Fresh Water." Standards not in parentheses are for "Predominant Marine Water," defined by chlorides equal to or greater than 1500 milligrams per liter. The Main St. Bridge is an approximate geographical divisor of predominantly fresh and predominantly marine waters in Duval County Florida.

(b) Values shown in brackets are violations of A.W.Q. Standards.

**RIVER FLOW**  
**ST. JOHN'S RIVER**  
**Jacksonville, Florida**

21 year Mean Discharge - 5546 CFS

Typical Ratio (Mean/99% Exceedance) - 5

Estimated Design Low Flow - 1110 CFS  
 720 MGD

DATE	TIME	STATION	DISCHARGE (CFS)	DISCHARGE (MGD)	WATER TEMPERATURE (°F)	WIND DIRECTION	WIND VELOCITY (MPH)	SKY CONDITION	RELATIVE HUMIDITY (%)	WATER SURFACE ELEVATION (FEET)	WATER SURFACE AREA (ACRES)
10/10/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/11/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/12/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/13/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/14/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/15/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/16/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/17/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/18/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/19/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/20/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/21/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/22/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/23/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/24/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/25/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/26/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/27/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/28/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/29/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/30/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5
10/31/82	11:00	ST. JOHN'S RIVER	1110	720	72	SE	10	Partly Cloudy	75	10.5	10.5

REVISION 2/20/82 BY J. W. ...

TABLE I  
Water Quality Analysis  
St. John's River  
Jacksonville, Florida

Parameter	WQS	Upstream of Mill					Downstream of Mill					Does Mill Discharge Cause Violation of WQS?	
		Marker 59 1970-77	Marker 60/61 1986-88	Drummond PT 1986-88	Broward R. 1981-83	Broward Dunn R. 1973-1983	Marker 53 1970-1983	Marker 51 1986-88	4 1983	Marker 43 1986-88	Heck. Dr. 1986-88		
Dissolved Oxygen	Avg. 5.0 mg/l Min. 4.0 mg/l	See Special Dissolved Oxygen Sheet											
pH	6.0-8.5	6.9-8.0	7.2-8.2	7.5-7.9	7.15-8.00	6.0-8.1	7.0-7.9	7.2-8.3	--	7.5-8.1	6.9-8.0	no	
Turbidity (Hach-FTU)	--	4-33	3-21	10-15	0-15	0-25	8-22	1-44	8.0	5-17	0-15	no	
Transparency (Not Reduce 10% Below Background) (Secchi-meters)	--	--	0.6-1.2	.65-1.0	.9-1.5	0.7-1.1	--	.5-1.1	1.1	.7-1.1	.9-1.5	no	
Diversity National Substrate Index	--	--	1.792-2.750	1.792-2.750	1.304-2.496	.914-2.071	1.000-2.750	--	--	1.717-2.390	1.304-2.496	no	
Diversity No. of Species	--	--	4-12	4-12	6-15	3-12	2-9	--	--	9-11	6-15	no	
Oil & Grease	5.0 mg/l	No Water Quality Data - See Attachment A											no
Flourides	10 mg/l	--	.13-.83	.23-.84	.60-.71	--	--	.18-.79	--	.13-.84	.60-.71	no	
Bacteriological Fecal (Daily)	800/100 ml	--	ND(2)-1600	--	29-150	20-92,000	33	2-170	70	50-300	33-150	no	
Arsenic	.05 mg/l	--	No Water Quality Data - See Attachment A										no
Aluminum	1.5 mg/l	--	No Water Quality Data - See Attachment A										no
Antimony	0.2 mg/l	--	No Water Quality Data - See Attachment A										no
Cadmium	5 ug/l	--	ND-.35	ND(.5.0)	ND(.5.0)-.41	ND(.5.0)-160	--	ND(.5.0)-44	--	ND(.5.0)-51	ND(.5.0)-41	no	
Copper	.05 mg/l	--	.089-.145	.046-.132	.100-.140	ND-.267	--	.072-.137	--	.097-.127	.104-.140	no	
Cyanide	5 ug/l	--	No Water Quality Data - See Attachment A										no
Chromium (Hex) (Total)	50 ug/l 1.0 mg/l	--	No Water Quality Data - See Attachment A										no
Iron	0.3 mg/l	--	.224-.311	.3-.5	.15-.35	ND-1.1	--	.13-.328	--	.2-.5	0-.346	no	
Lead	.05 mg/l	--	ND(.10)	ND(.10)	ND(.10)	ND(.10)-.392	--	ND(.10)	--	ND(.10)	ND(.10)-.152	no	
Mercury	0.1 ug/l	--	No Water Quality Data - See Attachment A										no
Nickel	0.1 mg/l	--	ND(.04)	ND(.04)	ND(.04)-.048	ND(.04)	--	ND(.04)	--	ND(.04)-.045	ND(.04)-.048	no	
Selenium	.025 mg/l	--	No Water Quality Data - See Attachment A										no
Zinc	1.0 mg/l	--	No Water Quality Data - See Attachment A										no



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Total Residual Cl2	0.01 mg/l	--	No Water Quality Data - See Attachment A	no
Detergents	0.5 mg/l	--	No Water Quality Data - See Attachment A	no
PCB's	.001 ug/l	--	No Water Quality Data - See Attachment A	no
Trichlorophenol	1.0 ug/l	--	No Water Quality Data - See Attachment A	no
Chlorinated Creosol	1.0 ug/l	--	No Water Quality Data - See Attachment A	no
2 Chlorophenol	1.0 ug/l	--	No Water Quality Data - See Attachment A	no
2,4 diChlorophenol	1.0 ug/l	--	No Water Quality Data - See Attachment A	no
PentaChlorophenol	1.0 ug/l	--	No Water Quality Data - See Attachment A	no
Pesticides		--	No Water Quality Data - See Attachment A	no
Radioactive		--	No Water Quality Data - See Attachment A	no

DISSOLVED OXYGEN (mg/l)  
St. John's River - Jacksonville, Florida

Dates	Upstream Stations		Downstream Stations		
	Marker 60-61	Drummond Point	Marker 51	Marker 43	Hecksher Drive
8/21/86	5.5	--	5.7	5.7	5.6
10/20/86	7.3	6.9	7.9	8.5	7.6
11/18/86	6.9	--	7.0	7.0	--
12/16/86	7.7	--	7.7	8.0	--
11/14/87	9.4	--	8.5	8.5	--
2/04/87	9.2	9.1	--	--	9.7 (2/17)
2/11/87	9.8	--	9.8	9.8	--
3/10/87	9.0	--	9.2	8.8	--
4/13/87	8.4	7.9	8.8	--	--
4/14/87	8.2	--	8.0	8.0	--
5/26/87	6.0	5.9	5.8	5.8	--
6/23/87	4.9	--	5.1	5.1	--
7/14/87	5.6	--	5.5	4.8	--
9/22/87	3.9	--	4.2	4.0	--
10/20/87	7.7	--	8.3	8.1	--
11/17/87	7.7	--	7.8	7.9	--
12/15/87	8.5	--	8.6	8.5	--
1/12/88	8.8	--	9.0	9.1	--
2/10/88	9.2	--	9.3	10.0	--
3/08/88	7.8	--	7.5	7.8	--
4/26/88	7.6	--	7.8	7.5	--

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FORM 12901-01 (REV. 10-1988)

12901-01/SAPTOC: AES/BAI/083088

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APPENDIX C-1

ANALYTICAL DATA SUMMARY TABLES

TABLE NO.	TITLE	DATE	BY	REVISION
1.1	...	...	...	...
1.2	...	...	...	...
1.3	...	...	...	...
1.4	...	...	...	...
1.5	...	...	...	...
1.6	...	...	...	...
1.7	...	...	...	...
1.8	...	...	...	...
1.9	...	...	...	...
1.10	...	...	...	...
1.11	...	...	...	...
1.12	...	...	...	...
1.13	...	...	...	...
1.14	...	...	...	...
1.15	...	...	...	...
1.16	...	...	...	...
1.17	...	...	...	...
1.18	...	...	...	...
1.19	...	...	...	...
1.20	...	...	...	...
1.21	...	...	...	...
1.22	...	...	...	...
1.23	...	...	...	...
1.24	...	...	...	...
1.25	...	...	...	...
1.26	...	...	...	...
1.27	...	...	...	...
1.28	...	...	...	...
1.29	...	...	...	...
1.30	...	...	...	...
1.31	...	...	...	...
1.32	...	...	...	...
1.33	...	...	...	...
1.34	...	...	...	...
1.35	...	...	...	...
1.36	...	...	...	...
1.37	...	...	...	...
1.38	...	...	...	...
1.39	...	...	...	...
1.40	...	...	...	...
1.41	...	...	...	...
1.42	...	...	...	...
1.43	...	...	...	...
1.44	...	...	...	...
1.45	...	...	...	...
1.46	...	...	...	...
1.47	...	...	...	...
1.48	...	...	...	...
1.49	...	...	...	...
1.50	...	...	...	...



12902.01/70C2.WR1/HR/SB/080888

SPOIL PILES, GROUND WATER SAMPLES AND SURFACE WATER SAMPLES

AES CEDAR BAY

PARAMETERS	UNITS	MW-1	MW-2	MW-3	MW-4	SW-1	SW-2
<b>RPA METHOD 624</b>							
Acrolein	ug/L	<250	<250	<250	<250	<25	<25
Acrylonitrile	ug/L	<250	<250	<250	<250	<25	<25
Benzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Bromodichloromethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
Bromoform	ug/L	<10	<10	<10	<10	<1.0	<1.0
Bromomethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
Carbon Tetrachloride	ug/L	<10	<10	<10	<10	<1.0	<1.0
Chlorobenzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Chloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
Chloroform	ug/L	<10	<10	<10	<10	<1.0	1.4
Chloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
Cis-1,3-Dichloropropene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Ethyl Benzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Methylene Chloride	ug/L	<10	<10	<10	<10	<1.0	<1.0
Tetrachloroethene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Toluene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Trans-1,2-Dichloroethene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Trans-1,3-Dichloropropene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Trichloroethene	ug/L	<10	<10	<10	<10	<1.0	<1.0
Trichlorofluoromethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
Vinyl Chloride	ug/L	<10	<10	<10	<10	<1.0	<1.0
Xylene	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,1-Dichloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,1,1-Trichloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,1,2-Trichloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,1,2,2-Tetrachloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,2-Dichlorobenzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,2-Dichloroethane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,2-Dichloropropane	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,3-Dichlorobenzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
1,4-Dichlorobenzene	ug/L	<10	<10	<10	<10	<1.0	<1.0
2-Chloromethylvinyl Ether	ug/L	<10	<10	<10	<10	<1.0	<1.0

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12902.01/YOC2.WRI/MH/SB/080888

REPORT NO. WRI-10-001

(Continued)

SPOIL PILES, GROUND WATER SAMPLES AND SURFACE WATER SAMPLES

ABS CEDAR BAY

PARAMETERS	UNITS	NH-1	NH-2	NH-3	NH-4	SW-1	SW-2
EPA METHOD 625							
a-BHC	ug/L	<50	<50	<50	<50	<50	<50
b-BHC	ug/L	<50	<50	<50	<50	<50	<50
d-BHC	ug/L	<50	<50	<50	<50	<50	<50
g-BHC	ug/L	<50	<50	<50	<50	<50	<50
Acenaphthene	ug/L	<100	<100	<100	<100	<100	<100
Acenaphthylene	ug/L	<100	<100	<100	<100	<100	<100
Aldrin	ug/L	<50	<50	<50	<50	<50	<50
Anthracene	ug/L	<100	<100	<100	<100	<100	<100
Benzidine	ug/L	<100	<100	<100	<100	<100	<100
Benzo (a) Anthracene	ug/L	<100	<100	<100	<100	<100	<100
Benzo (a) Pyrene	ug/L	<100	<100	<100	<100	<100	<100
Benzo (b) Fluoranthene	ug/L	<100	<100	<100	<100	<100	<100
Benzo (g,h,i) Perylene	ug/L	<250	<250	<250	<250	<250	<250
Benzo (k) Fluoranthene	ug/L	<100	<100	<100	<100	<100	<100
Benzyl Butyl Phthalate	ug/L	<100	<100	<100	<100	<100	<100
Bis (2-chloroisopropyl) Ether	ug/L	<100	<100	<100	<100	<100	<100
Bis (2-chloroethyl) Ether	ug/L	<100	<100	<100	<100	<100	<100
Bis (2-chloroethoxy) Methane	ug/L	<100	<100	<100	<100	<100	<100
Bis (2-ethyl hexyl) Phthalate	ug/L	<100	<100	<100	<100	<100	<100
Chlordane	ug/L	<400	<400	<400	<400	<400	<400
Chrysene	ug/L	<100	<100	<100	<100	<100	<100
Di-n-butylphthalate	ug/L	<100	<100	<100	<100	<100	<100
Di-n-octylphthalate	ug/L	<100	<100	<100	<100	<100	<100
Dibenzo(a,h)Anthracene	ug/L	<100	<100	<100	<100	<100	<100
Dieldrin	ug/L	<100	<100	<100	<100	<100	<100
Diethyl Phthalate	ug/L	<100	<100	<100	<100	<100	<100
Dimethyl Phthalate	ug/L	<100	<100	<100	<100	<100	<100
Endosulfan I	ug/L	<50	<50	<50	<50	<50	<50
Endosulfan II	ug/L	<50	<50	<50	<50	<50	<50
Endosulfan Sulfate	ug/L	<50	<50	<50	<50	<50	<50
Endrin	ug/L	<50	<50	<50	<50	<50	<50
Endrin Aldehyde	ug/L	<50	<50	<50	<50	<50	<50
Fluoranthene	ug/L	<100	<100	<100	<100	<100	<100
Fluorene	ug/L	<100	<100	<100	<100	<100	<100
Heptachlor	ug/L	<50	<50	<50	<50	<50	<50
Heptachlor Epoxide	ug/L	<50	<50	<50	<50	<50	<50
Hexachlorobenzene	ug/L	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	ug/L	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	ug/L	<100	<100	<100	<100	<100	<100
Hexachloroethane	ug/L	<100	<100	<100	<100	<100	<100
Indeno(1,2,3-cd)Pyrene	ug/L	<250	<250	<250	<250	<250	<250
Isophorone	ug/L	<100	<100	<100	<100	<100	<100

12902.01/FOC2.WR1/MH/SB/080888

(Continued)

- SPILL-PILES, LANDFILL GROUND WATER SAMPLES AND SURFACE WATER SAMPLES

AES CEDAR BAY

PARAMETERS	UNITS	MW-1	MW-2	MW-3	MW-4	SW-1	SW-2
<b>EPA METHOD 825</b>							
N-Nitrosodiphenylamine	ug/L	<100	<100	<100	<100	<100	<100
Naphthalene	ug/L	<100	<100	<100	<100	<100	<100
Nitrobenzene	ug/L	<100	<100	<100	<100	<100	<100
Pentachlorophenol	ug/L	<100	<100	<100	<100	<100	<100
Phenanthrene	ug/L	<100	<100	<100	<100	<100	<100
Phenol	ug/L	72	<50	<50	<50	<50	<50
Pyrene	ug/L	<100	<100	<100	<100	<100	<100
PCB-1016	ug/L	<400	<400	<400	<400	<400	<400
PCB-1221	ug/L	<400	<400	<400	<400	<400	<400
PCB-1232	ug/L	<400	<400	<400	<400	<400	<400
PCB-1242	ug/L	<400	<400	<400	<400	<400	<400
PCB-1248	ug/L	<400	<400	<400	<400	<400	<400
PCB-1254	ug/L	<400	<400	<400	<400	<400	<400
PCB-1260	ug/L	<400	<400	<400	<400	<400	<400
Toxaphene	ug/L	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100
1,2,3-Trichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	ug/L	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	ug/L	<100	<100	<100	<100	<100	<100
2-Chlorophenol	ug/L	<50	<50	<50	<50	<50	<50
2-Methyl-4,6-Dinitrophenol	ug/L	<150	<150	<150	<150	<150	<150
2-Nitrophenol	ug/L	<50	<50	<150	<50	<50	<50
2,4-Dichlorophenol	ug/L	<50	<50	<50	<50	<50	<50
2,4-Dimethylphenol	ug/L	<50	<50	<50	<50	<50	<50
2,4-Dinitrophenol	ug/L	<200	<200	<200	<200	<200	<200
2,4-Dinitrotoluene	ug/L	<100	<100	<100	<100	<100	<100
2,4,6-Dinitrotoluene	ug/L	<50	<50	<50	<50	<50	<50
2,6-Dinitrotoluene	ug/L	<100	<100	<100	<100	<100	<100
3,3-Dichlorobenzidine	ug/L	<100	<100	<100	<100	<100	<100
4-Bromophenyl Phenyl Ether	ug/L	<100	<100	<100	<100	<100	<100
4-Chloro-3-Methylphenol	ug/L	<50	<50	<50	<50	<50	<50
4-Chlorophenyl Phenyl Ether	ug/L	<100	<100	<100	<100	<100	<100
4-Nitrophenol	ug/L	<150	<150	<150	<150	<150	<150
4,4'-DDD	ug/L	<50	<50	<50	<50	<50	<50
4,4'-DDE	ug/L	<50	<50	<50	<50	<50	<50
4,4'-DDT	ug/L	<50	<50	<50	<50	<50	<50

**OTHER**

Sulfate	ug/L				1197		
Total Dissolved Solids	ug/L	4520	12606	1402	6108	29212	4024
PAH		9.9	11.7	8	11.6	---	---

Form 1042C  
(1966, 63)

ST. R. NO. 9

Well No. 302619N0P1361P.1

Well No. 302619N0P1361P.1

WELL SCHEDULE  
U. S. DEPT. OF THE INTERIOR  
GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION

MASTER CARD

Recorded by J. Longo Source Records Date 3/1/74 For EASTPORT 7.5'

Well No. 719 (for town) 01261 Section 11.6

Latitude 30 26 19 N Longitude 0 2 13 6 W Township 1

Section 2 Range 10 Township 27 Range 46 Township SR9 Range 2

County 0-5-33 State LA Name of well ST. REGIS PAPPIE Address JAK 71A

Ownership (1) Fed Gov't, (2) State, (3) Local Gov't, (4) Private, (5) State Agency, (6) Water Dist. Corp of Co.

Use of well (a) Irrigation, (b) Domestic, (c) Industrial, (d) Power, (e) Stock, (f) Fish, (g) Hot, (h) Ind., (i) P. S., (j) Other. Comm

Depth to water (1) 0-10, (2) 10-20, (3) 20-30, (4) 30-40, (5) 40-50, (6) 50-60, (7) 60-70, (8) 70-80, (9) 80-90, (10) 90-100, (11) 100-120, (12) 120-140, (13) 140-160, (14) 160-180, (15) 180-200, (16) 200-250, (17) 250-300, (18) 300-350, (19) 350-400, (20) 400-450, (21) 450-500, (22) 500-550, (23) 550-600, (24) 600-650, (25) 650-700, (26) 700-750, (27) 750-800, (28) 800-850, (29) 850-900, (30) 900-950, (31) 950-1000, (32) 1000-1100, (33) 1100-1200, (34) 1200-1300, (35) 1300-1400, (36) 1400-1500, (37) 1500-1600, (38) 1600-1700, (39) 1700-1800, (40) 1800-1900, (41) 1900-2000, (42) 2000-2500, (43) 2500-3000, (44) 3000-3500, (45) 3500-4000, (46) 4000-4500, (47) 4500-5000, (48) 5000-5500, (49) 5500-6000, (50) 6000-6500, (51) 6500-7000, (52) 7000-7500, (53) 7500-8000, (54) 8000-8500, (55) 8500-9000, (56) 9000-9500, (57) 9500-10000, (58) 10000-11000, (59) 11000-12000, (60) 12000-13000, (61) 13000-14000, (62) 14000-15000, (63) 15000-16000, (64) 16000-17000, (65) 17000-18000, (66) 18000-19000, 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350000000000000000-400000000000000000, (410) 400000000000000000-450000000000000000, (411) 450000000000000000-500000000000000000, (412) 500000000000000000-550000000000000000, (413) 55000000000000



# ANALYTICAL SERVICE LABORATORY REPORT WATER ANALYSIS

FROM:  
ST. REGIS PULP AND PAPER COMPANY  
JACKSONVILLE, FLORIDA

ANALYSIS NO. S 48703  
DATE SAMPLED 3/ 9/78  
DATE RECEIVED 3/16/78  
DATE PRINTED 3/22/78

SAMPLE MARKED:  
WELL NO. 9

CATIONS:	PPM
CALCIUM (CACO3) - SOLUBLE	150.
MAGNESIUM (CACO3) - SOLUBLE	92.
SODIUM (CACO3)	35.
AMMONIA (CACO3)	*ND (0.6)

ANIONS:	PPM
BICARBONATE ALKALINITY (CACO3)	148.
CHLORIDE (CACO3)	41.
SULFATE (CACO3)	110.
NITRATE (CACO3)	*ND (1.)
SILICA (SIO2) - SOLUBLE	25.

OTHERS:	PPM
PH (PH UNITS)	7.6
ALKALINITY (CACO3) - TOTAL	148.
ALKALINITY (CACO3) - PHENOLPHTHALEIN	*ND (2.)
ALKALINITY (CACO3) - P-BACL2	*ND (2.)
CONDUCTIVITY (MICROMHOS PER CM)	540.
CONDUCTIVITY (MICROMHOS PER CM) - NEUTRALIZED	540.
CALCIUM (CACO3) - SOLUBLE AND INSOLUBLE	150.
MAGNESIUM (CACO3) - SOLUBLE AND INSOLUBLE	92.
IRON (FE) - SOLUBLE AND INSOLUBLE	*ND (0.1)

\*NOT DETECTED (BELOW INDICATED LIMIT OF DETECTION)

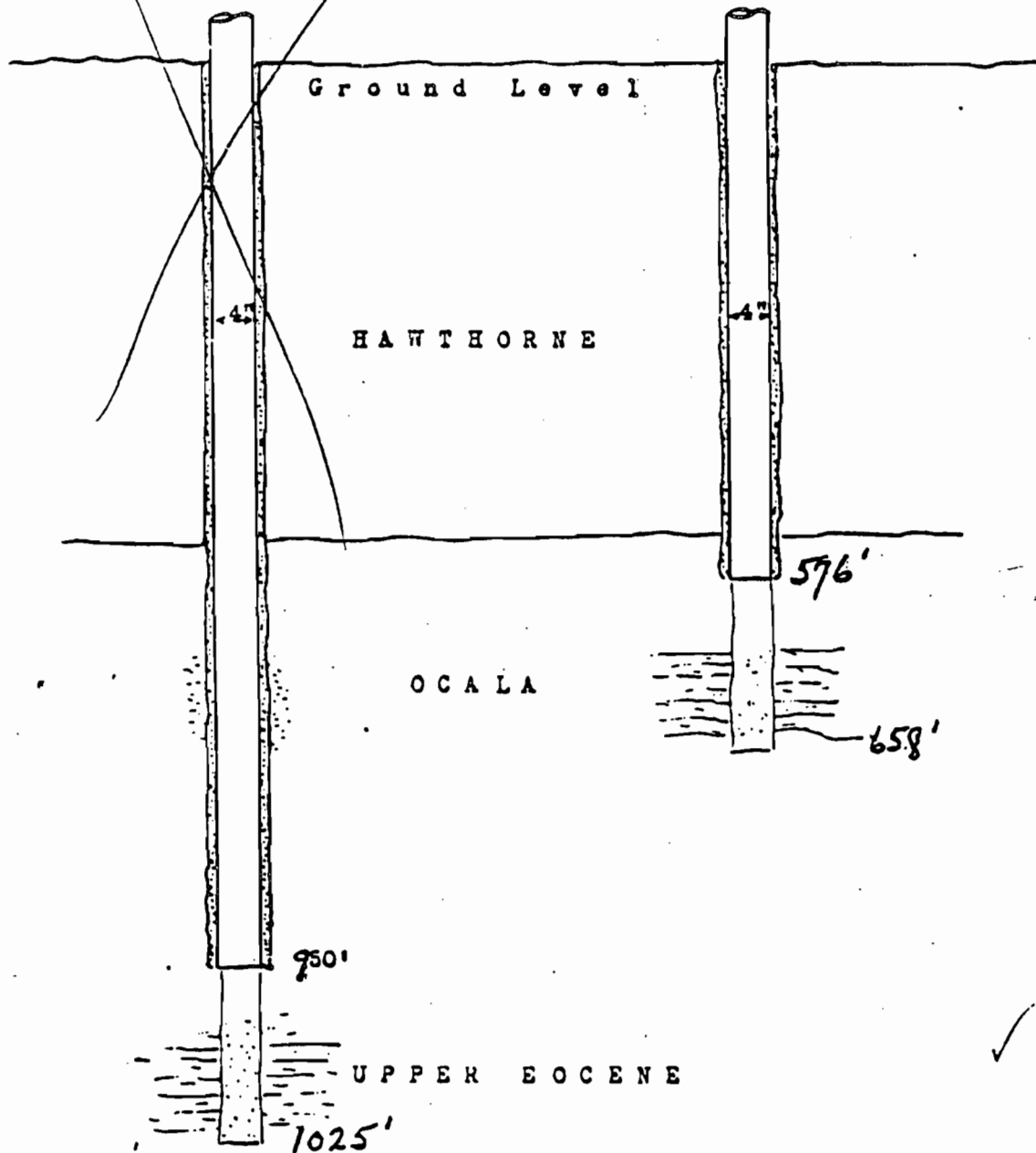
P. O. BOX 87 • SUGAR LAND, TEXAS 77478





D263 CENTER TEST Well No. 2 sealed into Upper Eocene only. HARDNESS TEST 148 P.P.M.

D262 WEST TEST Well No. 1 sealed into Ocala only. HARDNESS 240 P.P.M.



(All vertical dimensions are estimates, location and extent of principle aquifers will be determined by cores and test.)

# CENTER TEST WELL

BEST AVAILABLE COPY

U. S. DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Well Number 30-26-08-01-35-49-2

Water Resources Division Well Schedule Form

1:24,000

1951? Mr. Paul Schwaitzer 11-18-66 Eastport, Fla. 7.5 mi. Quad.

Section C Physiographic Province: Coastal Plain 0:3

Top of well casing: local depression, (1) flat surface, (2) hilltop, (3) hillside, (4) terrace, (5) valley floor. Flat E

MAJOR UNITS: TERTIARY T Floridan 1:F

Lithology: limestone L MARINE 6

Length of well open to: 175 ft. Depth to top of: 175 ft.

ST. REGIS PAPER CO. Eastport, Fla.

County: Duval 0:9

Latitude: 30 26 08 N Longitude: 081 35 49 W

Well depth: 1025 ft. Well open to: 1025 ft.

Well casing: COMPLETE

Well logs: IRREG. 5-26-66

WELL-DESCRIPTION CARD

PARSH WELL: 1025 ft. Reported 6

Well depth: 850 ft. 850 ft. Black Iron 4

1951? 9:5:1

Layer: Layan Atlantic? Savannah, Georgia

Top of T-flange: 1.0 ft. below top, alt. of 16.96 ft.

Instrument level: 15.96 ft. 1/6

Pressure Gage: +34.3 ft. +3.5

Well: 10-4-51 0.5:1

Well logs: 512 78 7.8 5-26-66 5:6:5

HYDROGEOLOGIC CARD

Section C Physiographic Province: Coastal Plain 0:3

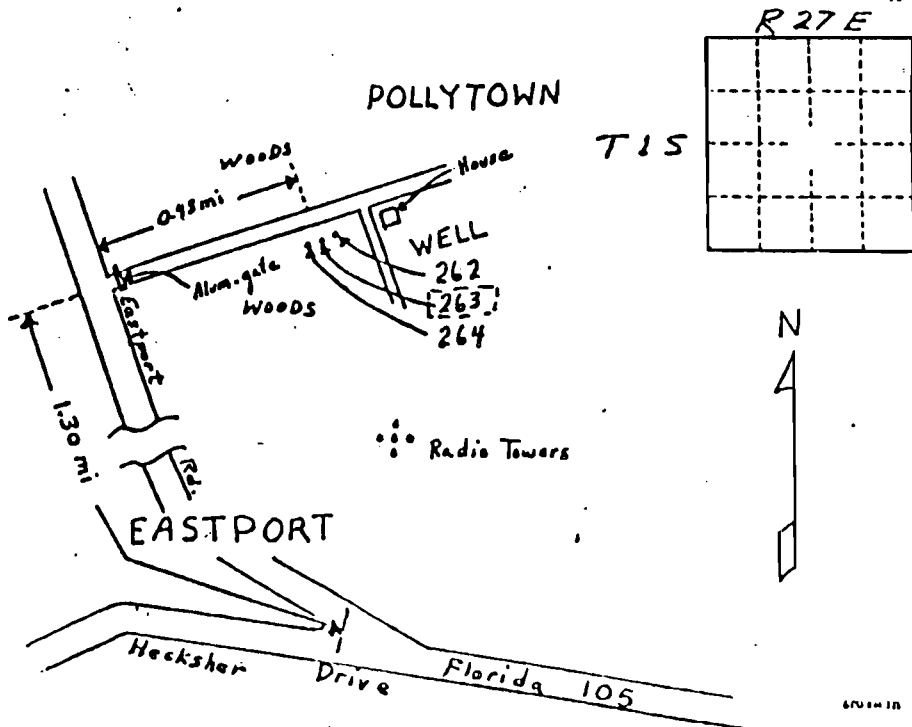
Top of well casing: local depression, (1) flat surface, (2) hilltop, (3) hillside, (4) terrace, (5) valley floor. Flat E

MAJOR UNITS: TERTIARY T Floridan 1:F

Lithology: limestone L MARINE 6

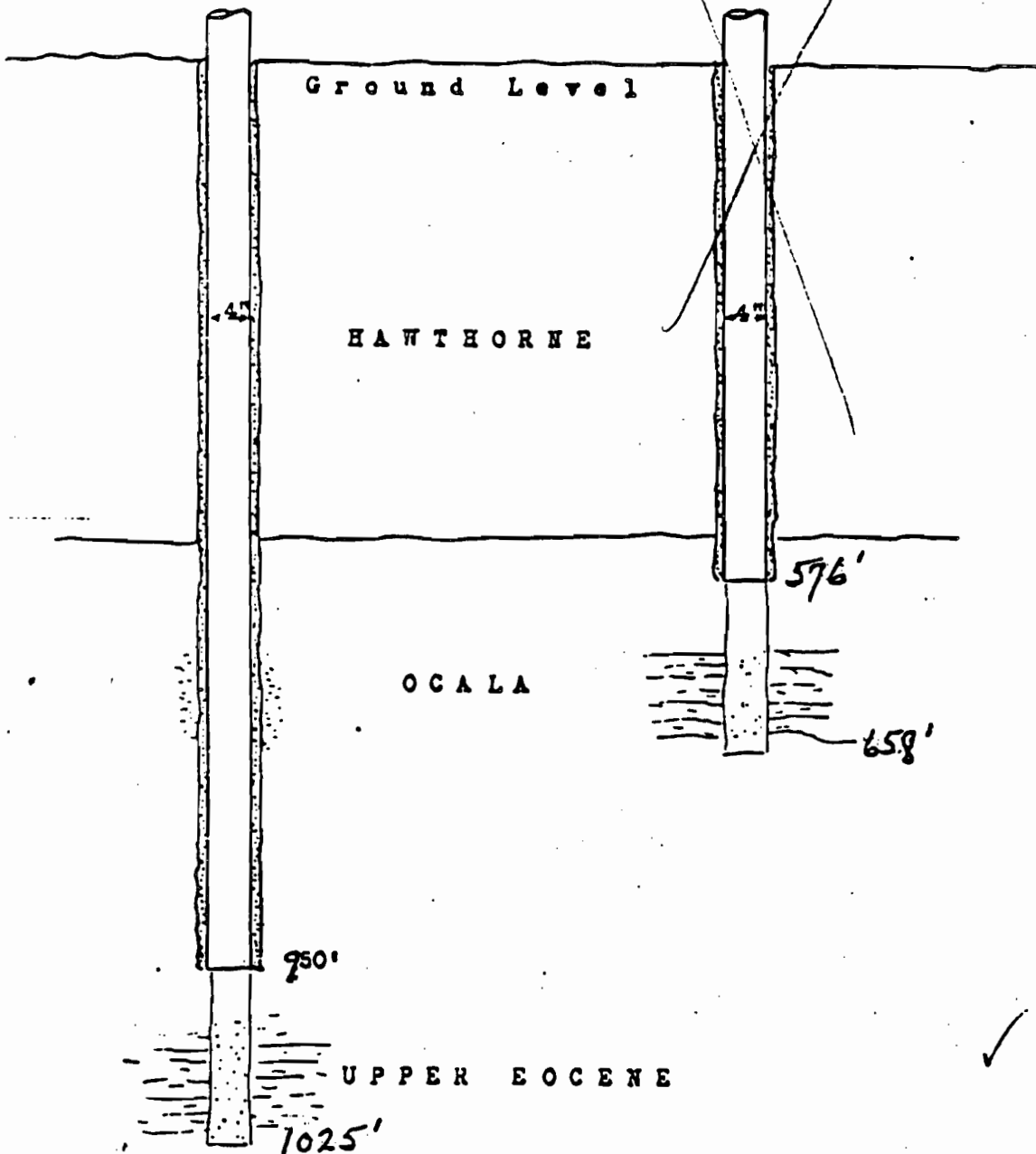
Length of well open to: 175 ft. Depth to top of: 175 ft.

Well logs: 512 78 7.8 5-26-66 5:6:5



D263  
CENTER  
TEST Well No. 2 sealed into Upper Eocene only. HARDNESS TEST 168 P.P.M.

D262  
WEST  
TEST Well No. 1 sealed into Ocala only. HARDNESS 240 P.P.M.



(All vertical dimensions are estimates, location and extent of principle aquifers will be determined by cores and test.)



BEST AVAILABLE COPY

BY \_\_\_\_\_ DATE \_\_\_\_\_  
CHKD. BY \_\_\_\_\_ DATE \_\_\_\_\_

SUBJECT OBSERVATION WELL No. 3  
St. Regis-Florida Pulp and Paper Corp.  
Eastport, Florida

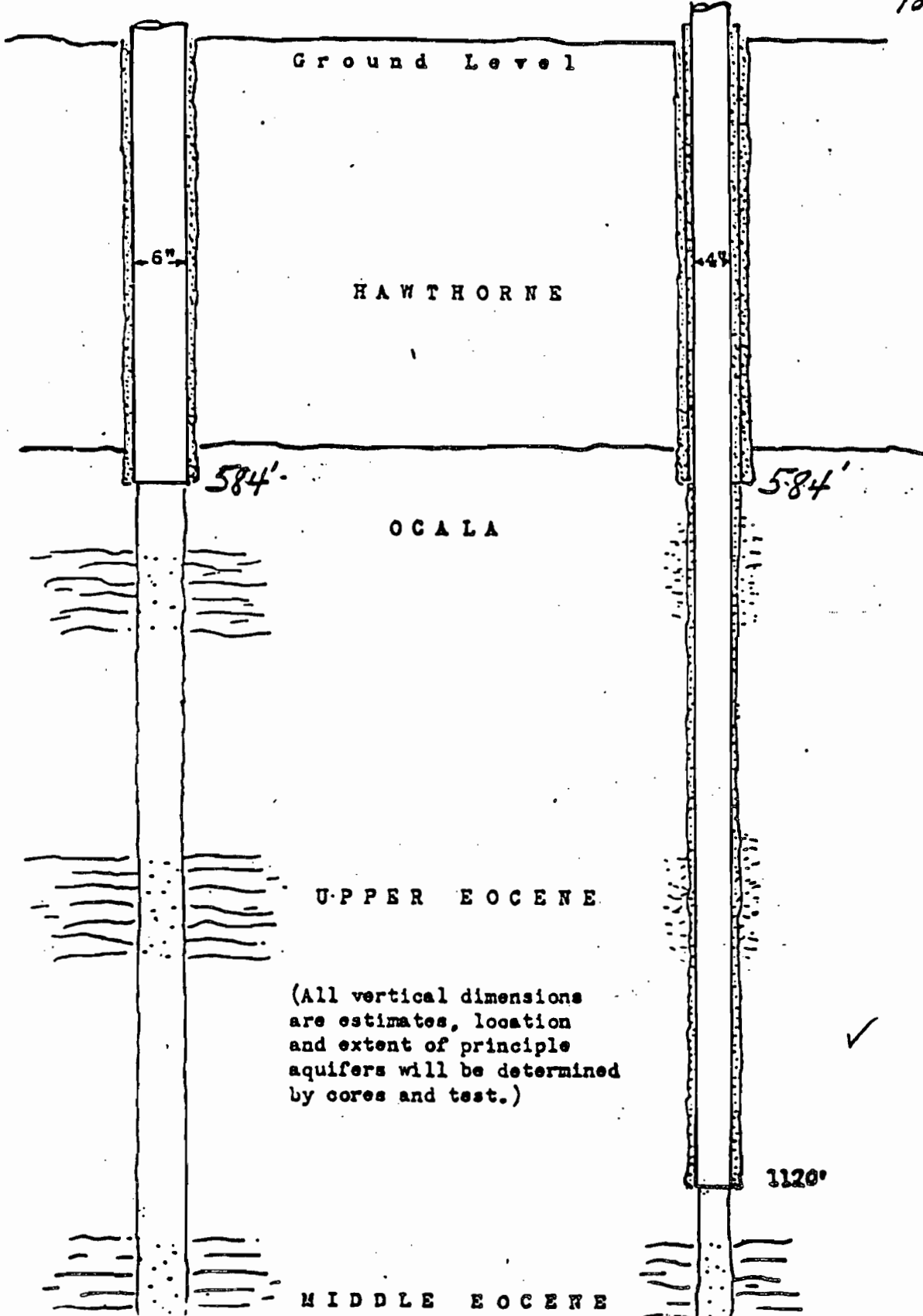
SHEET NO. \_\_\_\_\_  
JOB NO. \_\_\_\_\_

TEST WELL D264 EAST

First stage to recover cores,  
record flow between aquifers,  
electric log for resistivity.

Completed No. 3 observation  
Well connected to middle  
Eocene only.

HARDNESS  
106 P.P.M.





Recorded by Essex

U.S. DEPT. OF THE INTERIOR  
GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION  
GROUND WATER SITE INVENTORY  
SITE SCHEDULE

Date 20 Dec 76

Check One  English  Metric Units

GENERAL SITE DATA (01-)

Site Ident No 302525081371101 RG Number R-0 Transmission T-A O M V

Site Type 2-C D H I M P T (M) Data 3-U L M Reporting Agency A-FL039

Project No. 8- District 6-121 State 7-12 County (or town) DUVAL 8-03

Latitude 9-302525 Longitude 10-0813711 Lat-Long Accuracy 11-S 0 T M

Local Number 12- J-1017 Land Use 13-LUDERTS 47 TLS R27E

Location Map 14-EASTPORT Scale 15-24000

Altitude 18-200 Method of Measurement 17-A L (M) Accuracy 18-5

Type Section 19-D C (E) F H K L S P S T U V W Hydrologic Unit (GWOC) 20-03080103

Date of First Construction/Completion 21-12/00/1976 Use of Site 23-A D E G H S M P R S T (W) X Z

Use of Water 24-A B C D E F H I M (N) P R S T U Y Z

Secondary Water Use 25- Tertiary Use of Water 28- Depth of Hole 27-1285 Depth of Well 28-1285 Source of Depth Data 29-D

Water Level 30-19.6 Date Measured 31-12/17/1976 Source 33-S

Method of Measurement 34-A C (E) H L M R S T V Z

Site Status 32-D F G H S P R S T V X Z

Source of Geohydrologic Data 36- Pump Used 35-0 Measuring Point 206-0 Measuring Point Date 207-12/17/1976

OWNER IDENTIFICATION (1)

R-128 T-A D M V Date of Ownership 239-12/00/1976

Name Last 161-JACKSON First 162-CLYDE Middle Initial 163-

OTHER SITE IDENTIFICATION NUMBERS (1)

R-189 T-A D M V 190-2 ST 191- FLA 1000

New Card Same-R & T 190-5 CEDAR BAY 191-FL039

SITE VISIT DATA (1)

R-186 T-A D M V Date of Visit 187-12/17/1976 Name of Person 188-ESSEX

FIELD WATER QUALITY MEASUREMENTS (1)

R-192 T-A D M V Date 193-12/17/1976 Geohydrologic Unit 195-8

New Card Same R thro 195

Temperature 196-0 0 0 1 0 Degrees C 197-

Conductance 198-0 0 0 3 3  $\mu$ Mhos 197- 500 (L26)

Other (STORE) Parameter 199-00 9 4 0 Value 197- 20

Other (STORE) Parameter 199-2 9 0 0 Value 197- 0.66

FOOT NOTES:

① Source of Java Codes: S O G A R L G Z

Plotted \_\_\_\_\_  
Header \_\_\_\_\_  
Local # \_\_\_\_\_  
Keypunched \_\_\_\_\_





PRODUCTION DATA (17)

R=13448 T=ADM Entry No 1478001 Date 148-12/17/1976  
 Discharge: 150-1442.36 Source of Data 151-S  
 Method of Measurement: 153-B-C-E-F-M-O-P-R-T-U-V-W-Z  
 Production Level: 153- Source Level 154- Source of Data 155- Specific Capacity 272-  
 Method of Measurement: 158-A-C-E-G-H-L-M-R-S-T-V-Z Pumping Period 157-

LIFT DATA (1)

R=42 T=ADM Type of Lift 43# A-B-C-J-P-R-S-T-U-Z Entry No 254#001  
 Pump Leader Setting 44- Type of Power 45- O-E-G-H-L-N-W-Z  
 Date 46-12/17/1976 Horsepower 48-

MAJOR PUMP DATA (2)

R=47 T=ADM Type of Lift 43# Lift Entry No 254# Manufacturer of Pump 48-  
 Serial No of Pump 49- Name of Pump Company 50-  
 Power Company Account No 51- Power Motor No 52- Pump Rating 53-  
 Person or Company Who Maintains the Pump 54- Additional Lift 55- Rated Pump Capacity 56-

STANDBY POWER DATA (2)

R=55 T=ADM Type of Lift 43# Type of Power 56- Horsepower 57- Lift Entry No 254#

AVAILABLE LOG DATA (1)

R=198 T=ADM  
 Type of Log 199#  
 Begin Depth 200- End Depth 201- Source of Data 202-  
 199# 200- 201- 202-  
 199# 200- 201- 202-  
 199# 200- 201- 202-  
 199# 200- 201- 202-

WATER QUALITY DATA COLLECTION (1)

R=114 T=ADM Begin Year 115# End Year 116- Source Agency 117-  
 Frequency of Collection 118- Network Site 257- Type of Analysis 120-

WATER LEVEL DATA COLLECTION (1)

R=121 T=ADM Begin Year 122# End Year 123- Source Agency 124-  
 Frequency of Collection 125- Network Site 258-

WATER PUMPAGE/WITHDRAWAL DATA COLLECTION (1)

R=127 T=ADM Begin Year 128# End Year 129- Source Agency 130-  
 Frequency of Collection 131- Network Site 259- Method of Collection 133- C-E-M-U-Z

OTHER DATA AVAILABLE (1)

R=180 T=ADM Type of Data 181# Low 182- C-D-Z Form 261- F-M-P-Z  
 New Card Same R & T Type of Data 181# Low 182- C-D-Z Form 261- F-M-P-Z

FOOT NOTES:

① Source of Data Codes:

S-O-G-A-R-L-G-Z  
 reporting, other, meter, other part, other logs, postpaid, other agency reported.

② Type of Log Codes

A-B-C-D-E-F-G-H-I-J-K-L-M-N-O-P-Q  
 tank, well, spring, stream, river, pond, geologic, magnetic, industrial, general, distribution, monitoring, no. of logs, meter, p. level, slope, radius, other  
 S-T-U-V-Z  
 solid, tank, general, field, other general, velocity

③ Frequency of Collection Codes

A-B-C-D-F-I-M-S-O-S-W-Z  
 annual, biweekly, continuous, daily, semi-annual, monthly, quarterly, other, weekly, other monthly

④ Type of Query Analysis Codes

A-B-C-D-E-F-G-H-J-K-L-M-Z  
 physical, chemical, trace, particles, metals, heavy, water, water, water, water, water, all or other chemical analysis  
 S&D S&E S&F S&G C,D&E and

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79: A

**GEOHYDROLOGIC UNIT DESCRIPTIONS (1)**

R=90 T=ADM Entry No 256 00 Depth to Top 91 Depth to Bottom 92

Unit Identifier 93=120FLRD Lithology 96=LMSM Lithologic Modifier 97=MARINE

**AQUIFER DATA (2)**

R=94 T=ADM Geohydrologic Unit Entry No 256 Date 95 Water Level 128 % Water Contributed 132

**GEOHYDROLOGIC UNIT DESCRIPTIONS (1)**

R=90 T=ADM Entry No 256 Depth to Top 91 Depth to Bottom 92

Unit Identifier 93 Lithology 96 Lithologic Modifier 97

**AQUIFER DATA (2)**

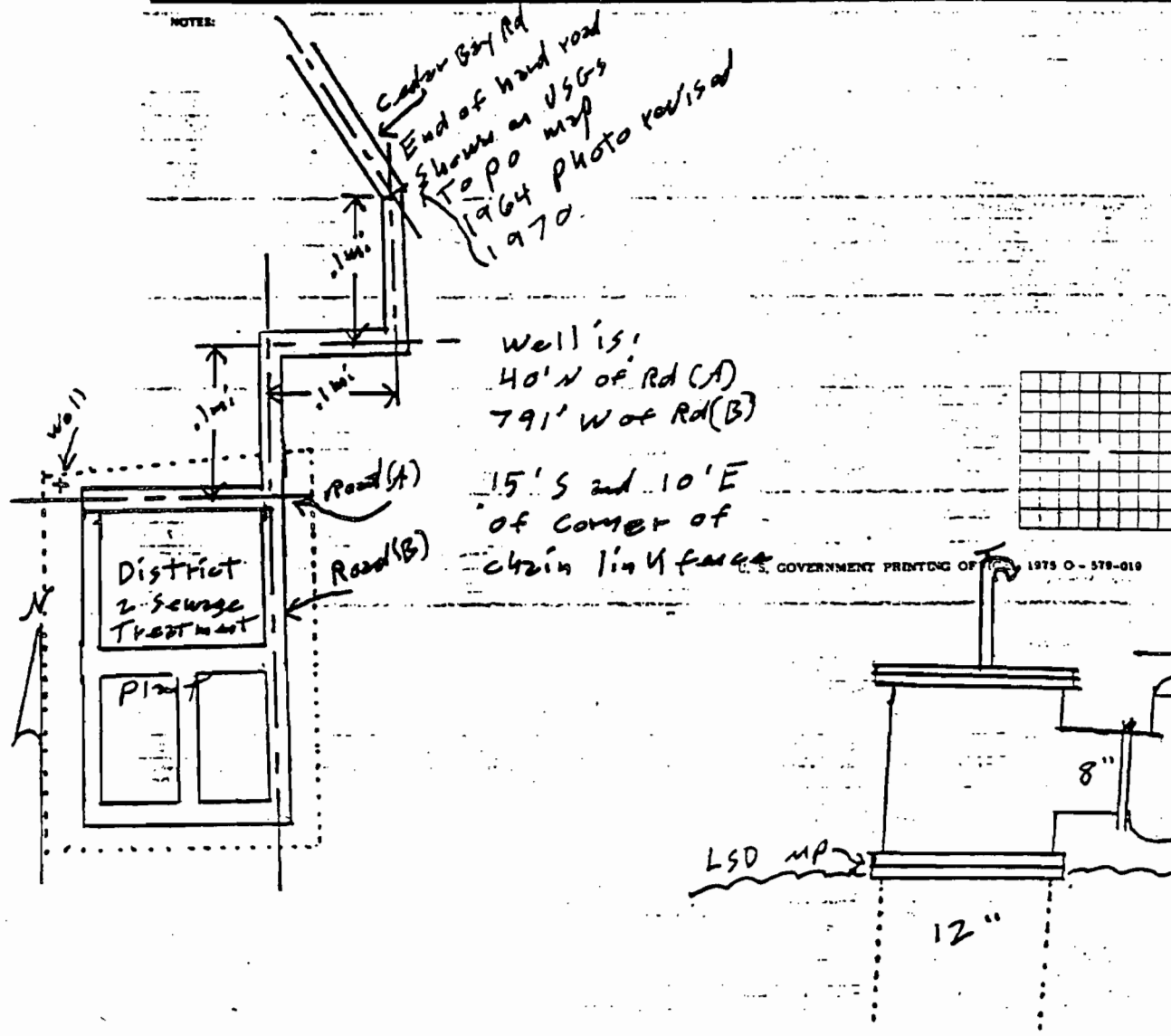
R=94 T=ADM Geohydrologic Unit Entry No 256 Date 95 Water Level 128 % Water Contributed 132

**PERTINENT REMARKS**

R=183 T=AM 188-  
 188-  
 188-  
 New Card Same R&T

NOTES:

*Carson Bay Rd  
 End of hard road  
 Shows on USGS  
 Topo map  
 1964 photo revised  
 1970.*



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FORM NO 9-1904-A

SITE NO. 30 24 51 001 36 34 01

Recorded by E. BALDUCCI

U.S. DEPT. OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
GROUND WATER SITE INVENTORY
SITE SCHEDULE

Date 10/12/1976

Check One English Metric Units

GENERAL SITE DATA (10)

Form containing general site data including Site Ident No (302451081363401), RG Number (R-0), Transaction (T-ADMV), Site Type (CDHIPTV), Reliability (3-U-L-M), Project No (5), District (5-12), State (7-12), County (DUVAL), Latitude (30.2451), Longitude (108.13634), Local Number (12-11129), Land No (LNDGRTS 47 T 1 S R 27 E), Location Map (14-EASTPORT), Scale (15-24000), Method of Measurement (17-A-L), Accuracy (18-5), Topo Setting (19-DCFHKLGPSTUVW), Hydrologic Unit (20-03090103), Date of First Construction/Completion (21-09/25/1976), Use of Site (23-ADEGHMNPQRSTUWXZ), Use of Water (24-A-B-C-D-E-F-H-I-M-N-R-S-T-U-Y-Z), Secondary Water Use (25), Tertiary Use of Water (26), Depth of Hole (27-660), Depth of Well (28-660), Source of Depth Data (29-D), Water Level (30), Date Measured (31-10/12/1976), Source (33), Method of Measurement (34-A-C-E-G-H-L-M-R-S-T-V-Z), Site Status (37-D-F-G-H-B-P-R-S-T-V-X-Z), Source of Geohydrologic Data (36), Pump Used (35), Measuring Point (266-2-12), Measuring Point Date (267-10/30/1976).

OWNER IDENTIFICATION (1)

Form containing owner identification including Name: Last (161-DICKERSON), First (162-I.N.C.), Middle Initial (163), Date of Ownership (159-09/25/1976).

OTHER SITE IDENTIFICATION NUMBERS (1)

Form containing other site identification numbers including Ident (190-33), Assigner (191-FLAW.M.D.), Ident (190-HECKSCHER), Assigner (191-FL039).

SITE VISIT DATA (1)

Form containing site visit data including Name of Person (186-BALDUCCI), Date of Visit (187-09/30/1976).

FIELD WATER QUALITY MEASUREMENTS (1)

Form containing field water quality measurements including Temperature (188-0.0.0.1.0), Degree C (187), Conductance (189-0.0.0.9.5), Other (STORE) Parameter (194), Value (197).

FOOT NOTES:

Source of Data Codes: S D O A R L G Z

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WELL CONSTRUCTION DATA (1)

W = 59. \*    T = A D M \*    Entry No. 59-0011    Date of Construction Completion 09/25/1976    Source of Const. Data 64-D  
add, delete, modify    month    day    year

Name of Contractor/Driller: 63-FLOYD, W. E. FLOYD, JR.

Method of Construction: 65-A    65-B    65-C    65-D    65-E    65-F    65-G    65-H    65-I    65-J    65-K    65-L    65-M    65-N    65-O    65-P    65-Q    65-R    65-S    65-T    65-U    65-V    65-W    65-X    65-Y    65-Z

Finish: 66-C    66-F    66-G    66-H    66-I    66-J    66-K    66-L    66-M    66-N    66-O    66-P    66-Q    66-R    66-S    66-T    66-U    66-V    66-W    66-X    66-Y    66-Z

Bottom of Seal: 67-1    Method of Development: 69-A    69-B    69-C    69-D    69-E    69-F    69-G    69-H    69-I    69-J    69-K    69-L    69-M    69-N    69-O    69-P    69-Q    69-R    69-S    69-T    69-U    69-V    69-W    69-X    69-Y    69-Z

Special Treatment During Development: 71-C    71-D    71-E    71-F    71-G    71-H    71-I    71-J    71-K    71-L    71-M    71-N    71-O    71-P    71-Q    71-R    71-S    71-T    71-U    71-V    71-W    71-X    71-Y    71-Z

DIMENSIONS OF THE HOLE CONSTRUCTED (2)

R = 72    T = A D M \*    Construction Entry No. 59-0011

Top of Hole Segment Below LSD	Bottom of Hole Segment below LSD	Diameter of Hole Segment
<u>73-0</u>	<u>74-660</u>	<u>75-3</u>
<u>73-1</u>	<u>74-</u>	<u>75-1</u>
<u>73-2</u>	<u>74-</u>	<u>75-1</u>
<u>73-3</u>	<u>74-</u>	<u>75-1</u>
<u>73-4</u>	<u>74-</u>	<u>75-1</u>
<u>73-5</u>	<u>74-</u>	<u>75-1</u>

New Card for Each Hole Segment Same R, T & Field 59

CASING SCHEDULE (2)

A = 75    T = A D M \*    Construction Entry No. 59-0011

Top of Casing Segment Below LSD	Bottom of Casing Segment Below LSD	Diameter of Casing Segment	Casing Material	Thickness of Casing
<u>77-0</u>	<u>78-550</u>	<u>79-3</u>	<u>80-5</u>	<u>81-</u>
<u>77-1</u>	<u>78-</u>	<u>79-</u>	<u>80-</u>	<u>81-</u>
<u>77-2</u>	<u>78-</u>	<u>79-</u>	<u>80-</u>	<u>81-</u>
<u>77-3</u>	<u>78-</u>	<u>79-</u>	<u>80-</u>	<u>81-</u>
<u>77-4</u>	<u>78-</u>	<u>79-</u>	<u>80-</u>	<u>81-</u>

New Card for Each Casing With Same R, T & Field 59

OPENINGS SCHEDULE (2)

R = 82    T = A D M \*    Construction Entry No. 59-0011

Top of Section Below LSD	Bottom of Section Below LSD	Type of Openings	Type of Material	Diameter of Open Section	Width of Opening	Length of Opening
<u>83-550</u>	<u>84-660</u>	<u>85-X</u>	<u>86-</u>	<u>87-3</u>	<u>88-</u>	<u>89-</u>
<u>83-1</u>	<u>84-</u>	<u>85-</u>	<u>86-</u>	<u>87-</u>	<u>88-</u>	<u>89-</u>
<u>83-2</u>	<u>84-</u>	<u>85-</u>	<u>86-</u>	<u>87-</u>	<u>88-</u>	<u>89-</u>
<u>83-3</u>	<u>84-</u>	<u>85-</u>	<u>86-</u>	<u>87-</u>	<u>88-</u>	<u>89-</u>
<u>83-4</u>	<u>84-</u>	<u>85-</u>	<u>86-</u>	<u>87-</u>	<u>88-</u>	<u>89-</u>

New Card for Each Open Section With Same R, T and Field 59

FOOT NOTES:

- ① Source of Data Codes: S D B A R L G Z  
reporting, driller, owner, other gas's, other logs, geologist, other agency
- ② Type of Openings Codes: F L M P R S T W X Z  
fracture, lowered, mesh, perforated, wire screen, sand, welded, open, other untested or slotted, wood, laminated panel, hole
- ③ Casing Material Codes: B C G I M P R S T U W Z  
brick, concrete, galv, wrought, other, PVC or, foam or, steel, tile, coated, wood, other iron iron metal plastic stone steel
- ④ Type of Material Codes for Open Sections: B C G I M P R S T Z  
brass or, concrete, galv, wrought, other, PVC or, aluminum, steel, tin, other bronze iron iron metal plastic steel

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## PRODUCTION DATA (1)

**R** = 134 146 | **T** = A D M | Entry No 147 C | Date 148 = / / |  
Number, pumps add, delete, modify

Discharge 150 = | Source of Data 151 = |

Method of Measurement 152 = B C E F M O P R T U V W Z |  
Scale, current, estimated, flow, existing, orifice, pitot-tube, reported, transient, venturi, volumetric, weir, other

Production Level 153 = | Static Level 154 = | Source of Data 155 = | Specific Capacity 272 = |

Method of Measurement 156 = A C E G H L M R S T V Z | Pumping Period 157 = |  
orifice, calibrated, estimated, flow, orifice, piezometric, manometer, reported, flow, electric, calibrated, other

## LIFT DATA (1)

**R** = 42 | **T** = A D M | Type of Lift 43 = A B C J P R S T U Z | Entry No 254 = |  
add, delete, modify

Pump Intake Strang 44 = | Type of Power 45 = O E G H L N W Z |  
diesel, electric, gasoline, hand, LP gas, natural, windmill, other gas

Date 38 = / / | Horsepower 46 = |

## MAJOR PUMP DATA (2)

**R** = 47 | **T** = A D M | Type of Lift 43 = | Lift Entry No 254 = | Manufacturer of Pump 48 = |  
add, delete, modify

Serial No of Pump 49 = | Name of Power Company 50 = |

Power Company Account No 51 = | Power Meter No 52 = | Pump Rating 53 = |

Person or Company Who Maintains the Pump 54 = | Additional Lift 255 = | Rated Pump Capacity 268 = |

## STANDBY POWER DATA (2)

**R** = 55 | **T** = A D M | Type of Lift 43 = | Type of Power 45 = | Horsepower 57 = | Lift Entry No 254 = |  
add, delete, modify

## AVAILABLE LOG DATA (1)

**R** = 198 | **T** = A D M | New Card for Each Log Type Same R & T

Type of Log	Begin Depth	End Depth	Source of Data
199 =	200 =	201 =	202 =
199 =	200 =	201 =	202 =
199 =	200 =	201 =	202 =
199 =	200 =	201 =	202 =

## WATER QUALITY DATA COLLECTION (1)

**R** = 114 | **T** = A D M | Begin Year 115 = | End Year 116 = | Source Agency 117 = |  
add, delete, modify

Frequency of Collection 118 = | Network Site 257 = | Type of Analysis 120 = |

## WATER LEVEL DATA COLLECTION (1)

**R** = 121 | **T** = A D M | Begin Year 122 = | End Year 123 = | Source Agency 124 = |  
add, delete, modify

Frequency of Collection 125 = | Network Site 258 = |

## WATER PUMPAGE WITH REMOVAL DATA COLLECTION (1)

**R** = 127 | **T** = A D M | Begin Year 128 = | End Year 129 = | Source Agency 130 = |  
add, delete, modify

Frequency of Collection 131 = | Network Site 259 = | Method of Collection 133 = C E M U Z |  
calculated, estimated, metered, unknown, other

## OTHER DATA AVAILABLE (1)

**R** = 180 | **T** = A D M | Type of Data 181 = | Loc 182 = C O Z | For. Nat. 261 = F M P Z |  
add, delete, modify

New Card Same R & T | Type of Data 181 = | Loc 182 = C D Z | Format 261 = F M P Z |

## FOOT NOTES:

① Source of Data Codes.

S	O	O	A	R	L	G	Z
---	---	---	---	---	---	---	---

reporting, other, water, other gov't, other, test, geologist, other agency reported.

② Type of Log Codes

A	B	C	O	E	F	G	H	I	J	K	L	M	N	O	P	O
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

flow, orifice, orifice, orifice, electric, fluid, geologist, magnetic, induction, gamma, diameter, lateral, micropipe, neutron,  $\mu$  meter, photo, radio, sonar

S	T	U	V	Z
---	---	---	---	---

static, temp, gamma, fluid, other gamma, electric

③ Frequency of Collection Codes

A	B	C	D	F	I	M	O	S	W	Z
---	---	---	---	---	---	---	---	---	---	---

annual, bi-monthly, continuous, daily, 15 min, intermittent, monthly, one time, quarter, semi, weekly, other monthly

④ Type of Quality Analyses Codes

A	B	C	D	E	F	G	H	J	K	L	M	Z
---	---	---	---	---	---	---	---	---	---	---	---	---

physical, chemical, trace, pesticides, nutrients, nutrients, acids, bases, gases, odors, solids, color, turbidity, pH, etc., other

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**GEOHYDROLOGIC UNIT DESCRIPTIONS (1)**

H = 90 | T = 10 D M | Entry No 258 001 | Depth to Top 91 | Depth to Bottom 92

Unit Identifier 93 12AFLRD | Lithology 98 LMSH | Lithologic Modifier 97 MARINE

**AQUIFER DATA (2)**

R = 04 | T = A D M | Geohydrologic Unit Entry No 258 | Date 95 / / | Water Level 125 | % Water Contributed 132

**GEOHYDROLOGIC UNIT DESCRIPTIONS (1)**

R = 90 | T = A D M | Entry No 258 | Depth to Top 91 | Depth to Bottom 92

Unit Identifier 93 | Lithology 98 | Lithologic Modifier 97

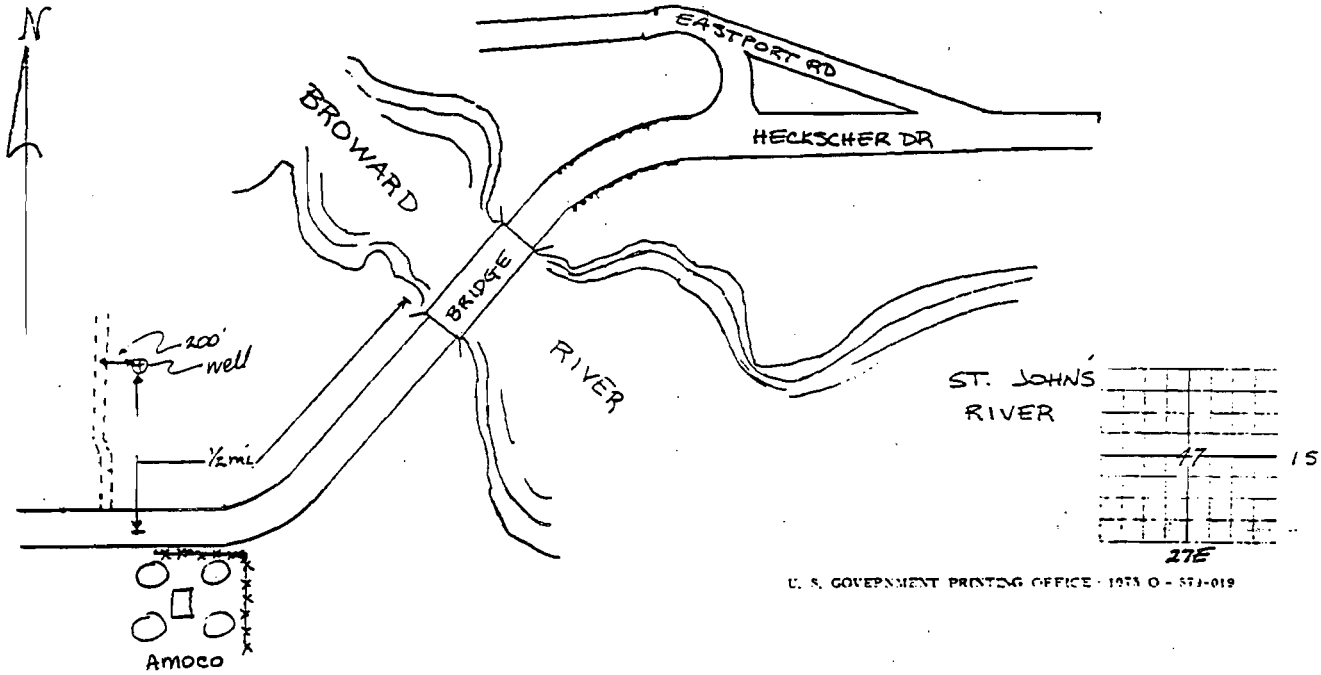
**AQUIFER DATA (2)**

R = 04 | T = A D M | Geohydrologic Unit Entry No 258 | Date 95 / / | Water Level 125 | % Water Contributed 132

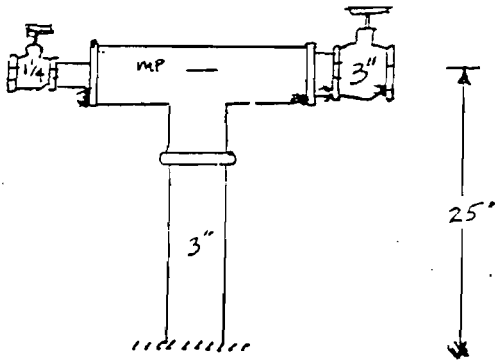
**PERTINENT REMARKS**

R = 183 | T = A | 185  
 185  
 New Card Same R&T  
 185

**NOTES:**



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FORM NO 9-1904-A

SITE NO. 302538081365501

Recorded by ESSEX

U.S. DEPT. OF THE INTERIOR  
GEOLOGICAL SURVEY  
WATER RESOURCES DIVISION  
GROUND WATER SITE INVENTORY  
SITE SCHEDULE

Date 6-23-80

Check One  English  Metric Units

GENERAL SITE DATA (0)

Site Ident No 302538081365501 RG Number R=0 Transaction T=(A) D M V  
add, delete, modify, verified

Site-Type 2=C D H I M P T (W) Data 3=(C) U L M Reporting Agency 4=FL039  
collector, drain, sinkhole, connector, multiple, pond, tunnel or well shaft field checked, unobserved, location nos, minimal accurate date

Project No. 5= District 6=121 State 7=12 County (or town) DUV21 8=031

Latitude 9=302538 Longitude 10=0813655 Lat-Long Accuracy 11=S (D) T M  
deg min sec deg min sec sec, 5 min, 10 sec, Min

Local Number 12= Land Net Loc. 13=SESWSE8 T1S R27E  
1/4 1/4 1/4 section, township, range, meridian

Location Map 14=EAST POINT Scale 15=24000

Altitude 16=119 Method of Measurement 17=A L (M) Accuracy 18=5  
altimeter, level, map

Topo Setting 19=D C E F H K L O P (S) T U V W Hydrologic Unit (OWDC) 20=03080103  
depression, stream, dunes, flat, hilltop, sink, swamp, offshore, pediment, hillside, terrace, undulating, valley, upland flat draw

Date of First Construction/Completion 21=00/00/1970 Use of Site 23=A D E G H O M P R S T U (V) X Z  
month day year anode, drain, gas, vent, heat, absorber, mine, oil or, recharge, repress, tool, unobs, with-waste, destroyed, thermal, reservoir, gas, drawal

Use of Water 24=A B C D E F H I M N P R S T (U) Y Z  
air cond., bathing, commercial, dewater, power, fire, domestic, irrigation, medicinal, industrial, public, recreation, stock, institution, unused, desert, other supply

Secondary Water Use 25= Tertiary Use of Water 26= Depth of Hole 27= Depth of Well 28= Source of Depth Data 29=

Water Level 30= Date Measured 31= Source 33=  
month day year

Method of Measurement 34=A C E G H L M R S T V Z  
swine, calibrated, estimated, pressure, calibrated, geophysical, manometer, reported, steel, electric, calibrated, other surface, log, tape, log, electric, tape

Site Status 37=D F G H O P R S T V X Z  
dry, flowing, nearby, nearby, obstruction, pumping, recently, nearby, nearby, foreign surface water other, recently, recently, recently, substance, effects, pumped, pumped

Source of Geohydrologic Data 36= Pump Used 35= Measuring Point 266= Measuring Point Date 267=  
no month day year

OWNER IDENTIFICATION (1)

R=158 T=(A) D M Date of Ownership 159=00/00/1970  
add, delete, modify month day year

Name: Last 161=ROC. KAWAJI First 162=BEACH Middle Initial 163=

OTHER SITE IDENTIFICATION NUMBERS (1)

R=189 T=(A) D M Ident 190=SW Assigner 191=FLA WAD  
add, delete, modify

New Card Same R & T. Ident 190=CEDAR BAY Assigner 191=FL039

SITE VISIT DATA (1)

R=186 T=(A) D M Date of Visit 187=05/19/1975 Name of Person 188=ESSEX  
add, delete, modify month day year

FIELD WATER QUALITY MEASUREMENTS (1)

R=192 T=A D M Date 193= Geohydrologic Unit 195=  
add, delete, modify month day year

New Card Same R thru 135 Temperature 196=0,0,0,1,0 Degrees C 197=  
 Conductance 195=0,0,0,9,5 u Mhos 197=

Other (STORET) Parameter 196= Value 197=

Other (STORET) Parameter 196= Value 197=

FOOT NOTES:

① Source of Data Codes:  
S D O A R L G Z  
reporting, drifter, owner, other gov't, other agency logs, geologist, other reported.

Plotted \_\_\_\_\_  
 Header \_\_\_\_\_  
 Local # \_\_\_\_\_  
 Key punched \_\_\_\_\_



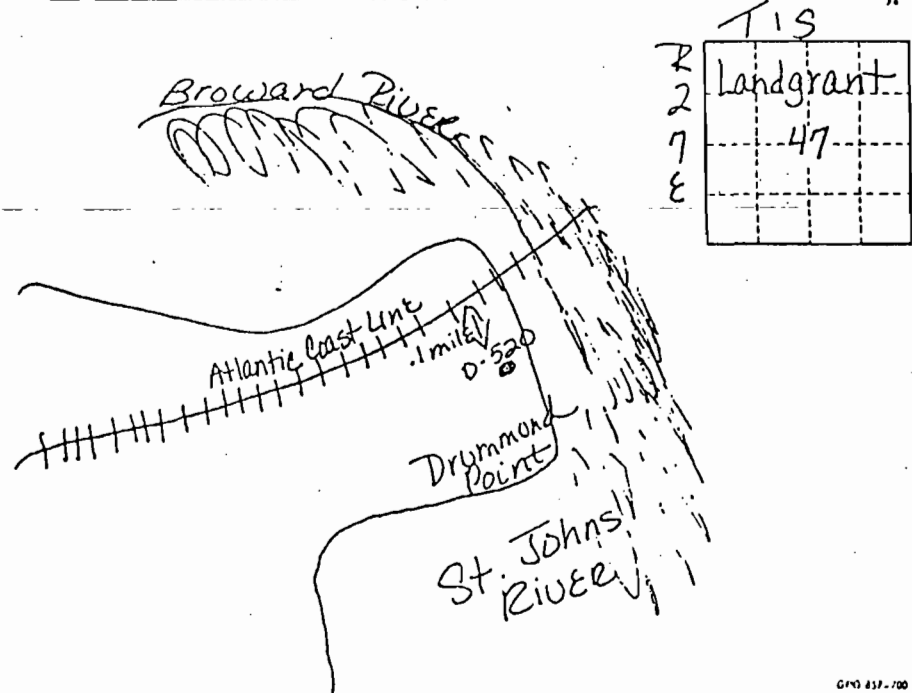




MASTER CARD (H. H. C. 9/12/40)  
 Record by Sandi Price Office Record 2/17/44 Eastport 7.5'  
 State Florida County Duval District T. 6  
 Latitude: 30 24 52 N Longitude: 08 13 36 W Sequential number: 11  
 Locating agency: 270 Landgrant Talla.  
 Local well number: D-520 # 162  
 Local use: 0.1 9.2 7.4 7. Owner of mine: Foley Lumber Co.  
 Owner or name: F. O. L. E. Y. L. U. M. B. E. R. C. O. Address: Jacksonville, Fla.  
 Ownership: (C) County, Fed Gov't, City, Corp of Co., (F) Private, State Agency, Water Dist Corp or Co   
 Use of water: (A) Air cond., Bottling, Chem., Dewater, Power, Fire, Dom. Irr., Ind., P. S., Acc., (B) Stock, Insect, (C) Unused, (D) Recharge, (E) Dual-P S., (F) Dual-Other, Other Unused   
 Use of well: (A) Arode, Drain, Salinic, Heat Acq., Obs., Oil-gas, Recharge, Test, (U) Unused, (W) Withdraw, Waste, Destroyed   
 DATA AVAILABLE: Well data  Reg. Well data: Observation  field aquifer char.   
 Hyd. lab. data:   
 Qual. water data: type:   
 Reg. sampling:  Purpose inventory:  no:  period:   
 Apper. cards:    
 Log data:

WELL-DESCRIPTION CARD  
 SAME AS ON MASTER CARD Depth well: 17 ft. Meas.   
 Depth casing: 13.70 ft. Casing 1.4 ft. Accuracy   
 Finish: (C) Porous gravel w. gravel w. huffs, open concrete, (perf.) (screen), gallery, and, (D) Perf., screen, ad. pt., shored, R.B.L., (E) Other   
 Method: (A) Air bored, cable, dug, hyd jetted, (B) auger, (C) auger, (D) auger, (E) auger, (F) auger, (G) auger, (H) auger, (I) auger, (J) auger, (K) auger, (L) auger, (M) auger, (N) auger, (O) auger, (P) auger, (Q) auger, (R) auger, (S) auger, (T) auger, (U) auger, (V) auger, (W) auger, (X) auger, (Y) auger, (Z) auger   
 Drilled: 9/14/40 Pump intake setting: 4.4.0 ft.   
 Drilling: (A) Auger, (B) Auger, (C) Auger, (D) Auger, (E) Auger, (F) Auger, (G) Auger, (H) Auger, (I) Auger, (J) Auger, (K) Auger, (L) Auger, (M) Auger, (N) Auger, (O) Auger, (P) Auger, (Q) Auger, (R) Auger, (S) Auger, (T) Auger, (U) Auger, (V) Auger, (W) Auger, (X) Auger, (Y) Auger, (Z) Auger   
 Power: (A) Diesel, elec, gas, gasoline, hand, gas, wind, H.P., (B) LP  Horse power of motor: 17  
 Capacity: Top of 6" valve 3.3 (above) LSD. Alt. MP 17  
 Alt. LSD: 13.70 Accuracy: Instrument Level   
 Water level: 30.9 ft. (above) MP; ft. below LSD +3.4 Accuracy: Pressure Gauge   
 Date: 9/14/40 Yield: 4.4.0 Method determined   
 Drawdown: 13.70 ft. Accuracy:  Pumping method   
 QUALITY OF WATER DATA: Iron  Sulfate  Chloride  Hard.   
 Sp. Conduct. 9.4.0 K m D  Temp.  Date analyzed   
 Taste, color, etc. 762

HYDROGEOLOGIC CARD  
 SAME AS ON MASTER CARD Physiographic Province: Coastal Plain 0.3 Section: Floridan  
 Section: 0 Drainage Basin: St. Johns River 0.9.E Subbasin: Below Okla. 3  
 Topo of well site: (D) depression, stream channel, dunes, (E) flat, hilltop, sink, swamp, (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z) flat   
 MAJOR AQUIFER: Tertiary, Coeene T.E. Floridan I.F.  
 Lithology: Lime Stone L Origin: Marine 6 Aquifer thickness:   
 Length of well open to:  ft. Depth to top of:  ft.  
 Length of well open to:  ft. Depth to top of:  ft.  
 Intervals screened:   
 Depth to consolidated rock:  ft. Source of data:   
 Depth to basement:  ft. Source of data:   
 Surficial material:  Infiltration characteristics:   
 Coefficient of storage:  Coefficient of transmissibility:   
 Form:  Spm/ft.  Spm/ft.  Number of geologic cards:



Well No. 302452 N0813612.1

Well No. 302452 N0813612.1

WB Form (CV)  
April 1964

Well No. 308533108136061

Well No. 308533108136061

WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR GEOLOGICAL SURVEY WATER RESOURCES DIVISION

MASTER CARD

Record by OWelle Source of data Driller's Log 4/4/60 Eastport Quad

State Florida County Duval Locality 7

Latitude: 30 25 22 N Longitude: 081 36 06 W

Section C Well name St. Johns Riv Well type Flat

Local well number D-274 Name D-274 #2

Local use ST. REGIS PAPER Address Eastport Fla

Ownership Corporation

Use of well Industrial Commercial

Use of well Water

DATA AVAILABLE: Well logs  Test logs  Field notes

Well logs: Driller's Log

Use data Fla. Geological Survey Log

WELL-DESCRIPTION CARD

Well name 1394 Well depth 1390 Reported 6

Depth to water 60.5 Depth to bedrock 2.0

Stratigraphic units: L. Aquifer Atlantic

Drilling: Hand

Drill bit: 4 1/2 in

Flow: Flow

Remarks: Flow

Alt. LSD: 60.5

Flow: Flow

Drill bit: 4 1/2 in

Flow: Flow

Remarks: Flow

HYDROGEOLOGIC CARD

NAME AS ON MASTER CARD Coastal Plain Province: Coastal Plain

Section C Well name St. Johns Riv Well type Flat

MAJOR SURFACE Flatly Elevation 7.5 Florida 7.5

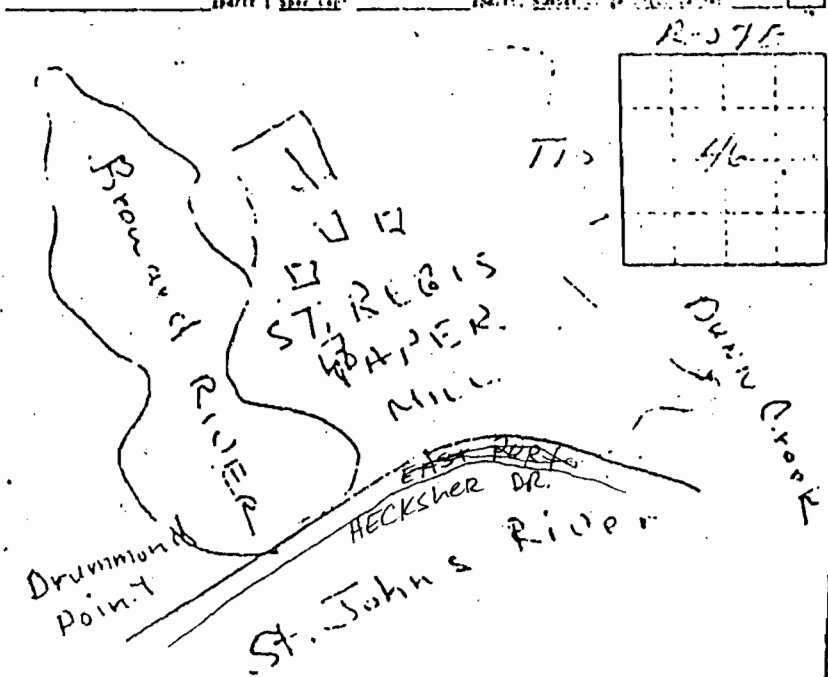
Lithology Limestone Length of well open to 570 Depth to top of 1390

MAJOR SURFACE Flatly Elevation 7.5 Florida 7.5

Lithology Limestone Length of well open to 570 Depth to top of 1390

MAJOR SURFACE Flatly Elevation 7.5 Florida 7.5

Lithology Limestone Length of well open to 570 Depth to top of 1390



308533108136061

WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR

GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

BEST AVAILABLE COPY

Latitude-Longitude 30 24 52<sup>0</sup> 081 36 12

MASTER CARD (H. H. C. 9/12/40)

Record by: Sandi Price Source of Data: Office Record Date: 2/17/74 Loc: Eastport 7.5'

State: Florida County: Duval District: 1:6

Latitude: 30 02 45.2 N Longitude: 081 36 12 W Sectional number: 116

Local well number: D-520 Other number: Fd #162

Local use: 019 278 47 Name of owner: Foley Lumber Co.

Owner or name: F. O. L. E. Y. L. U. M. B. E. R. C. O. Address: Jacksonville, Fla.

Ownership: County, Fed Gov't, City, Corp or Co, Private, State Agency, Major Dist: Corp or Co  M

Use of well: Unused  U

DATA AVAILABLE: Well data  Freq. W/L meas.: Observation  Field equifer char.

Hyd. lab. data:

Qual. water data:

Freq. sampling:  Pumpage inventory:  no. period:

Aperture cards:  yes

Log data:

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD

Depth well: 13.70 ft Mess. 17 accuracy

Depth casing (first part): 13.70 ft Casing type: 1 1/4 DIAM. 17

Material: concrete  (C) porous gravel w. horiz. open part., screen, ad. pt., shored, etc.  (P) (S) (T) (L) (R) (A)

Method: Drilled  (A) (S) (C) (D) (H) (J) (F) (R) (T) (V) (W) (R) (A)

Data: Drilled  Pump intake setting: 13.70 ft

Drilling: Top of 6" valve 3.3 ft above LSD. Alt. MP 17

Alt. LSD: 13.70 Accuracy: Instrument + Level  D

Water level: 30.9 ft above MP; ft below LSD +13.4 Accuracy: Pressure Gauge  H

Date meas.: 9/14/40 9 4 0 Yield: 4.4 gpm Method determined

Drawdown: 4.4 ft Accuracy: 4.4 hrs Pumping period

QUALITY OF WATER DATA: Iron ppm Sulfate ppm Chloride ppm Hard. ppm

Sp. Conduct. 4.4 x 10<sup>6</sup> Temp. 4.4 °F Date sampled 4.4

Taste, color, etc. 762

HYDROGEOLOGIC CARD

PHYSIOGRAPHIC PROVINCE: Coastal Plain 0:3 SECTION: Floridan

Section: 0 STRATIGRAPHIC UNIT: St. Johns River 0:9:E SUBSTRATE: Below Okla. 3

Top of depression, stream channel, dunes (flat, hilltop, sink, swamp), well sites: flat  E

MATERIAL ACQUIFER: Tertiary 0:9:E Floridan 1:6  E

Lithology: Lime stone L Origin: Marine 6  E

Length of well open to: 13.70 ft Depth to top of: 13.70 ft

Interval screened: 13.70 ft

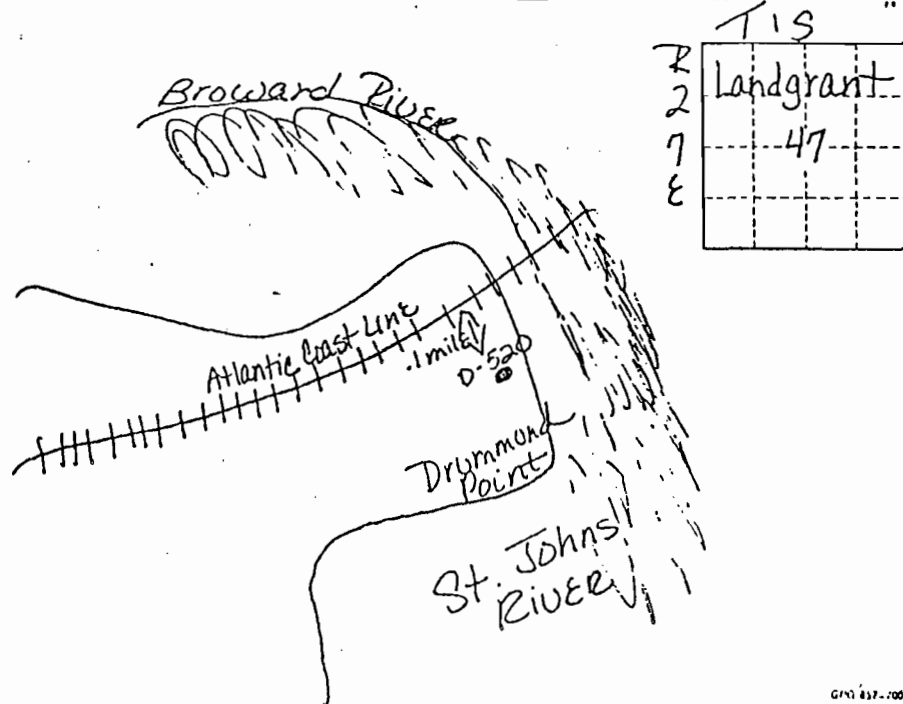
Depth to consolidated rocks: 13.70 ft Source of data: 17

Depth to basement: 13.70 ft Source of data: 17

Surficial material: 13.70 ft Infiltration characteristics: 17

Coefficient Trans: 13.70 apd/ft Coefficient Storage: 17

Coefficient Perm: 13.70 apd/ft Spec cap: 17 gpm/ft; Number of geologic cards: 17



Well No. 302452 N0813612.1

Well No. 302452 N0813612.1



WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR

GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

MASTER CARD (A11) Field Records Date: 3/28/74 District: 75

Record by: H.H. Cooper State: FLA. County: Duval City: 116

Latitude: 30 02 55.9 N Longitude: 081 45 55.5 W Sequential number: 1

Local well number: 0-568 Owner of name: Mrs. Hilderbrand

Address: Day, 71A

Ownership: Private

Use of well: Stock

DATA AVAILABLE: Well data  Irreg. W/L meas.: Original 3/24/40 Field aquifer char.

Hyd. lab. data:

Qual. water data:

Freq. sampling:  Pumpage inventory:  Period:

Aperture cards:

Log data:

WELL-DESCRIPTION CARD

DEPTH WELL: 550 ft. Casing TYPE: Iron Dia: 3 in.

Finish: portland concrete

Method: air bored

Date: 1934

Driller: Grey Well Drilling

Alt. LSD: 20.929 Accuracy: Just Level

Water Level: 34.9 Accuracy: Press. Gauge

Yield: 5.5 gpm

Water Data: Iron Sulfate: 85 Chloride: 21 Hard: 249

Temp: 23.0

BEST AVAILABLE COPY

Latitude-Longitude 30 25 59 081 45 55

HYDROGEOLOGIC CARD

PHYSIOGRAPHIC PROVINCE: Coastal Plain Section: Floridian

ST. JOHN R. 0.9 E Below OKlawaha 3

MAJOR AQUIFER: Tertiary. Eocene Floridian

Lithology: Limestone Origin: Marine Thickness: 6 ft.

Length of well open to: 0 ft. Depth to top of: 0 ft.

MAJOR AQUIFER: None Thickness: 0 ft.

Length of well open to: 0 ft. Depth to top of: 0 ft.

Interval Screened:

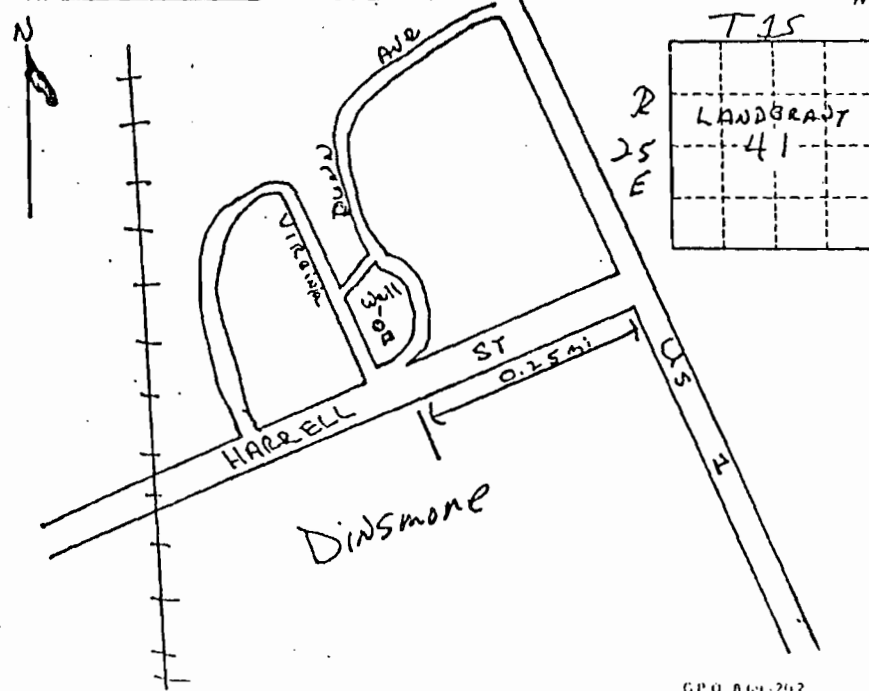
Depth to consolidated rock: 0 ft. Source of data:

Depth to basement: 0 ft. Source of data:

Surface material: None Infiltration characteristics:

Coefficient Trans: 0 apd/ft. Coefficient Storage: 0

Coefficient Perm: 0 apd/ft. <sup>2</sup> Spec. cap: 0 gpm/ft. Number of geologic cards: 0



Well No. 302559N0814555.1

Well No. 302559N0814555.1



WPD Exp. (CV)  
April 1968

5132

Well No. 302447N0813626.1

WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR GEOLOGICAL SURVEY WATER RESOURCES DIVISION

MASTER CARD M.H.

Eastport, Fla.

Record by G.W.L. Source of data Well Log Date 8-7-69 No. 7.5 min. Pump.

State Florida County Duval Sequential number 136

Latitude: 30 24 47 N Longitude: 081 36 26 W

Section 2 Township 1 S Range 28 E Sec 47 Land Grant Tallahassee

Local well number: D-68 Other number: D-68 W-896

Local use: 896 01 S 28 E 47 Trans Fla Pipeline Co.

Owner or name: TRANS-FLA PIPELINE JACKSONVILLE, FLA

Ownership: County, Fed Gov't, City, Corp or Co, Private, State Agency, Water Dist Corp.

Use of Air cond, Heating, Com, Dehumid, Power, Fire, Dom, Irr, Ind, P S, Rec, Water

Use of Stock, Inatit, Unwood, Reprasure, Recharge, Diesel-P S, Diesel-other, Other Ind.

Use of Wells: Anode, Drain, Solvent, Heat Res, Oils, Oil-gas, Recharge, Test, Unwood, Waste, Destroyed.

DATA AVAILABLE: Well data, Freq. W/L meas., NONE, Field aquifer char.

Hyd. lab. data:

Qual. water data: type:

Freq. sampling: Pumpage inventory: no. period:

Aperture cards:

Log data: Geologist Log (EGS Files) W-896

WELL-DESCRIPTION CARD

NAME AS ON MASTER CARD Depth well: 810 ft 810 ft

Depth casing (first part): Casing type: Diam. in

Finish: porous, gravel, concrete, etc.

Method: air, hand, cable, etc.

Date Drilled: 1943 9.4.3

Driller: Grey Well & Pump Co., Jacksonville, Fla.

Use: air, bucket, cont., etc.

Power: diesel, elec, gas, gasoline, hand, gas, wind, etc.

Descript. NP: 15' 15' Accuracy: Topo Map

Alt. 150: 15' 15' Accuracy: Topo Map

Water Level: ft above NP, ft below L.S.D.

Date: Yield: Method: Determined

Drawdown: ft Accuracy: Pumping period

QUALITY OF WATER DATA: Iron, Sulfate, Chloride, Hard, etc.

Sp. Conduct: 2 x 10<sup>6</sup> Temp. Date analyzed

Voids, color, etc.

Well No. 302447N0813626.1

Latitude-longitude 30 24 47 N 081 36 26 W

HYDROGEOLOGIC CARD

NAME AS ON MASTER CARD Physiographic Province: Coastal Plain Section: Floridan

Section C Regional Section: St. Johns Riv. Subsection: Below Oklawaha

Type of well: depression, stream channel, dunes, flat, hilltop, sink, swamp

offshore, pediment, hillside, terrace, undulating, valley flat Flat

MAJOR AQUIFER: Tertiary, Eocene Floridan

Lithology: Limestone Origin: Marine

Length of well open to: Depth to top of:

Lithology: Origin:

Length of well open to: Depth to top of:

Surface material: Sand infiltration characteristics good

Coefficient of Trans: Coefficient of Storage:

Coefficient of Trans: Coefficient of Storage:

Symbol of geologic cards:

Depth to consolidated rock: Source of data:

Depth to basement: Source of data:

Surface material: Sand infiltration characteristics good

Coefficient of Trans: Coefficient of Storage:

Coefficient of Trans: Coefficient of Storage:

Symbol of geologic cards:

Symbol of geologic cards:

Symbol of geologic cards:

Symbol of geologic cards:

Symbol of geologic cards:

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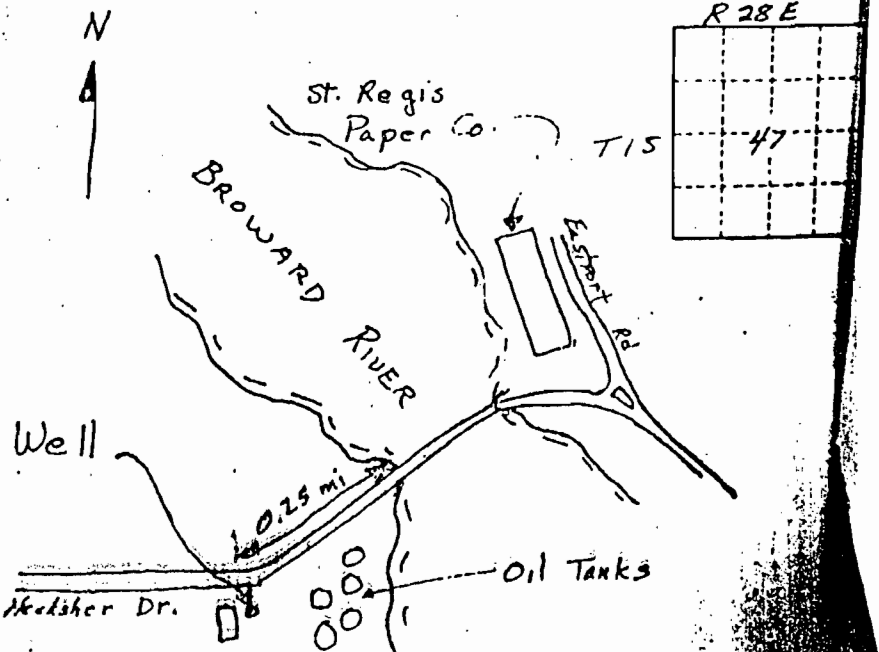
Symbol of geologic cards:

Symbol of geologic cards:

Symbol of geologic cards:

Symbol of geologic cards:

Symbol of geologic cards:



302447N0813626.1



U.S. Dept. of Interior  
April 1966

5282

Well No. 302140108193501

Well No. 3021401081935

WELL SCHEDULE

U. S. DEPT. OF INTERIOR GEOLOGICAL SURVEY WATER SOURCES DIVISION

MASTER CARD

Source of info: Field Log Date: 4-17-41 No. 7.5 Squad

State: Florida County: Duval Township: Tiwa

Latitude: 30 21 40 W Longitude: 081 43 55 E Sequential number: 1

Well name: D 215 Other numbers: D 215

Owner or name: Biltmore Estates Address: Fla. Fla.

Ownership: Private

Use of well: Stock, instlt, unassd, repressure, recharge, desal-P & B, desal-other, Other

DATA AVAILABLE: Well data  Ereq. M/L man: None Field aquifer char.

WELL-DESCRIPTION CARD

Depth well: \_\_\_\_\_ ft. Head: \_\_\_\_\_ ft. accuracy \_\_\_\_\_

Depth cased: \_\_\_\_\_ ft. Casing type: \_\_\_\_\_ Diam. 3 in. 3

Finish: rotary gravel w. hole open part. screen ad. pl. shored stilt other

Method: air rotary auger hand percussion rotary other

Date Drilled: \_\_\_\_\_ Pump intake setting: \_\_\_\_\_

Driller: \_\_\_\_\_ name \_\_\_\_\_ address \_\_\_\_\_ Deep \_\_\_\_\_ Shallow \_\_\_\_\_

Power: elec. gas hand wind other none LP JP other

Descrpt. MP \_\_\_\_\_ ft. below LSD. Alt. MP \_\_\_\_\_

Alt. LSD: \_\_\_\_\_ Accuracy: \_\_\_\_\_

Water level: \_\_\_\_\_ ft. above MP; \_\_\_\_\_ ft. below LSD. Accuracy: \_\_\_\_\_

Yield: \_\_\_\_\_ gpm. Method determined: \_\_\_\_\_

Drinking water quality: \_\_\_\_\_

Sp. Conduct: \_\_\_\_\_ Sulfate: \_\_\_\_\_ Chloride: \_\_\_\_\_ Hard: \_\_\_\_\_

Temp.: \_\_\_\_\_ Depth sampled: \_\_\_\_\_

332

HYDROGEOLOGIC CARD

PHYSIOGRAPHIC PROVINCE: Coastal Plain Section: Florida

Section: 03 08 15 Substation: \_\_\_\_\_

Top of well site: flat

MAJOR AQUIFER: Tertiary Evaporite T.E. Florida 21

Lithology: Limestone 4 Origin: Marine 7 Aquifer thickness: \_\_\_\_\_

Length of well open to: \_\_\_\_\_ ft. Depth to top of: \_\_\_\_\_ ft.

LITHOLOGY: \_\_\_\_\_ Origin: \_\_\_\_\_ Aquifer thickness: \_\_\_\_\_

Length of well open to: \_\_\_\_\_ ft. Depth to top of: \_\_\_\_\_ ft.

Intervals screened: \_\_\_\_\_

Depth to consolidated rock: \_\_\_\_\_ ft. Surface of base: \_\_\_\_\_

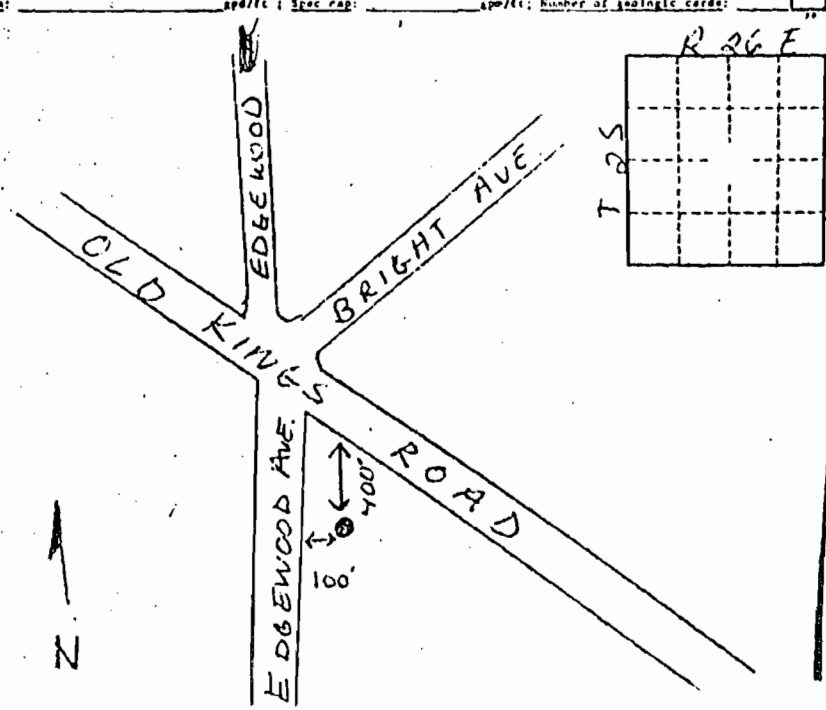
Depth to basement: \_\_\_\_\_ ft. Source of base: \_\_\_\_\_

Surficial material: Sand 5 Interstratified characteristics: Wood 2

Coefficient of trans: \_\_\_\_\_ Spd/ft. \_\_\_\_\_ Coefficient of storage: \_\_\_\_\_

Coefficient of perm: \_\_\_\_\_ Spd/ft. \_\_\_\_\_ Spec. cap: \_\_\_\_\_ Spd/ft. Number of geologic cards: \_\_\_\_\_

Well No. 302140108193501





W.D. Rep. (OH)  
April 1964

5133

Well No. 302607-40813616.1

WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR

GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

MASTER CARD M.H.

Eastport, Fla.

Record by G.W.H. Source of data Well Log Date 8-7-69 No. 7.5 min Quad

State Florida County Duval Locality 1.1A

Latitude: 30 26 07.2 N Longitude: 081 36 16.6 Sequential number: 1

Local well number: D-69 Other number: D-69 W-3974

Local map: W 3974 O 1 S 27 E 46 Owns of name: St. Regis Paper Co.

Owner or name: ST. REGIS PAPER Address: Jacksonville, Fla.

Ownership: County, Fed Gov't, City, Corp or Co, Private, State Agency, Water Dist Corp N

Use of well: Air cond, Irrigation, Comm, Domestic, Power, Fire, Deep, Irr, Ind, Log, P S, Rec, Stock, Insects, Unused, Repressure, Recharge, Desal-P S, Dural-other, Other Ind W

Use of well: Anoda, Drain, Salinac, Heat Ex, Obs, Oil-gas, Recharge, Treat, Unused, Withdraw Waste, Destroyed W

DATA AVAILABLE: Well data, Feas. W/L meas., Original, Field aquifer char.

Hyd. lab. data: 5/31/56

Qual. water data: Type

Freq. sampling: Pumpage inventory: no. period

Aperture cards

Log data: Geologist Log (CFGS Files) W-3974 G

WELL-DESCRIPTION CARD

DEPTH AS ON MASTER CARD Depth well: 1373 ft 1:3:7:3 Head: Geologists log 4

Depth casing: 612 ft 6:1:2 Casing type: steel Diam. 20 in 2:2

Filter: Precast gravel w. gravel, brick, open concrete, (pref.), (across), galley, end, part., screen, sl. pt., shroud, (5) (6) X

Method: Air bored, cable, dug, (hyd) drilled, air, electric, percussion, driven, drive, percussive, rotary, other H

Date Drilled: 5/31/56 9:5:6 Pump intake setting

Driller: Layne-Atlantic Co. Savannah Ga.

Line: (A) (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z) Deep Shallow

Power: (Type): diesel, elec, gas, gasoline, hand, jet, wind, etc. etc. Type of motor: LP, HP, etc.

Descr. MP: above ft below LAD, All. MP

All. LAD: Accuracy: (layers)

Water Level: 28.8 ft above MP; 3:2:9 Accuracy: Pipe Log H

Date: 5:5:6 Field: Accuracy: Pumping method: Determined

Standards: Accuracy: Pumping method: Determined

QUALITY OF WATER DATA: Iron, Sulfate, Chloride, Hard

Dr. Conduct: e x 10<sup>3</sup> Accuracy: Dr. Conduct: Accuracy

BEST AVAILABLE COPY

Well No. 302607-40813616.1

Latitude-Longitude 30 26 07 081 36 16

HYDROGEOLOGIC CARD

NAME AS ON MASTER CARD Physiographic Province: Coastal Plain Section: Floridan

Section C Subsection: ST Johns Riv 0:9:5 Subbasin: Palau Oklaw 3

Types of well sites: (D) (C) (B) (A) (N) (S) (L) depression, stream channel, dunes (flat) hilltop, etc., swamp.

MAJOR ACQUIFER: Tertiary, Eocene T.E. Floridan L.F. Lithology: Limestone L Origin: Marine 6

Length of well open to: 761 ft 7:6:1 Depth to top of: 578 ft 5:7:8

Lithology: Length of well open to: Depth to top of:

Interstratified: Depth to consolidated rock: Source of data:

Depth to basement: Source of data:

Subsidence material: Sand S Infiltration characteristics: good 2

Coefficients: Trans: Storage: Coefficients: Storage:

Number of sounding cards:

Number of sounding cards:

Number of sounding cards:

Number of sounding cards:

Number of sounding cards:

Number of sounding cards:

Number of sounding cards:

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Number of sounding cards:

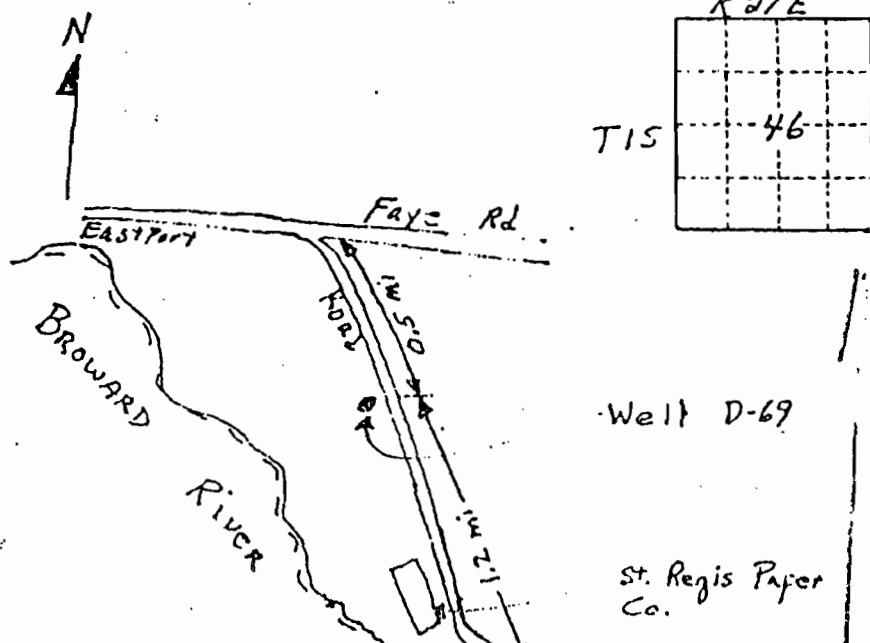
Number of sounding cards:

Number of sounding cards:

Number of sounding cards:

Number of sounding cards:

Number of sounding cards:



Well D-69

St. Regis Paper Co.

MASTER CARD

Record by D. BLICKALL Source of data DER LOG Date JUL 19 1975 Map EASTPORT  
 State FLORIDA County (or town) DUVAL Sectional number 116  
 Latitude: 30° 36' 08" N Longitude: 81° 35' 49" W Sequential number: 3  
 Locality: 1 1/2 mi S 77° Sec 46 LAND GRANT TALLA  
 Local well numbers: 33 Other numbers: D 262  
 Local use: 1 1/2 2 7 E Owner of name: ST. REGIS PAPER CO.  
 Owner or name: ST. REGIS PAPER CO. Address: EASTPORT RD. JAX.  
 Ownership: (C) County, Fed Gov't, City (M) Corp or Co, (P) Private, State Agency, Water Dist. N  
 Use of water: (A) Air cond, Bottling, Com, Dewater, Power, Fire, P, Irr, Ind, P S, Rec, (N) (P) (R)  
 (S) (T) (U) (V) (W) (X) (Y) (Z) Stock, Irr, Unused, Recharge, Desal-P S, Desal-other, Other N  
 Use of well: (A) (D) (E) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z)  
 Well: Anode, Drain, C, S, Heat Res, Obs, Oil-gas, Recharge, Test, Unused, Withdraw, Waste, Destroyed T  
 DATA AVAILABLE: Well data 6 Freq. W/L meas.: ORIGINAL 7-11-75 Field aquifer char. 1  
 Hyd. lab. data: 2  
 Qual. water data: Type: CHL  
 Freq. sampling: 0 Pumpage inventory: yes period: 1  
 Aperture cards: yes  
 Log data: DER

WELL-DESCRIPTION CARD

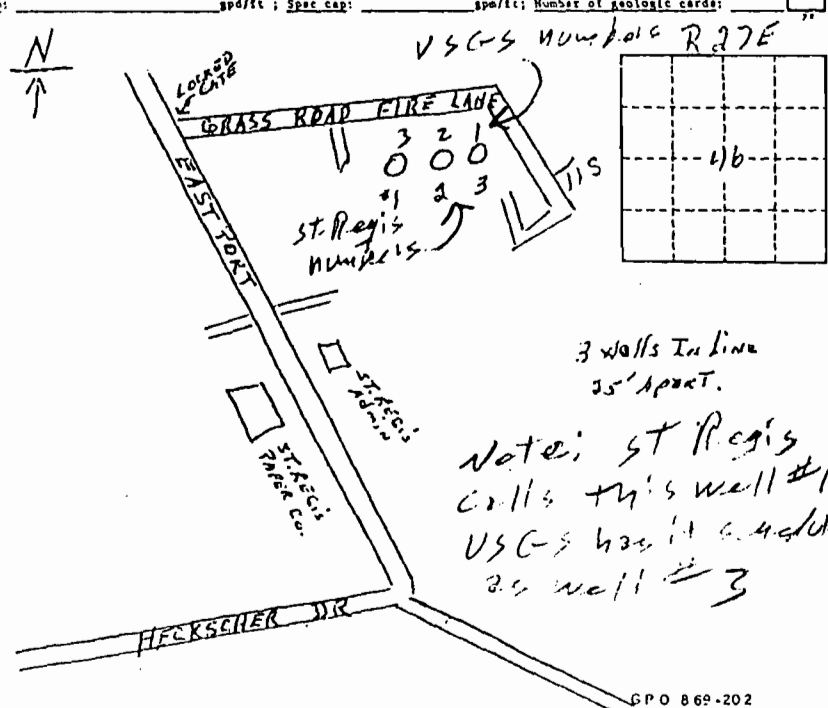
Same as on Master Card Depth well: 6.54 ft. 6.54 (feet) accuracy 0  
 Depth casing: 5.74 ft. 5.74 (feet) accuracy 4  
 Casing type: STEEL Dis. 4 in. 4  
 Finish: (C) cast iron, (F) galv. steel, (G) galv. pipe, (H) galv. pipe, (I) galv. pipe, (J) galv. pipe, (K) galv. pipe, (L) galv. pipe, (M) galv. pipe, (N) galv. pipe, (O) galv. pipe, (P) galv. pipe, (Q) galv. pipe, (R) galv. pipe, (S) galv. pipe, (T) galv. pipe, (U) galv. pipe, (V) galv. pipe, (W) galv. pipe, (X) galv. pipe, (Y) galv. pipe, (Z) galv. pipe  
 Method: (A) auger, (B) auger, (C) auger, (D) auger, (E) auger, (F) auger, (G) auger, (H) auger, (I) auger, (J) auger, (K) auger, (L) auger, (M) auger, (N) auger, (O) auger, (P) auger, (Q) auger, (R) auger, (S) auger, (T) auger, (U) auger, (V) auger, (W) auger, (X) auger, (Y) auger, (Z) auger  
 Date drilled: 7-9-75 Pump intake setting: 2.25 ft.  
 Driller: ST. REGIS PAPER CO. address ST. REGIS PAPER CO. Deep 0 Shallow 0  
 Power: (A) elec, (B) elec, (C) elec, (D) elec, (E) elec, (F) elec, (G) elec, (H) elec, (I) elec, (J) elec, (K) elec, (L) elec, (M) elec, (N) elec, (O) elec, (P) elec, (Q) elec, (R) elec, (S) elec, (T) elec, (U) elec, (V) elec, (W) elec, (X) elec, (Y) elec, (Z) elec  
 Receipt: TOP OF WELL FLANGE 1 ft above LSD, Alt. NP 11.4  
 Alt. LSD: 1.04 Accuracy: 1.0 Accuracy: TOPO MAP  
 Water level: 20.4 ft above NP, FT below LSD 3.7 Accuracy: GAGE  
 Date: 7-9-75 Yield: 2.25 gpm Method: determined  
 Drawdown: 2.25 ft Accuracy: 2.25 gpm Pumping method: 2.25 hrs  
 Quality of water: Iron 0 Sulfate 0 Chloride 55 Hard. 0  
 Sp. Conduct: 2.25 x 10<sup>6</sup> Temp. 78 Date sampled: 7-9-75 7.75  
 Tests, color, etc.

4. ARTISIAN Flow 236 GPM

HYDROGEOLOGIC CARD

Same as on Master Card Physiographic Province: COASTAL PLAIN Section: FLORIDIAN  
 SECTION C Drainage Basin: ST. JOHN'S R. Subbasin: BELOW OKL  
 Top of well site: (D) depression, stream channel, dune, (E) flat, (F) hilltop, sink, swamp, (G) offshore, pediment, hillsides, terraces, undulating, valley flat FLAT "E"  
 MAJOR AQUIFER: system series aquifer, formation, group  
 Lithology: Length of well open to: Depth to top of:  
 MINOR AQUIFER: system series aquifer, formation, group  
 Lithology: Length of well open to: Depth to top of:  
 Intervals screened:  
 Depth to consolidated rock: Source of data:  
 Depth to basement: Source of data:  
 Surficial material: Infiltration characteristics:  
 Coefficient of permeability: spd/ft. Coefficient of storage:  
 Coefficient of anisotropy: spd/ft. Spec. cap. spd/ft. Number of geologic cards:

Well No. 30360810813549B



12902.01/70C2.WR1/MH/SB/080888

(Continued)

SPOIL PILES, LANDFILL GROUND WATER SAMPLES AND SURFACE WATER SAMPLES

AES CEDAR BAY

PARAMETERS	UNITS	MW-1	MW-2	MW-3	MW-4	SW-1	SW-2
<b>PRIORITY POLLUTANT METALS</b>							
Antimony	ug/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Beryllium	ug/L	<0.007	<0.005	<0.005	<0.005	<0.005	<0.005
Cadmium	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Copper	ug/L	<0.07	<0.01	<0.01	0.04	<0.01	<0.01
Lead	ug/L	0.12	<0.02	<0.02	0.05	<0.02	<0.02
Mercury	ug/L	0.78	<0.50	<0.50	1.22	7.73	<0.50
Nickel	ug/L	0.09	0.02	<0.02	0.08	<0.02	<0.02
Selenium	ug/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Silver	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Thallium	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

FIGURE 3  
SAMPLING LOCATIONS  
SEMINOLE KRAFT MILL  
JACKSONVILLE, FLORIDA

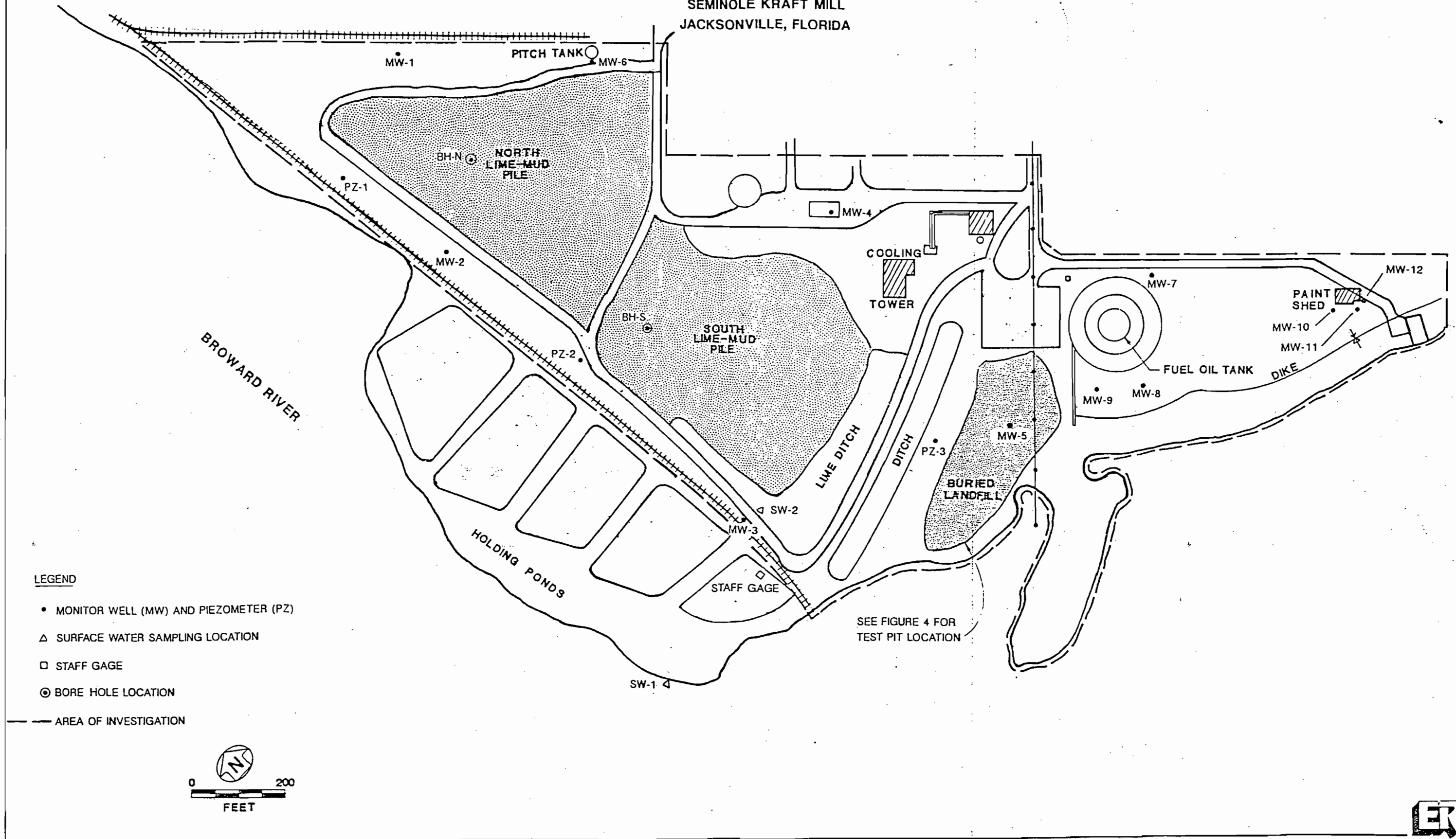




FIGURE 6  
 WATER TABLE MAP 7-9-88  
 SEMINOLE KRAFT MILL  
 JACKSONVILLE, FLORIDA

