

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2500 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

December 11, 2000

Stephen Smallwood, P.E.
Air Quality Services
1640 Eagles Landing, Unit 103
Tallahassee, Florida 32308

Re: Coastal Lumber Company
Rule Applicability Determinations, Modified Layup and Hot Presses Operation

Dear Mr. Smallwood:

We have reviewed your letter dated November 16, 2000 regarding the changes planned by Coastal Lumber to its plywood layup and hot presses operation at the Havana, Florida plant. You requested a determination from this office regarding the applicability of PSD and case-by-case MACT to the facility because of this project. As described in your letter, the company plans to replace the existing plywood layup line with a newer layup line from another plant and add a third hot press. The facility will request an annual production limit of 227,760 MSF 3/8-inch plywood. This is compared to past actual annual production of 208,972 MSF 3/8-inch plywood. The change will not result in an increase in the potential amount of plywood produced per day or per year at the plant, and will not debottleneck other existing emissions units. The increases in emissions from the physical changes to the layup and hot presses operations are estimated to be far less than the PSD significance criteria. Because a hot press by itself cannot produce a final or intermediate product, the addition of the third press is not considered "construction" for purposes of MACT. The modification is not "reconstruction" based on the project cost estimates provided.

As you noted, a construction permit is required for the project, and the proposed annual production limit must be included as a practically enforceable condition in the construction permit. Given the information presented, the project will not be subject to PSD. The project is also not subject to a case-by-case MACT determination because it does not meet the requirements for construction or reconstruction under the MACT requirements.

Please contact me at 850-921-9519 if you have any questions about the above.

Sincerely,

Joseph Kahn, P.E.
New Source Review Section

/jk

cc: Gregg Worley, EPA Region 4
Sandra Veazey, DEP NWD

"More Protection, Less Process"

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November 16, 2000

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NOV 17 2000

BUREAU OF AIR REGULATION

Stephen Smallwood, P.E.

Air Quality Services

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Mr. Clair H. Fancy, PE
Chief
Bureau of Air Regulation
Division of Air Resources Management
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400

1 850 488-1344

**Subject: Air Permitting Requirements for Modified Layup & Hot Presses Operation
Coastal Lumber Company, Havana, FL**

Agency Rule Applicability Determinations Requested

Dear Mr. Fancy:

On November 8, Tom Rockwood, PE, General Manager, Coastal Lumber Company, Florida Division, and I met with you, Al Linero, Cindy Phillips, and Joe Kahn at your office in Tallahassee to discuss the changes that Coastal Lumber Company plans to make to the plywood Layup and hot presses operation at the company's Havana, Florida plant.

The company plans to replace the existing plywood Layup line with a newer Layup line from another plant, and to add a third hot press. This will allow the plywood sheets to be produced more efficiently and in less time, but the change will not result in an increase in the potential amount of plywood produced per day or per year at the Havana plant.

The project will reduce the plywood layup - hot presses emissions by 5%, because the amount of glue required for the panel production will be reduced, on average, from 46 to 44 lbs/MSF - single glue line.

Based on our review of the potentially applicable rules, and our discussion with you on the 8th, Coastal Lumber believes that an air construction permit from the FDEP NW District Office is needed prior to commencing construction on the proposed project, but the project is not subject to PSD review or a case-by-case MACT determination. However, to preclude any misunderstanding, the company requests that you provide Tom Rockwood with a written applicability determination with respect to the PSD rules and the case-by-case MACT rules.

The following part of this letter and the attachments describe our understanding of the potentially applicable rules and provides factual information about the proposed project needed to determine which rule provisions apply to this particular project.

- 1) State Air Construction Permit. The addition of air pollutant emitting equipment to a facility requires a state air construction permit, unless the equipment is exempt from permitting. If a federally enforceable permit condition is needed to limit the hours of operation or types of materials used to keep the net increase in any EPA regulated air pollutant emissions from the layup - hot press operation below the PSD significant increase level (to avoid PSD applicability), such condition would need to be included in a state air construction permit

- 2) PSD Applicability. If the net increase in the annual emissions from the layup - hot presses operation (for any PSD regulated emissions) caused by the proposed changes to the layup - hot presses operation is greater than the significant increase amount ($PM_{10} = 15$ tpy, $PM = 25$ tpy, SO_2 , NO_x , $VOC = 40$ tpy, $CO = 100$ tpy), the proposed project is subject to PSD review. The net increase is calculated on the basis of the current actual emissions to the future potential (maximum allowable) for the layup - hot presses operation. The current actual is based on the average of the two highest annual production rates during the past five-year period.

If the proposed changes would result in a significant increase in emissions from the plywood layup - hot presses operation, the emission limit for each of those pollutants emitted from the layup - hot presses operation, for which a significant increase would occur, would be set by a Best Available Control Technology (BACT) determination, proposed by the applicant and determined by the FDEP.

If there would be a significant increase in emissions of particulate matter, sulfur dioxide, or nitrogen dioxide, from the layup - hot presses operation, the ambient impact of each such pollutant for which there would be a significant increase, would be modeled by the applicant to determine if the emissions from the unit and from the facility as a whole would violate the applicable ambient air quality standards or PSD increments.

Whether any emissions increases at other emission units at the plant need to be considered in determining if any PSD provisions apply, depends on whether there are any creditable contemporaneous emissions increases or decreases resulting from previous changes to the plant and whether the proposed changes to the plywood layup - hot presses operation will result in the removal of a bottleneck at the plant that would result in the increased operation of other emission units at the plant.

An increase in the hours or rate of operation of a source, so long as the increase would not be prohibited by any federally-enforceable permit condition after January 6, 1975, is not in itself a change that triggers a PSD review.

In the 1990 EPA NSR Workshop Manual example in Section III.B.6, Netting Example, a new emissions unit G, which by itself has a significant increase in emissions, is added to an existing major facility. Existing emissions units A & B will not be physically or operationally changed. However, emissions unit G will remove a bottleneck at the plant that will result in the increased operation of emissions units A &

B, which will result in an increase in the actual emissions from those two units. Therefore the increase in emissions from emissions units A & B must be included as part of the increase in facility-wide emissions caused by the addition of emissions unit G.

The result of the facility-wide net emissions increase calculation in the example is that the addition of emissions unit G, taking into account all facility-wide contemporaneous creditable increases and decreases, causes a significant plant-wide emissions increase, and therefore is subject to PSD review.

As described above, emissions unit G is subject to BACT, and the facility-wide significant net emissions increase must be modeled to show compliance with ambient air quality standards and PSD increments. BACT does not apply to emissions units A & B. BACT only applies to emissions units that are physically or operationally modified.

With respect to Unit E in the example, the guidance says that emission changes that are not associated with physical/operational changes are not considered. The operation of unit E is not projected to be affected by the proposed modification. It has not undergone any physical or operational change during the contemporaneous period which would otherwise trigger a creditable emissions change at the unit. Consequently, unit E's emissions are not considered for netting purposes by the reviewing agency.

In Coastal Lumber's case, the proposed changes to the plywood layup - hot presses operation would not "debottleneck" any of the other emission units at the plant. The proposed changes to the layup - hot presses operation will not cause more veneer to be dried, or more boiler fuel to be burned. It will not result in any increase in the daily or annual amount of plywood panels produced. It will allow the same amount of panels to be produced each day in less time with a 5% reduction in daily VOC and HAPs emissions, because on average 5% less glue will be used in the production of each plywood panel.

The existing Coastal Lumber plant is a major source for PSD purposes, but there are no contemporaneous creditable increases or decreases in plant emissions with respect to the proposed project.

The emissions increases that will occur in the future will solely be the result of an increase in the demand for plywood panels. However, that increase will not exceed the permitted annual production limit of 26 MSF per hour for 8760 hour per year.

Therefore, none of the project emissions increases for the other emission units need to be considered in determining PSD applicability. If there would not be a significant net emissions increase of a PSD regulated air pollutant from the modified plywood layup - hot presses operation, the PSD rules would not apply to this project.

- 3) 112(g) Case-by-Case MACT Determination Applicability. Under the U.S. EPA 112(g) rules, a case-by-case MACT (maximum achievable control technology) determination (HAPs emissions limit) is required, if a new "process or production unit" is built on a "greenfield site," "added to a facility," or "reconstructed," and the new or reconstructed "process or production unit" would be major (have potential emissions of an individual HAP of more than 10 ton/year, or total HAPs of more than 25 ton/year.

"Reconstruct a major source" means "the replacement of components at an existing process or production unit that in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAPs, whenever:

- a) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit; and
- b) It is technically and economically feasible for the reconstructed major source to meet the applicable maximum achievable control technology emission limitation for new sources established under this part.

"Process or production unit" means " any collection of structures and/or equipment, that processes, assembles, applies, or otherwise uses material inputs to produce or store an intermediate or final product. A single facility may contain more than one process or production unit."

State Air Construction Permit

The largest individual potential HAP emission (methanol) from an individual hot press is greater than the FDEP air rule's generic individual HAP exemption criteria, and part of the proposed plan is to limit the maximum annual plant throughput to the equivalent of 26 thousand square foot of 3/8 inch plywood per hour for 8760 hours per year, because the combined physical maximum annual capacity of the three softwood veneer dryers is not precisely known. Therefore, a state air construction permit will be needed before commencing construction on the modification.

PSD Applicability

Most of the emissions (VOC, HAPs, PM) from the layup - hot presses production unit are emitted from the hot presses, which use steam heat and pressure to force the glue into the veneer sheets and set the adhesive. Although the emissions are fugitive (not emitted through a stack or duct), we have calculated the increase for the proposed project to show that even if they were point source emissions, their increases are significantly less than the PSD significant increase levels.

Layup -Hot Presses Emissions Increases

The HAPs emissions from the plywood presses are not a consideration in determining PSD applicability, but they are a factor in determining case-by-case MACT applicability.

The maximum two-year average production rate during the past five years is 208,972 MSF 3/8 inch plywood sheets, based on the average of the two annual periods from Oct 97 through Sept 98 and Oct 99 through Sep 2000. That is equivalent to 23.855 MSF 3/8 inch plywood sheets per hour for 8760 hours per year. [See Enclosure #2 - Plywood Presses in Appendix A.]

The U.S. EPA VOC emission factor for PH resin hot presses is 0.31 lbs / MSF 3/8 inch plywood sheets. [See Table 2 - Air Emission Factors, Coastal Lumber Company in Appendix B.] Based on that emission factor, the current annual "actual emissions" of VOC from the two existing hot press combined is 32.4 tons/yr.

At the proposed maximum production rate of 26.0 MSF 3/8 inch plywood sheets per hour, the potential future maximum annual VOC emission rate would be 35.3 tons/yr. The net increase in VOC emissions from the addition of the third press, with the total annual production rate limited to 26.0 MSF 3/8 inch plywood sheets per hour (8760 hour/yr), would be 2.9 tons per year compared to 40 tons per year allowed.

For PM₁₀, the U.S. EPA emission factor for PH resin hot presses is 0.12 lbs / MSF 3/8 inch plywood sheets. [See Table 2 - Air Emission Factors, Coastal Lumber Company in Appendix B.] Based on that emission factor, the current annual "actual emissions" of PM₁₀ from the two existing hot press combined is 12.5 tons/yr. The future potential at 26.0 MSF 3/8 inch plywood sheets per hour is 13.7 tons/yr, and the net increase would be 1.2 tons/yr compared to an allowable of 15 tons / yr.

Therefore, if the maximum annual production rate is limited to 26.0 MSF 3/8 inch plywood sheets per hour (8760 hour/yr), and even if the VOC and PM₁₀ emissions were point source emissions, the proposed project would not be subject to PSD review with respect to the layup - hot presses operation itself.

Collateral Emissions Increases

In addition to the layup - hot presses operation, air pollutant emissions occur from three other groups of sources at the facility: the veneer dryers, the plant's steam boilers, and the wood dust pneumatic conveying system. The emissions of each of these groups of equipment is directly related to the amount of veneer that passes through the three softwood veneer dryers. The current plywood production capacity is approximately 92% of the proposed maximum permitted rate of 26.0 MSF / hour for 8760 hours per year. No hardwood or particleboard is processed at the Havana plant.

As described under the discussion on PSD Rule Applicability beginning on page 2, none of these potential increases in emissions are contemporaneous creditable increases or increases resulting from debottlenecking. Therefore, none of them needs to be considered in determining if PSD applies to this project.

The plant-wide emissions were detailed for the U.S. EPA in a December 2, 1998 letter report entitled "Re: Notice of Violation No. CAA-4-1998-813 issued September 15, 1998 to Coastal Lumber Company: ERM Technical Analysis." Appendix B to this letter includes two tables from that report. Table 2 provides emission factor information.

All of the emission factors are still current, except for the carbon dioxide emission factor for the No. 3 Plywood Boiler. The stack emissions test conducted during the early part of 1999 showed that the actual CO emission factor for that boiler was about one fourth of the AP-42 factor listed in Table 2.

The second table in Appendix B is Table 6 from the December 2, 1998 letter report. It details the potential emissions for the plant as it was after the addition of the third veneer dryer in 1993. There have been no changes in the potential emissions from the plant since that time.

The following three paragraphs summarize the potential increases in plant-wide point source emissions resulting from the allowable annual increase the plywood production rate that will be allowed as a result of the annual production limit that will be included in the construction permit.

The point sources for PM₁₀ are the three plywood boilers, the three veneer dryers, and the wood dust pneumatic conveying system. The current annual plant-wide point source potential emissions for PM₁₀ is 175 tons per year. The potential plant-wide increase in PM₁₀ emissions resulting from the allowable annual increase in the plywood production rate is 14.5 tons per year (9.5 tpy for the three boilers, 3.3 tpy for the veneer dryers, and 1.7 tpy for the wood dust pneumatic conveying system).

The point sources for SO₂, NO_x, and CO are the #3 plywood boiler (stoker) and the two fuel cell plywood boilers (#4 & #5). The annual plant-wide point source potential emissions for SO₂, NO_x, and CO respectively are 4, 55, & 297 tons per year. The potential plant-wide increase in these emissions resulting from the allowable annual increase the plywood production rate for each is 0.4, 5, & 26 tons per year, respectively.

The point sources for VOC are the three plywood boilers and the three veneer dryers. The current annual plant-wide point source potential emissions for VOC is 292 tons per year. The potential plant-wide increase in VOC emissions resulting from the allowable annual increase the plywood production rate is 26 tons per year.

Mr. Clair H. Fancy, PE
Coastal Lumber Hot Presses Operation
November 16, 2000

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112(g) Case-by-case MACT Determination Applicability

The EPA has not officially updated AP-42 with HAPs emissions factors for plywood plants. Midwest Research Institute (MRI) has provided the EPA with an analysis of the available HAPs data for plywood plants. MRI has submitted their report to the EPA and expects EPA to include the recommended MRI emission factor in AP-42 within the next six months. I obtained this information by speaking with Katie Hanks of MRI (919) 851-8181 x 5175 (who faxed me the correct emission factors) and with Mary Tom Kissel (919) 541-4516 of EPA.

The appropriate emission factors for the Coastal Lumber plant are labeled in **Attachment C** as "Softwood Plywood, Press, PF resin." The HAP with the greatest emission rate is methanol @ 0.1400 lb/MSF3/8 plywood. The other HAPs identified are: acetaldehyde @ 0.0042 lb/MSF3/8 plywood, formaldehyde @ 0.0019 lb/MSF3/8 plywood, methyl ethyl ketone @ 0.0009 lb/MSF3/8 plywood, methyl isobutyl ketone @ 0.0007 lb/MSF3/8 plywood, phenol @ 0.0014 lb/MSF3/8 plywood. The EF for total HAPS is therefore 0.1491 lb/MSF3/8 plywood.

The "process or production unit" is a major source of HAPs if the potential emissions of the largest individual HAP is greater than 10 ton /yr or the potential emissions of all HAPs emitted is greater than 25tons /yr. Based on the MRI emission factors, the potential emissions of methanol for the layup - hot presses operation with a production limit of 26 MSF3/8 plywood per hour is 15.94 tons per year. Total HAPs would be 16.98 tons per year. That classifies the Coastal Lumber layup - hot presses operation as a major source of HAPs.

Based on our discussion with you on the 8th, the layup - hot presses operation is the "process or production line" as defined in EPA's 112(g) rules. A Process Description of the Havana Plywood Plant, which you requested in our meeting is **Attachment D**. Coastal Lumber's comparative cost assessment is **Attachment E**. A plant layout drawing is **Attachment F**.

Since the fixed capital cost of the new components will not exceeds 50 percent of the fixed capital cost that would be required to construct a comparable plywood layup - hot presses operation, the proposed modification would not be a "reconstruction," as defined in the EPA's 112(g) rules.

INTEROFFICE MEMORANDUM

Sensitivity: COMPANY CONFIDENTIAL

Date: 20-Nov-2000 09:42am

From: Cindy Phillips TAL
PHILLIPS_C

Dept: Air Resources Management

Tel No: 850/921-9534

To: Joseph Kahn TAL

(KAHN_J)

Subject: Coastal Lumber

Joe, I agree with Steve Smallwood's 112(g) MACT Determination applicability summary on page 8 of his submittal.

-Cindy

Summary

112(g) MACT Determination

Based on the currently available information, the Coastal Lumber **layup - hot press operation**, is a "process or production unit." as defined in EPA's 112(g) rules. The potential emissions of the largest individual HAP from the presses (methanol) is 15.95 tons/yr based on the MRI emissions factor. That makes the **layup - hot press operation** a major source of HAPs. A major source of HAPs is subject to a case-by-case MACT determination if the "process or production unit." is a new "process or production unit," or if an existing "process or production unit" is "reconstructed." An existing "process or production unit" is reconstructed if the cost of the changes and additions to the existing "process or production unit" would cost more than 50% of the cost of a comparable replacement unit. The modification of an existing "process or production unit" does not require a case-by-case MACT determination, unless the modification is a "reconstruction."

A hot press by itself cannot produce a final or intermediate product, therefore the addition of a third press is not new "construction" as defined in the 112(g) rule, but it is a modification of the existing **layup - hot press operation**. Since the **layup - hot press operation** is a major source of HAPs, the modification is subject to a case-by-case MACT determination, only if it is a "reconstruction." Based on Coastal Lumber's comparative cost assessment, the modification would not be a "reconstruction." Therefore, the project is not subject to a 111(g) case-by-case MACT determination.

PSD Applicability.

The net increase in PM₁₀ and VOC emissions from the plywood layup - hot presses emissions unit (which are fugitive emissions), resulting from the proposed project would not increase by a significant amount at the proposed production limit of 26 MSF3/8 plywood per hour, for 8760 hours per year. There are no contemporaneous creditable increases or increases resulting from debottlenecking. Therefore, none of the PSD rule provisions apply to this project.

State Air Construction Permit.

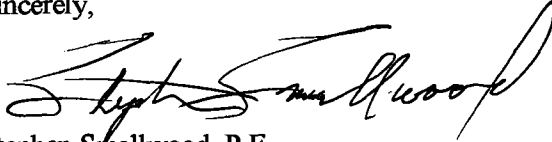
The addition of air pollutant emitting equipment to a facility requires a state air construction permit, unless the equipment is exempt from permitting. The HAPs emissions from an individual hot press are greater than the FDEP air rules generic exemption criteria. The addition of the third hot press is not exempt from state air permitting. Therefore, the project requires a state air construction permit.

Mr. Clair H. Fancy, PE
Coastal Lumber Hot Presses Operation
November 16, 2000

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Should you need additional information to complete the rule applicability determinations, please call me at 850 385-0002 in Tallahassee, and we will provide you with the needed information as soon as possible.

Sincerely,



Stephen Smallwood, P.E.
Tallahassee, FL

SS/ssm

Attachments: A - Plywood Plant Production Rates
B - Coastal Lumber Company's Emission Factors & Current Potential Emissions
C - MRI Proposed HAPs Emission Factors for PF Resin Hot Press Operations
D - Process Description of Havana Plywood Plant
E - Coastal Lumber's MACT Comparative Replacement Cost Analysis
F - Coastal Lumber Company - Havana Plant Layout Drawing

c: Thomson W. Rockwood, PE
General Manager
Coastal Lumber Company
Florida Division
P.O. Box 1128
Havana, FL 32333

1 850 539-6432 x 129

c: Andrew Allen, PE, Air Permitting Supervisor, FDEP NWD Office, Pensacola, FL

c: Paul Amundsen, Esquire, Amundsen, Moore & Torpy, Tallahassee, FL

**Attachment
A**

Plywood Plant Production Rates

ENCLOSURE #2

3. Plywood Presses

	# of wks	# of Press Loads *	Monthly Panels Prod. SF 3/8"	Annual Panels Prod. SF 3/8"
Oct-95	4		14104580	
Nov-95	5		16636875	
Dec-95	4		13328598	
Jan-96	4		14814229	
Feb-96	4		13604173	
Mar-96	5		18472429	
Apr-96	4		15850918	
May-96	5		18676798	
Jun-96	4		13417297	
Jul-96	4		10088572	
Aug-96	4		13765258	
Sep-96	5		18055507	180815234
Oct-96	4		13781535	
Nov-96	4		13939946	
Dec-96	5		17060190	
Jan-97	4		14133678	
Feb-97	4		14652620	
Mar-97	4		14336197	
Apr-97	5		18372068	
May-97	5		20271847	
Jun-97	4		16529589	
Jul-97	4		14924292	
Aug-97	4		16043746	
Sep-97	5		18920564	192966272
Oct-97	5		20598615	
Nov-97	5		19822130	
Dec-97	4		14211685	
Jan-98	4		15973352	
Feb-98	4		16038163	
Mar-98	4		15525335	
Apr-98	5		19755180	
May-98	4		15859572	
Jun-98	4		15415963	
Jul-98	5		19198171	
Aug-98	4		15465208	
Sep-98	4		19008242	206871616
Oct-98	4		15768533	
Nov-98	5		17365784	
Dec-98	4		15023674	
Jan-99	4		15880682	
Feb-99	4		15847403	
Mar-99	4		16035562	
Apr-99	5		19930629	
May-99	4		16212722	
Jun-99	4		16072946	
Jul-99	5		19604001	
Aug-99	4		16572916	
Sep-99	5		20287258	204602110
Oct-99	5	12769	19894897	
Nov-99	4	9777	15709332	
Dec-99	5	11001	17715563	
Jan-00	4	9723	15421204	
Feb-00	4	10804	16772364	
Mar-00	4	10471	17034256	
Apr-00	4	10496	16824489	
May-00	4	10744	16941328	
Jun-00	5	13458	20922064	
Jul-00	4	10033	15906871	
Aug-00	4	11109	17286583	
Sep-00	5	13023	20643439	211072390

* Note: Daily plant production reports are only maintained for current fiscal year (begins 10/99 ends 09/00).

**Attachment
B**

**Coastal Lumber Company's
Emission Factors
Current Potential Emissions**

Mr. Richard DuBose
December 1, 1998
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Table 2 lists the AP-42 and other emission factors for Coastal Lumber Company's emission units.

TABLE 2
AIR EMISSION FACTORS
COASTAL LUMBER COMPANY, HAVANA, FL

Emission Units		Max Capacity ⁽¹⁾		Emission Factors (lbs/unit)				
No	Description	Units	Amount	PM ₁₀	SO ₂	NO _x	VOC	CO
1	Sawmill Boiler # 1 (Dutch Oven)	Tons/Hr	3.3 ⁽²⁾	5.3/T	0.075/T	0.38/T	0.18/T	6.6/T
2	Sawmill Boiler # 2 (Dutch Oven)	Tons/Hr	3.3 ⁽²⁾	5.3/T	0.075/T	0.38/T	0.18/T	6.6/T
3	Planing Mill A	Tons/Hr	1.13	0.001	-	-	-	-
4	Planing Mill B	Tons/Hr	1.13	0.001	-	-	-	-
5	Plywood Boiler # 3 (Stoker)	Tons/Hr	6.7 ⁽²⁾	1.35/T	0.075/T	1.5/T	0.12/T	13.6/T
6	Green wood Chips & Screen	Tons/Hr	2.85	0.05	-	-	-	-
7 ⁽³⁾	3 Lumber Dry Kilns (Indirect Heat)	MBF/Hr	6.85	-	-	-	3.1/MBF	-
8	Rail Chip Loading	Tons/Hr	6.60	0.0001	-	-	-	-
9	Low Pressure Sanderdust	Tons/Hr	0.71	0.0001	-	-	-	-
10	High Pressure Sanderdust	Tons/Hr	0.71	0.0001	-	-	-	-
11	Plytrim System	Tons/Hr	3.09	0.0005	-	-	-	-
12	Plywood Boiler # 4 (Fuel Cells)	Tons/Hr	3.3 ⁽²⁾	2.6/T	0.075/T	0.38/T	0.18/T	6.6/T
13	Plywood Boiler # 5 (Fuel Cells)	Tons/Hr	3.3 ⁽²⁾	2.6/T	0.075/T	0.38/T	0.18/T	6.6/T
14	Veneer Dryers (Total) Indirect Heat Type	MSF3/8/ Hr	26.00	0.35/ MSF	-	-	2.5/ MSF	-
	Veneer Dryer # 1	MSF3/8/ Hr	6.51	"	-	-	"	-
	Veneer Dryer # 2	MSF3/8/ Hr	13.05	"	-	-	"	-
	Veneer Dryer # 3	MSF3/8/ Hr	6.44	"	-	-	"	-
15	Hot Presses (Total) (Uses PH Resin)	MSF3/8/ Hr	26.00	0.12/ MSF	-	-	0.31/ MSF	-
	Hot Press # 1	MSF3/8/ Hr	13.00	"	-	-	"	-
	Hot Press # 2	MSF3/8/ Hr	13.00	"	-	-	"	-

Note 1: All units may operate 8760 hours per year. Note 2: Tons wood waste fuel on basis of 50% moisture, 4500 Btu/lb.
Note 3: Number not used in permits or Title V application.

MSF3/8 = 1000 ft² 3/8 inch plywood. MBF = 1000 board feet.

Mr. Richard DuBose
December 1, 1998
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TABLE 6
POTENTIAL AIR EMISSIONS - 1994
COASTAL LUMBER COMPANY, HAVANA, FL
(After Addition of #3 Veneer Dryer)

Emission Units		Max Capacity		Potential Emissions (Tons/Year)				
No	Description	Units	Amount	PM ₁₀	SO ₂	NO _x	VOC	CO
1	Sawmill Boiler # 1 (Dutch Oven)	Tons/Hr	3.3 ⁽³⁾	0	0	0	0	0
2	Sawmill Boiler # 2 (Dutch Oven)	Tons/Hr	3.3 ⁽³⁾	0	0	0	0	0
3	Planing Mill A	Tons/Hr	1.13	0	-	-	-	-
4	Planing Mill B	Tons/Hr	1.13	0	-	-	-	-
5	Plywood Boiler # 3 (Stoker)	Tons/Hr	6.7 ⁽²⁾	40	2	44	4	399
6	Green wood Chips & Screen	Tons/Hr	2.85	< 1	-	-	-	-
7 ⁽³⁾	3 Lumber Dry Kilns (Indirect Heat)	MBF/Hr	6.85				0	
8	Rail Chip Loading	Tons/Hr	6.60	6	-	-	-	-
9	Low Pressure Sanderdust	Tons/Hr	0.71	< 1	-	-	-	-
10	High Pressure Sanderdust	Tons/Hr	0.71	< 1	-	-	-	-
11	Plytrim System	Tons/Hr	3.09	14	-	-	-	-
12	Plywood Boiler # 4 (Fuel Cells)	Tons/Hr	3.3 ⁽³⁾	38	1	5	3	95
13	Plywood Boiler # 5 (Fuel Cells)	Tons/Hr	3.3 ⁽³⁾	38	1	5	3	95
14	Veneer Dryers (Total) (Indirect Heat Type)	MSF3/8/Hr	26.00		-	-		-
	Veneer Dryer # 1	MSF3/8/Hr	6.51	10	-	-	71	-
	Veneer Dryer # 2	MSF3/8/Hr	13.05	20	-	-	143	-
	Veneer Dryer # 3	MSF3/8/Hr	6.44	10	-	-	71	-
15	Hot Presses (Total) (Use PH Resin)	MSF3/8/Hr	26.00		-	-		-
	Hot Press # 1	MSF3/8/Hr	13.00	7	-	-	18	-
	Hot Press # 2	MSF3/8/Hr	13.00	7	-	-	18	-
% Max Capacity	100	Annual Potential Emissions:		189	4	55	329	590
<p>Note 1: All units may operate 8760 hours per year. Note 2: Tons wood waste fuel on basis of 50% moisture, 4500 Btu/lb. Note 3: Number not used in permits or Title V application.</p> <p>MSF3/8 = 1000 ft³ 3/8 inch plywood. MBF = 1000 board feet..</p>								

**Attachment
C**

**MRI Proposed HAPs Emission Factors
For
PF Resin Hot Press Operations**

HOT PRESS

Pollutant	HAP?	No. of tests	No. of presses	No. of runs	No. of BDL runs	APCD	Resin type	Emission factor.			Standard deviation	EF units
								Min	Max	Avg		
Methyl isobutyl ketone	H	5	4	26	22	NONE	UF	0.0028	0.016	0.0099	0.0049	lb/MSF 3/4
Methylene chloride	H	5	4	28	26	NONE	UF			BDL		lb/MSF 3/4
NOx		1	1	3	0	NONE	UF			0.017		lb/MSF 3/4
Phenol	H	5	4	26	18	NONE	UF	0.0064	0.024	0.011	0.0076	lb/MSF 3/4
Propionaldehyde	H	5	4	26	26	NONE	UF			BDL		lb/MSF 3/4
Styrene	H	5	4	26	26	NONE	UF			BDL		lb/MSF 3/4
THC as carbon		14	13	48	0	NONE	UF	0.084	1.8	0.79	0.51	lb/MSF 3/4
Toluene	H	5	4	26	26	NONE	UF			BDL		lb/MSF 3/4
Total Condensable PM		2	2	6	0	NONE	UF	0.10	0.35	0.23		lb/MSF 3/4
Valeraldehyde		2	2	6	0	NONE	UF	0.0020	0.0058	0.0039		lb/MSF 3/4
m,p-Xylene	H	5	4	26	26	NONE	UF			BDL		lb/MSF 3/4
o-Xylene	H	5	4	26	26	NONE	UF			BDL		lb/MSF 3/4
Acetaldehyde	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
Acrolein	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
Benzene	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
CO		1	1	3	0	RTO	UF			0.10		lb/MSF 3/4
Cumene	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
Formaldehyde	H	2	2	6	3	RTO	UF	0.00084	0.010	0.0054		lb/MSF 3/4
Methanol	H	2	2	8	6	RTO	UF			BDL		lb/MSF 3/4
Methyl ethyl ketone	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
Methyl isobutyl ketone	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
Methylene chloride	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
NOx		1	1	3	0	RTO	UF			0.092		lb/MSF 3/4
Phenol	H	1	1	3	2	RTO	UF			0.0082		lb/MSF 3/4
Propionaldehyde	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
Styrene	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
Toluene	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
m,p-Xylene	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
o-Xylene	H	1	1	3	3	RTO	UF			BDL		lb/MSF 3/4
THC as carbon		1	1	3	0	RTO	UF			0.018		lb/MSF 3/4
PB veneer press, UF resin												
Formaldehyde	H	1	1	3	0	NONE	UF			0.0082		lb/MSF 3/4
Acetaldehyde	H	1	1	3	0	NONE	UF			0.000099		lb/MSF 3/4
Hexaldehyde		1	1	3	0	NONE	UF			0.00017		lb/MSF 3/4
n-Butylaldehyde		1	1	3	0	NONE	UF			0.00014		lb/MSF 3/4
Methyl ethyl ketone	H	2	1	6	0	NONE	UF	0.00020	0.00035	0.00027		lb/MSF 3/4
1,1,1-Trichloroethane	H	1	1	3	0	NONE	UF			0.00022		lb/MSF 3/4
Toluene	H	1	1	3	0	NONE	UF			0.00047		lb/MSF 3/4
a-Pinene		1	1	3	0	NONE	UF			0.00054		lb/MSF 3/4
b-Pinene		1	1	3	0	NONE	UF			0.00011		lb/MSF 3/4
Softwood Plywood, press, PF resin												
Filterable PM		2	2	6	0	NONE	PF	0.025	0.21	0.12		lb/MSF 3/8
Total condensable PM		2	2	6	0	NONE	PF	0.027	0.14	0.083		lb/MSF 3/8
Acetaldehyde	H	6	9	18	7	NONE	PF	0.00083	0.012	0.0042	0.0041	lb/MSF 3/8
Acrolein	H	6	9	18	18	NONE	PF			BDL		lb/MSF 3/8
Benzene	H	6	9	18	18	NONE	PF			BDL		lb/MSF 3/8
Formaldehyde	H	6	11	23	8	NONE	PF	0.000090	0.0054	0.0019	0.0019	lb/MSF 3/8
m,p-Xylene	H	6	9	18	18	NONE	PF			BDL		lb/MSF 3/8
Methanol	H	6	9	18	0	NONE	PF	0.033	0.33	0.14	0.12	lb/MSF 3/8
Methyl ethyl ketone	H	4	7	12	11	NONE	PF	0.00047	0.0014	0.00087		lb/MSF 3/8
Methyl isobutyl ketone	H	2	4	6	5	NONE	PF	0.00063	0.00079	0.00071		lb/MSF 3/8
o-Xylene	H	6	9	18	18	NONE	PF			BDL		lb/MSF 3/8
Phenol	H	4	7	12	11	NONE	PF	0.00076	0.0022	0.0014		lb/MSF 3/8
Propionaldehyde	H	6	9	18	18	NONE	PF			BDL		lb/MSF 3/8
Styrene	H	6	9	18	18	NONE	PF			BDL		lb/MSF 3/8
THC as carbon		13	13	34	0	NONE	PF	0.042	0.49	0.21	0.15	lb/MSF 3/8
Toluene	H	6	9	18	18	NONE	PF			BDL		lb/MSF 3/8
Hardwood Plywood, press, UF resin												
Acetaldehyde	H	4	6	12	12	NONE	UF			BDL		lb/MSF 3/8
Acrolein	H	4	6	12	12	NONE	UF			BDL		lb/MSF 3/8
Benzene	H	4	6	12	12	NONE	UF			BDL		lb/MSF 3/8
Formaldehyde	H	4	6	12	3	NONE	UF	0.0013	0.0088	0.0047		lb/MSF 3/8
m,p-Xylene	H	4	6	12	12	NONE	UF			BDL		lb/MSF 3/8

**Attachment
D**

**Process Description
of
Coastal Lumber's Havana Plywood Plant**

Attachment D

Coastal Lumber Company
Havana Plywood Plant
Process Description
11/09/00

	<u>Process or Production Unit</u>	<u>Activities</u>
1.	Log Yard	<ul style="list-style-type: none">• unloads incoming log trucks• stores logs• delivers logs to mill
2.	Block Prep & Green End	<ul style="list-style-type: none">• receives logs• debarks logs• cuts logs to 8' blocks• heats blocks in vats• peels blocks into green veneer• stores green veneer
3.	Dryers	<ul style="list-style-type: none">• retrieves green veneer• places at dryer infeeds• dries veneers• sorts and stacks dry veneer• stores dry veneer
4.	Layup Line & Presses	<ul style="list-style-type: none">• retrieves dry veneer• precision end trims wide veneer• core saws inner ply veneer• turns veneer loads• places veneer on layup line• lays up loose panels• stacks loose panels• conveys loose panels to pre-presses• pre-presses loose panels• conveys to hot presses• hot presses panels• stacks rough panels• stores rough panels
5.	Finishing	<ul style="list-style-type: none">• retrieves rough panels• patches rough panels• saws panels to 4' x 8'• sands panels• grades panels• unitizes panels for sale• stores finished units
6.	Shipping	<ul style="list-style-type: none">• retrieves finished units• loads trucks/railroad cars

**Attachment
E**

**Coastal Lumber's
MACT Comparative Replacement Cost Analysis**

Attachment E

Coastal Lumber Company
Havana Plywood Plant

Capital Cost Comparisons
Replacement Of Entire Layup & Pressing Process vs. Coastal's Project
11/14/00

Summary

	<u>Capital Cost (\$)</u>
<u>Capital Cost of Comparison #1:</u>	
Replacement Production Unit With Coastal's Used Equipment Costs (A)	\$8,934,761
Actual Coastal Project (B)	\$2,230,399
Coastal Cost/Production Unit Cost	25.0%
 <u>Capital Cost of Comparison #2:</u>	
Replacement Production Unit With All New Equipment (C)	\$13,340,710
Coastal Project With All New Equipment (D)	\$5,272,113
Coastal Cost/Production Unit Cost	39.5%

Coastal Lumber Company
 Capital Cost of Comparison #1
 Production Unit = Layup Line & Presses
 Replacement Production Unit With Coastal's Used Equipment Costs (A) vs. Actual Coastal Project (B)
 11/14/00

	Quantity	Unit Cost	Extended Cost	Total Project "A"	Coastal Project "B"
<u>Layup Line:</u>					
Layup Line, 8 Booth, Glue Screening/Pumping and Accumulator (Coe)			\$350,000		\$350,000
LUL Freight			10,000		10,000
Short Waste Conveyors (5) To Main Waste Conveyor			37,500		37,500
Roof Fan & Dry Hog Ducting, Installed (Kelly Sheetmetal)			40,180		40,180
Misc. Piping Materials (Air, Glue, Water)			10,000		10,000
Steam Piping Materials			5,000		5,000
Hydraulic Piping Materials			5,000		5,000
TOTAL				457,680	
<u>Conveyors (LUL to Pre-presses to Presses):</u>					
Conveyors, Delivered (Motion Industries)			225,000		35,000
TOTAL				225,000	
<u>Pre-Presses:</u>					
Pre-presses (Globe)	3	45,000	135,000		45,000
Freight - Pre-presses	3	6,360	19,080		8,514
Tech Rep (Globe)		5,000	5,000		
TOTAL				159,080	
<u>Presses:</u>					
Press 30 Opening 4x8, Installed (Williams White)	3	325,000	975,000		325,000
incl. Hydraulic System, Controls, Console, Tech Rep					
High-Speed Hydraulic Conversion	3	32,000	96,000		32,000
Loader/Unloader Systems (Spar-Tek)	3	20,000	60,000		20,000
incl. Hydraulic System, Controls, Tech Rep					
X-Lift For Loader	3	5,900	17,700		5,900
Pressure Controllers (Clouston)	3	26,500	79,500		27,000

Coastal Lumber Company
 Capital Cost of Comparison #1
 Production Unit = Layup Line & Presses
 Replacement Production Unit With Coastal's Used Equipment Costs (A) vs. Actual Coastal Project (B)
 11/14/00

	Quantity	Unit Cost	Extended Cost	Total Project "A"	Coastal Project "B"
Freight - Presses	3	7,586	22,758		7,586
Freight - Loader/Unloader Systems	3	3,900	11,700		3,900
Steam Control Valves (PSC)	3	9,389	28,167		9,389
Steam/Condensate Piping from Boilers (Hunt Construction)			267,198		10,611
TOTAL				1,558,023	
Glue Mixing:					
Glue Mixer, High Shear (Globe)			37,575		
Tanks, Delivered (Caustic/Resin/Waste Water/3 Glue Tanks) (Alabama Tank)			46,050		
Work Platform, Stairs, Ladders, Catwalks, Installed (CLC)			30,000		
Piping to Layup Line (CLC)			20,000		
TOTAL				133,625	
Waste Veneer Hog:					
Knife Hog (Globe)			19,500		19,500
Main Waste Conveyor to Hog (Holland)			16,910		11,200
TOTAL				36,410	
Hog Dust System:					
Dust System, Installed (Bruning & Federle)			144,000		
TOTAL				144,000	
Precision End Trim Saw:					
PET Machine (Globe)			76,560		
PET Machine Freight			3,900		
Saws (Durdin)	4	1,000	4,000		
TOTAL				84,460	

Coastal Lumber Company
 Capital Cost of Comparison #1
 Production Unit = Layup Line & Presses
 Replacement Production Unit With Coastal's Used Equipment Costs (A) vs. Actual Coastal Project (B)
 11/14/00

			(\$)		
	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Total Project "A"</u>	<u>Coastal Project "B"</u>
<u>Core Saw:</u>					
Core Saw Machine (Globe)			78,230		
Core Saw Machine Freight			3,900		
Saws (Durden)	2	3,875	7,750		
TOTAL				89,880	
<u>Veneer Load Turner:</u>					
Turner Machine (Globe)			30,245		
Turner Machine Freight			3,900		
TOTAL				34,145	
<u>Air Compressor:</u>					
Air Compressor, 1000 CFM (Gulf Atlantic)			56,500		
Air Dryer (Gulf Atlantic)			22,169		
Compressor & Dryer Freight			1,500		
TOTAL				80,169	
<u>Building Cost:</u>					
		<u>SF</u>			
Glue Mixing	55'x64' =	3520			
Layup Line	298x70' =	20860			
Hot Presses	110'x120' =	13200			
Hot Stack	110'x50' =	5500			
Total Basic Bldg Cost (Collins)	43080 @		\$23.68 /SF	1,020,134	
Fire Protection (Grinnell)	43080 @		\$2.36 /SF	101,669	
Layup Line Foundations (Collins)				80,413	
Pre-press Foundations (Collins)	3	3,825		11,475	
Press Foundations (Collins)	3	79,450		238,350	
Dry Hog Foundation (Collins)				16,000	
					165,076 incl. above incl. above 16,000

Coastal Lumber Company
 Capital Cost of Comparison #1
 Production Unit = Layup Line & Presses
 Replacement Production Unit With Coastal's Used Equipment Costs (A) vs. Actual Coastal Project (B)
 11/14/00

	Quantity	Unit Cost	Extended Cost	Total Project "A"	Coastal Project "B"
Press Cupalo (Collins)	For 3		57,600		13,125
TOTAL				1,525,641	
Mechanical					
Mechanical Installation - LUL, Pre-presses, Presses (Watkins)			674,000		201,000
Mechanical Installation - Glue Mixer, 6 Tanks, PET Saw, Core Saw, Load Turner, Air Compressor (Watkins)			38,000		
TOTAL				712,000	
Electrical:					
MCC Rooms (Collins)	3	44,504	133,512		
Transformer Pads (Collins)	2	13,125	26,250		
Electrical Installation: (Higgins)					
Primary Power Supply			480,000		
Supply & Install 2 Transformers			244,000		
Supply & Install 3 MCCs			150,000		
Supply & Install Lighting			140,000		
Supply & Install AC Systems			7,500		
Supply & Install 120V Power			59,000		
Supply & Install Telephone/Comm Lines			7,500		
Power Wiring For All Equipment			500,000		489,402
TOTAL				1,747,762	
Manufacturer's Recommended Spare Parts:					
Layup Line (Coe)			100,988		30,000
Press Loader/Unloader System (Spar-Tek)			24,647		
Pressure Controllers (Clouston)			3,130		
Hog, Pre-Press, Glue Mixer, Core Saw (Globe)			16,006		

Coastal Lumber Company
 Capital Cost of Comparison #1
 Production Unit = Layup Line & Presses
 Replacement Production Unit With Coastal's Used Equipment Costs (A) vs. Actual Coastal Project (B)
 11/14/00

	Quantity	Unit Cost	Extended Cost	Total Project "A"	Coastal Project "B"
TOTAL				144,771	
SUBTOTAL				7,132,646	1,932,883
Sales Tax (on New Equipment only):				375,585	63,315
Engineering (10%):				713,265	100,000
Contingency (10%):				713,265	134,201
GRAND TOTAL				\$8,934,761	\$2,230,399

Project "B"/Project "A"

25.0%

Items That Are Not Part Of The "Production Unit"
 That Are Excluded Above But That Are Included In The Project Request:

Inventory Building Expansion:

Foundations, Slab, etc.	223,855
Building	218,606
Fire Protection	53,400
RR Spur	84,740
Demolition	4,000

Total Authorized Capital Spending On Project Request \$2,815,000

Coastal Lumber Company
 Capital Cost of Comparison #2
 Production Unit = Layup Line & Presses
 Replacement Production Unit With All New Equipment (C) vs. Coastal Project With All New Equipment (D)
 11/14/00

			(\$)		
	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Total Project "C"</u>	<u>Coastal Project "D"</u>
<u>Layup Line:</u>					
Layup Line, 8 Booth, Glue Screening/Pumping and Accumulator (Coe)			\$1,905,500		\$1,905,500
LUL Freight			40,000		40,000
Short Waste Conveyors (5) To Main Waste Conveyor			37,500		37,500
Roof Fan & Dry Hog Ducting, Installed (Baxley Blowpipe)			54,750		40,180
Misc. Piping Materials (Air, Glue, Water)			10,000		10,000
Steam Piping Materials			5,000		5,000
Hydraulic Piping Materials			5,000		5,000
TOTAL				2,057,750	
<u>Conveyors (LUL to Pre-presses to Presses):</u>					
Conveyors, Delivered (Motion Industries)			225,000		35,000
TOTAL				225,000	
<u>Pre-Presses:</u>					
Pre-presses (Globe)	3	126,205	378,615		126,205
Freight - Pre-presses	3	6,360	19,080		6,360
Tech Rep (Globe)		5,000	5,000		2,000
TOTAL				402,695	
<u>Presses:</u>					
Press 30 Opening 4x8, Installed (Williams White)	3	590,000	1,770,000		590,000
incl. Hydraulic System, Controls, Console, Tech Rep					
Loader/Unloader Systems (Spar-Tek)	3	322,685	968,055		322,685
incl. Hydraulic System, Controls, Tech Rep					
Pressure Controllers (Clouston)	3	26,500	79,500		26,500
Freight - Presses	3	7,586	22,758		7,586

Coastal Lumber Company
 Capital Cost of Comparison #2
 Production Unit = Layup Line & Presses
 Replacement Production Unit With All New Equipment (C) vs. Coastal Project With All New Equipment (D)
 11/14/00

	Quantity	Unit Cost	Extended Cost	Total Project "C"	Coastal Project "D"
(\$)					
Freight - Loader/Unloader Systems	3	3,900	11,700		3,900
Steam Control Valves (PSC)	3	9,389	28,167		9,389
Steam/Condensate Piping from Boilers (Hunt Construction)			267,198		10,611
TOTAL				3,147,378	
Glue Mixing:					
Glue Mixer, High Shear (Globe)			37,575		
Tanks, Delivered (Caustic/Resin/Waste Water/3 Glue Tanks) (Alabama Tank)			46,050		
Work Platform, Stairs, Ladders, Catwalks, Installed (CLC)			30,000		
Piping to Layup Line (CLC)			20,000		
TOTAL				133,625	
Waste Veneer Hog:					
Knife Hog (Globe)			57,365		57,365
Main Waste Conveyor to Hog (Holland)			16,910		11,200
TOTAL				74,275	
Hog Dust System:					
Dust System, Installed (Bruning & Federle)			144,000		
TOTAL				144,000	
Precision End Trim Saw:					
PET Machine (Globe)			76,560		
PET Machine Freight			3,900		
Saws (Durden)	4	1,000	4,000		
TOTAL				84,460	
Core Saw:					

Coastal Lumber Company
 Capital Cost of Comparison #2
 Production Unit = Layup Line & Presses
 Replacement Production Unit With All New Equipment (C) vs. Coastal Project With All New Equipment (D)
 11/14/00

				(\$)		
	<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	<u>Total Project "C"</u>	<u>Coastal Project "D"</u>	
Core Saw Machine (Globe)			78,230			
Core Saw Machine Freight			3,900			
Saws (Durden)	2	3,875	7,750			
TOTAL				89,880		
<u>Veneer Load Turner:</u>						
Turner Machine (Globe)			30,245			
Turner Machine Freight			3,900			
TOTAL				34,145		
<u>Air Compressor:</u>						
Air Compressor, 1000 CFM (Gulf Atlantic)			56,500			
Air Dryer (Gulf Atlantic)			22,169			
Compressor & Dryer Freight			1,500			
TOTAL				80,169		
<u>Building Cost:</u>						
		<u>SF</u>				
Glue Mixing	55'x64' =	3520				
Layup Line	298x70' =	20860				
Hot Presses	110'x120' =	13200				
Hot Stack	110'x50' =	5500				
Total Basic Bldg Cost (Collins)	43080 @		\$23.68 /SF	1,020,134		
Fire Protection (Grinnell)	43080 @		\$2.36 /SF	101,669		
Layup Line Foundations (Collins)				80,413	80,413	
Pre-press Foundations (Collins)	3	3,825		11,475	3,825	
Press Foundations (Collins)	3	79,450		238,350	79,450	
Dry Hog Foundation (Collins)				16,000	16,000	
Press Cupalo (Collins)	For 3			57,600	13,125	

Coastal Lumber Company
 Capital Cost of Comparison #2
 Production Unit = Layup Line & Presses
 Replacement Production Unit With All New Equipment (C) vs. Coastal Project With All New Equipment (D)
 11/14/00

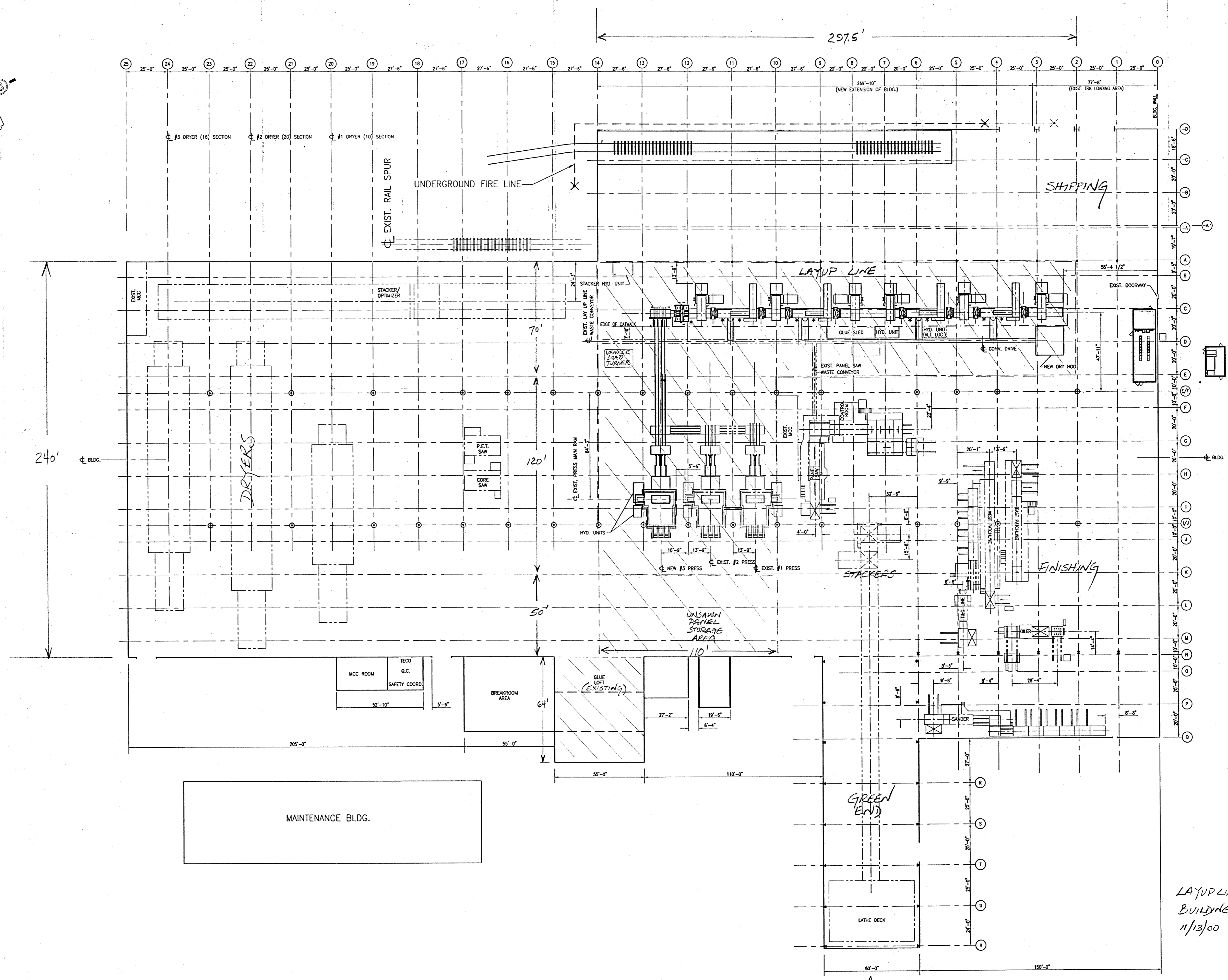
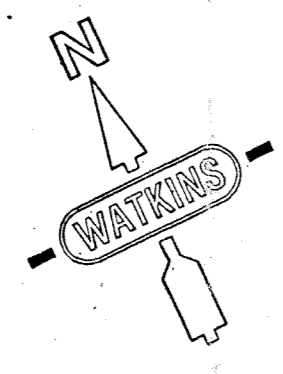
	Quantity	Unit Cost	Extended Cost	Total Project "C"	Coastal Project "D"	
				(\$)		
TOTAL				1,525,641		
Mechanical						
Mechanical Installation - LUL, Pre-presses, Presses (Watkins)				674,000	201,000	
Mechanical Installation - Glue Mixer, 6 Tanks, PET Saw, Core Saw, Load Turner, Air Compressor (Watkins)				38,000		
TOTAL				712,000		
Electrical:						
MCC Rooms (Collins)				3	44,504	133,512
Transformer Pads (Collins)				2	13,125	26,250
Electrical Installation: (Higgins)						
Primary Power Supply					480,000	
Supply & Install 2 Transformers					244,000	
Supply & Install 3 MCCs					150,000	
Supply & Install Lighting					140,000	
Supply & Install AC Systems					7,500	
Supply & Install 120V Power					59,000	
Supply & Install Telephone/Comm Lines					7,500	
Power Wiring For All Equipment					500,000	489,402
TOTAL					1,747,762	
Manufacturer's Recommended Spare Parts:						
Layup Line (Coe)					100,988	30,000
Press Loader/Unloader System (Spar-Tek)					24,647	
Pressure Controllers (Clouston)					3,130	
Hog, Pre-Press, Glue Mixer, Core Saw (Globe)					16,000	
TOTAL					144,771	

Coastal Lumber Company
 Capital Cost of Comparison #2
 Production Unit = Layup Line & Presses
 Replacement Production Unit With All New Equipment (C) vs. Coastal Project With All New Equipment (D)
 11/14/00

<u>Quantity</u>	<u>Unit Cost</u>	<u>Extended Cost</u>	(\$)	<u>Total Project "C"</u>	<u>Coastal Project "D"</u>
SUBTOTAL				10,603,551	4,165,196
<u>Sales Tax (on New Equipment only):</u>				616,449	273,878
<u>Engineering (10%):</u>				1,060,355	416,520
<u>Contingency (10%):</u>				1,060,355	416,520
GRAND TOTAL				\$13,340,710	\$5,272,113
Project "D"/Project "C"					39.5%

**Attachment
F**

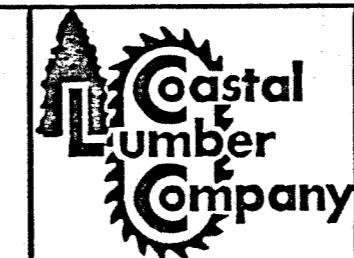
**Coastal Lumber Company
Havana Plant Layout Drawing**




LAYUP LINE & PRESS PROJECT
BUILDING AREA
11/13/00

REVISIONS

LOG (AREA) → BLOCK (AREA)



DRAWN BY	INITIALS	DATE	DEPT.
CHECKED BY	NAA	5/00	PLANT HAVANA, FL
APPROVAL			BLDG. No.
APPROVAL			DWG. LIST
SCALE	1"=30'		MAT'L.

 WATKINS ENGINEERS AND CONSTRUCTORS P.O. Box 2194 Tallahassee, Florida 32316 W.E.C. No. 63838G001A	COASTAL LUMBER COMPANY HAVANA, FL PLYWOOD PLANT EQUIPMENT LAYOUT GENERAL ARRANGEMENT	DRAWING NUMBER 63838G001-A SUPERSEDES SUPERSEDED BY
	ATT. F	