Georgia-Pacific Corporation 133 Peachtree Street NE (30303)
P.O. Box 105605
Atlanta, Georgia 30348-5605
Telephone (404) 652-4000

July 28, 2000

RECEIVED
AUG 03 2000
BUREAU OF AIR REGULATION

Mr. Joseph Kahn, P.E.
Florida Department of Environmental Protection
New Source Review Section
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Proposed Georgia-Pacific Hosford Facility - Additional Information per July 28, 2000 Conference Call

Dear Mr. Kahn:

The purpose of this letter is to summarize our discussions from earlier today.

You first asked for information regarding the elapsed times needed for both bake-outs and wash-outs in the regenerative thermal oxidizers (RTOs). For the dryer RTOs, the times needed to complete the activities are 12 and 72 hours for bake-outs and wash-outs, respectively. Wash-outs will not be required for the RTO serving the press, but bake-outs may be needed on occasion, although the frequency would be less than what will be needed for the dryer RTOs.

As we discussed, Georgia-Pacific is willing to lower the emission estimates for volatile organic compounds (VOCs), nitrogen oxides (NOx), and particulate matter from the dryer RTOs. We are also willing to commit to a lower level of VOC emissions for the press RTO. During our last telephone conversation, yourself, and others on the call (e.g., USEPA Region IV, Fish and Wildlife Service, and the National Park Service) requested that we accept control efficiencies of 95% for VOCs exiting both the dryer and press RTOs. Although our dryer vendor has not changed their guarantee of 90%, we are willing to accept the efficiency of 95%. As was the case with Louisiana-Pacific, Hanceville, we still think it is more appropriate to have our limit expressed in terms of mass (lbs/hour) as opposed to 95%, primarily due to the uncertainties surrounding the moisture content of the furnish.

With regard to NOx from the dryer RTOs, we are now proposing a final emission rate of 60 pounds per hour (lbs/hour). This represents a decrease of approximately 20% over our original proposal. We recognize the fact that the memorandum from Ellen Porter to Kirsten King, dated February 2, 2000, states that the BACT limit should be 40 lbs/hour. However, as we discussed today and in our recent correspondence, while this level of emissions may represent BACT for

NOx from the dryers at Brookneal, we do not feel that it represents BACT for Hosford. Due to the unique design of Brookneal (Wellons Energy System), we were able to install urea injection for NOx controls. The Wellons System operates at temperatures that are conducive to the use of urea injection. This technology is infeasible for Hosford, given the design of that facility and the different operating temperatures.

It should also be noted that our proposed emission rate is well within the range that has been established for other, similar facilities in the RACT/BACT/LAER Clearinghouse. While some of the hourly mass emission rates listed in the Clearinghouse are lower than what is proposed for Hosford, those rates have been established for smaller facilities. G-P believes that the most appropriate, common terms to compare dryer emissions among facilities is per a dried furnish rate or finished production rate, not a heat input rate. Viewing NOx emissions in terms of both dried furnish (oven dried tons (ODT)), the limits in the Clearinghouse range from 0.66 to 1.75 lbs NOx per ODT (dried furnish) – our proposed rate of 60 lbs/hour corresponds to an emission factor of approximately 0.96 lbs NOx per ODT. On a finished product basis, the factors range from 0.32 to 1.70 (at two Louisiana-Pacific facilities) lbs per thousand square feet (msf). For Hosford, we are now proposing a value of 1.1 lbs per msf of finished production. It is also worth mentioning that, due to the higher moisture content expected for our furnish, the dryer vendor has estimated that our emissions will be approximately 32 percent higher than a comparably sized facility with a lower furnish moisture content. For all of these reasons, we feel that this represents a very realistic estimate of our NOx emissions from the dryer RTOs.

For particulate matter, we are proposing to lower our original estimate by more than 50% to 33.8 lbs/hour. We derived this value based on testing conducted for a similar facility that we operate in Skippers, Virginia. The highest test run for the RTO at this facility yielded an emission value of 0.37 lb/ODT. Given the fact that particulate matter emissions are strongly impacted by the moisture content of the furnish, we have adjusted this value accordingly. Our dryer vendor has estimated that particulate matter emissions will increase by approximately 46% for the higher moisture content furnished. As such, we calculate an emission factor for Hosford of 0.54 lb/ODT. This compared to a Clearinghouse range of 0.43 to 1.19 lb/ODT. This is also equivalent to 0.62 lb/msf, with the values in the Clearinghouse ranging from 0.15 to 1.37 lb/msf. Again, given the higher moisture content of furnish anticipated for this facility, we feel that this represents BACT for the Hosford dryers.

The following table summarizes the revisions:

Summary of Proposed Emission Rate Revisions for G-P Hosford Facility		
Pollutant/Source	**January 2000 Application**	**Proposed Values**
PM10 – Dryers after controls	74.5 lbs/hour total for 5 dryers	33.8 lbs/hour total for 5 dryers
NOx – Dryers after controls	73.3 lbs/hour for 5 dryers	60.0 lbs/hr total for 5 dryers
VOC – Press after controls	90% control	95% control
VOC – Dryers after controls	90% control	95% control

We appreciate your assistance in helping us move forward with this very important project.

Sincerely,

Mr. Ronnie L. Paul
Executive Vice President, Wood Products
and Distribution

Mr. Mark J. Aguilar, P.E.
Senior Environmental Engineer

Seal

cc: P.J. Vasquez GA030-17
M.M. Vest FL165 (Palatka)
T.R. Wyles GA030
John Bunyak, National Park Service
Ed Middleswart, FDEP Pensacola
Gregg Worley, USEPA Region IV

Georgia-Pacific

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(404) 652-4293
(404) 654-4706 - Fax Number

FAX COVER SHEET

DATE	TOTAL PAGES
July 21, 2000	3

TO	FAX NUMBER
Mr. Joe Kahn	850 922-6979

LOCATION/DEPARTMENT	FLOOR

FROM
Mark Aguilar (404) 652-4293

LOCATION/DEPARTMENT	FLOOR
G-P Atlanta	9

COMMENTS
Regarding Proposed Hosford OSB: Test report information from Dryer Vendor for Hanceville test.

IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL (404) 652-4293

M-E-C COMPANY
TELEFAX TRANSMITTAL

DATE: July 18, 2000 **PAGE:** 1 **OF** 2

TO: MARK AGUILAR **FAX NO:** 404-654-4706

COMPANY: Georgia-Pacific Corp. **TELEFAX CC TO:**

STREET/P.O.BOX: 133 Peachtree St NE **FAX:** PAUL VASQUEZ G-P, ATLANTA 404-588-3975

CITY,STATE,ZIP: Altanta, GA 30348-5605 ALLEN DEES G-P, ATLANTA #11

COUNTRY: USA

SUBJECT: G-P OSB Plant, Hosford, FL D-0014-9-0

Attached is a page from the Hanceville June 17, 1994 Emission Test Report. It has been faxed and copied several times; so I added some notes if you are not able to read the shaded areas.

Not only does it say four dryers were operated, but based on the dscfm in and out, it's obvious that only 4 dryers were operating during the test. I trust this is sufficient proof for the State of Florida.

M-E-C does not have the complete emission test report, only summaries and our own internal report. However, if we can be of further help, please let me know.

Regards,

Mike Hudson

copy: DMP/BCB/EAD

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AVERAGE OF TWO DRYERS TESTED

PROJECTED TOTAL OF FOUR DRYERS

1.3 Totals, Averages and Efficiency Summaries:

1.3.1 Dryer Multiclone Inlets

PARAMETERS	UNITS	Average of two dryers tested	Projected total of four dryers *
PARTICULATE LOADING	#/hr	25.92	103.67
VOC LOADING (as C)	#/hr	65.91	263.64
NOx LOADING	#/hr	4.14	16.54
CO LOADING	#/hr	6.03	24.12
FORMALDEHYDE LOADING	#/hr	1.38	5.52
VOLUMETRIC FLOWRATE	dscfm	27508	110030

* Four dryer total is presented here. Attempts to operate all five dryers at maximum load were not successful. Therefore four of the dryers were operated at maximum furnish rates.

AVERAGE OF BOTH RTO'S

TOTAL OF BOTH RTO'S

REMOVAL EFFICIENCY

1.3.2 Dryer East and West RTO Outlets

PARAMETER	UNITS	[illegible]	[illegible]	[illegible]
PARTICULATE LOADING	#/hr	5.24	10.48	90.4
VOC LOADING (as C)	#/hr	0.94	1.87	99.3
NOx LOADING	#/hr	13.87	27.73	- 67.7
CO LOADING	#/hr	5.02	10.04	58.4
FORMALDEHYDE LOADING	#/hr	0.126	0.251	95.4
VOLUMETRIC FLOWRATE	dscfm	66456	132912	—

JOE

INTEROFFICE MEMORANDUM

Date: 21-Jul-2000 05:56pm
From: Kissell.Mary
Kissell.Mary@epamail.epa.gov
Dept:
Tel No:

To: cindy.phillips (cindy.phillips@dep.state.fl.us)
To: greg.landis (greg.landis@deq.state.or.us)

Subject: Plywood and Composite Wood Products MACT

Attached are table 2 from the draft proposal preamble and the definitions from the draft rule. Also attached is a set of slides I prepared in April for the Composite Panel Association. A couple of the slide pages need caveats if you plan to depend on them for decision-making -- concentration options and restriction on emissions averaging. Also, when we say THC, we mean THC, as carbon, minus methane.

The rule is undergoing review now within EPA. I hope to get it to OMB in August. If you have any questions, please call me at (919) 541-4516.

(See attached file: P&CWP_preambletable2_ruledefns.wpd)(See attached file: cpa_april00.PRZ)

TABLE 2. PROCESS UNITS SUBJECT TO THE PROPOSED EMISSION LIMITS

For the following process units...	Does today's proposed rule include emission limits for...	
	Existing affected sources?	New affected sources?
Softwood veneer dryers; primary tube dryers; secondary tube dryers; strand dryers; green rotary dryers; hardboard ovens; reconstituted wood product presses; and pressurized refiners	Yes	Yes
Press predryers; fiberboard mat dryers; board coolers; and stand alone digesters	No	Yes
Dry rotary dryers; veneer redryers; plywood presses; engineered wood products presses; hardwood veneer dryers; humidifiers; atmospheric refiners; formers; blenders; rotary agricultural fiber dryers; agricultural fiber board presses; sanders; saws; fiber washers; chippers; log vats; lumber kilns; storage tanks; wastewater operations; and miscellaneous coating operations	No	No

Terms used in this subpart are defined in the Act, in 40 CFR 63.2, the General Provisions, and in this section as follows:

Affected source means the collection of dryers, blenders, formers, presses, board coolers, and other process units associated with the manufacturing of plywood and composite wood products at a plant site. The affected source includes, but is not limited to, green end operations, drying operations, blending and forming operations, pressing and board cooling operations, and miscellaneous finishing operations (such as sanding, sawing, patching, edge sealing, and other finishing operations not subject to other NESHAP). The affected source also includes onsite storage of raw materials used in the manufacture of plywood and/or composite wood products, such as resins; onsite wastewater treatment operations specifically associated with plywood and composite wood products manufacturing; and miscellaneous coating operations (defined elsewhere in this section).

Biofilter means an enclosed control system such as a tank or series of tanks with a fixed roof that are filled with media (such as bark) and use microbiological activity to transform organic pollutants in a process exhaust stream to innocuous compounds such as carbon dioxide, water, and inorganic salts. Wastewater treatment systems such as aeration lagoons or activated sludge systems are not considered to be biofilters.

Capture device means a hood, enclosure, or other means of collecting emissions into a duct so that the emissions can be directed to a pollution control device.

Capture efficiency means the fraction (expressed as a percentage) of the pollutants from an emission source that is delivered to an add-on air pollution control device.

Catalytic oxidizer means a control system that combusts or oxidizes, in the presence of a catalyst, exhaust gas from a process unit. Catalytic oxidizers include regenerative catalytic oxidizers and thermal catalytic oxidizers.

Control device means any equipment that reduces the quantity of a hazardous air pollutant that is emitted to the air. The device may destroy the hazardous air pollutant or secure the hazardous air pollutant for subsequent recovery. Control devices include, but are not limited to, thermal or catalytic oxidizers, combustion units that incinerate process exhausts, biofilters, and condensers.

Control system means the combination of capture and control devices used to reduce hazardous air pollutant emissions to the atmosphere.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation (including any operating limit), or work practice

standard;

(2) fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during startup, shutdown, or malfunction, regardless or whether or not such failure is permitted by this subpart.

Digester means a piece of equipment operated at elevated temperature and pressure and used for preheating (usually by steaming) wood material prior to refining.

Dryer heated zones means the zones of a softwood veneer dryer or fiberboard mat dryer that are equipped with heating and hot air circulation units. The cooling zone(s) of the dryer through which ambient air is blown are not part of the dryer heated zones.

Dry rotary dryer means a rotary dryer that dries wood particles or fibers with a maximum inlet moisture content of less than or equal to 30 percent (by weight, dry basis) AND operates with a maximum inlet temperature of less than or equal to 600 degrees Fahrenheit. A dry rotary dryer is a process unit.

Dry forming means the process of making a mat of resinated fiber to be compressed into a reconstituted wood product such as particleboard, OSB, MDF, or hardboard.

Emission limitation means any emission limit, opacity limit, operating limit, or visible emission limit.

Fiber means the slender threadlike elements of wood or similar cellulosic material, which are separated by chemical and/or mechanical means, as in pulping, that can be formed into boards.

Fiberboard means a composite panel composed of cellulosic fibers (usually wood or agricultural material) made by wet forming and compacting a mat of fibers. Fiberboard density is less than 0.50 grams per cubic centimeter (31.5 pounds per cubic foot).

Fiberboard mat dryer means a dryer used to reduce the moisture of wet-formed wood fiber mats by operation at elevated temperature. A fiberboard mat dryer is a process unit.

Furnish means the fibers, particles, or strands used for making boards.

Glue-laminated beam means a structural wood beam made by bonding lumber together along its faces with resin.

Green rotary dryer means a rotary dryer that dries wood particles or fibers with an inlet moisture content of greater than 30 percent (by weight, dry basis) at any dryer inlet temperature OR operates with an inlet temperature of greater than 600 degrees Fahrenheit with any inlet moisture content. A green rotary dryer is a process unit.

Hardboard means a composite panel composed of cellulosic fibers made by dry or wet forming and pressing of a resinated fiber mat. Hardboard has a density of 0.50 to 1.20 grams per cubic centimeter (31.5 to 75 pounds per cubic foot).

Hardboard oven means an oven used to heat treat or temper hardboard after hot pressing. Humidification chambers are not considered as part of hardboard ovens. A hardboard oven is a process unit.

Hardwood means the wood of a broad-leafed tree, either deciduous or evergreen. Examples of hardwoods include (but are not limited to) aspen, birch, and oak.

Hardwood veneer dryer means a dryer that removes excess moisture from veneer by conveying the veneer through a heated medium on rollers, belts, cables, or wire mesh. Hardwood veneer dryers are used to dry veneer with less than 50 percent softwood species on an annual volume basis. Veneer kilns that operate as batch units; veneer dryers heated by radio frequency or microwaves that are used to redry veneer; and veneer redryers (defined elsewhere) that are heated by conventional means are not considered to be hardwood veneer dryers. A hardwood veneer dryer is a process unit.

Laminated strand lumber (LSL) means a composite product formed into a billet made of thin wood strands cut from whole logs, resinated, and pressed together with the grain of each strand oriented parallel to the length of the finished product.

Laminated veneer lumber (LVL) means a composite product formed into a billet made from layers of resinated wood veneer sheets or pieces pressed together with the grain of each veneer aligned primarily along the length of the finished product. Laminated veneer lumber includes parallel strand lumber (PSL).

Medium density fiberboard (MDF) means a composite panel composed of cellulosic fibers (usually wood) made by dry forming and pressing of a resinated fiber mat.

Method detection limit means the minimum concentration of an analyte that can be determined with 99 percent confidence that the true value is greater than zero.

Miscellaneous coating operations means application of any of the following to plywood or composite wood products: edge seals, moisture sealants, anti-skid coatings, company logos, trademark or grade stamps, nail lines, synthetic patches, wood patches, wood putty, concrete forming oils, glues for veneer composing, and shelving edge fillers. Miscellaneous coating operations also include the application of primer to OSB siding that occurs at the same site as OSB manufacture.

MSF means thousand square feet (92.9 square meters). Square footage of panels is usually measured on a thickness basis, such as 3/8-inch, to define the total volume of panels. Equation 3 in §63.2262(j) shows how to convert from one thickness basis to another.

Nondetect data means, for the purposes of this subpart, any value that is below the method detection limit.

Oriented strandboard (OSB) means a composite panel produced from thin wood strands cut from whole logs, formed into resinated layers (with the grain of strands in one layer oriented perpendicular to the strands in adjacent layers), and pressed.

Oven dried ton(s) (ODT) means tons of wood dried until all of the moisture in the wood is removed. One oven-dried ton equals 907 oven-dried kilograms.

Particle means a distinct fraction of wood or other cellulosic material produced mechanically and used as the aggregate for a particleboard. Particles are larger in size than fibers.

Particleboard means a composite panel composed of cellulosic materials (usually wood or agricultural fiber) in the form of discrete pieces or particles, as distinguished from fibers, which are pressed together with resin.

Permanent total enclosure (PTE) means a permanently installed containment that meets the criteria of Method 204 (40 CFR part 51, Appendix M).

Plant site means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Plywood and composite wood products (PCWP) manufacturing facility means a plant site that manufactures plywood and/or composite wood products by bonding wood material (fibers, particles, strands, veneers, etc.) or agricultural fiber with resin, generally under heat and pressure, to form a structural panel or engineered wood product. Plywood and composite wood products include (but are not limited to) plywood, veneer, particleboard, oriented strand board, hardboard, fiberboard, medium density fiberboard, laminated strand lumber, laminated veneer lumber, wood I-joists, and glue-laminated beams.

Plywood means a panel product consisting of layers of wood veneers hot pressed together with resin. Plywood includes panel products made by hot pressing (with resin) veneers to a substrate such as particleboard, MDF, or lumber.

Press predryer means a dryer used to reduce the moisture and elevate the temperature of a wet-formed fiber mat before the mat enters a hot press. A press predryer is a process unit.

Pressurized refiner means a piece of equipment operated under pressure for preheating (usually by steaming) wood material and refining (rubbing or grinding) the wood material into fibers. Pressurized refiners are operated with continuous infeed and outfeed of wood material and maintain elevated internal pressures (i.e., there is no pressure release) throughout the preheating and refining process. A pressurized refiner is a process unit.

Primary tube dryer means a single-stage tube dryer or the first stage of a multi-stage tube dryer. Tube dryer stages are separated by vents for removal of moist gases between stages (for example, a product cyclone at the end of a single-stage dryer or between the first and second stages of a multi-stage tube dryer). The first stage of a multi-stage tube dryer is used to remove the majority of the moisture from the wood furnish (compared to the moisture reduction in subsequent stages of the tube dryer). A primary tube dryer is a process unit.

Process unit means equipment classified according to its function such as a blender, dryer, press, former, or board cooler.

Reconstituted wood product board cooler means a piece of equipment designed to reduce the temperature of a board by means of forced air or convection within a controlled time period after the board exits the reconstituted wood product press unloader. Board coolers include wicket and star type coolers commonly found at MDF and particleboard plants. Board coolers do not include cooling sections of dryers (e.g., veneer dryers or fiberboard mat dryers) or coolers integrated into or following hardboard bake ovens or humidifiers. A reconstituted wood product board cooler is a process unit.

Reconstituted wood product press means a press that presses a resinated mat of wood fibers, particles, or strands between hot platens or hot rollers to compact and set the mat into a panel by simultaneous application of heat and pressure. Reconstituted wood product presses are used in the manufacture of hardboard, medium density fiberboard, particleboard, and oriented strandboard. Extruders are not considered to be reconstituted wood product presses. A reconstituted wood product press is a process unit.

Representative operating conditions means operation of a process unit during performance testing under the conditions that the process unit will typically be operating in the future, including use of a representative range of materials (e.g., wood material of a typical species mix and moisture content or typical resin formulation) and representative operating temperature.

Resin means the synthetic adhesive (including glue) or natural binder, including additives, used to bond wood or other cellulosic materials together to produce plywood and composite wood products.

Responsible official means responsible official as defined in 40 CFR 70.2 and 40 CFR 71.2.

Secondary tube dryer means the second stage and subsequent stages following the primary stage of a multi-stage tube dryer. Secondary tube dryers, also referred to as relay dryers, operate at lower temperatures than the primary tube dryer they follow. Secondary tube dryers are used to remove only a small amount of the furnish moisture compared to the furnish moisture reduction across the primary tube dryer. A secondary tube dryer is a process unit.

Softwood means the wood of a coniferous tree. Examples of softwoods include (but are not limited to) Southern yellow pine, Douglas fir, and White spruce.

Softwood veneer dryer means a dryer that removes excess moisture from veneer by conveying the veneer through a heated medium on rollers, belts, cables, or wire mesh. Softwood veneer dryers are used to dry veneer with greater than or equal to 50 percent softwood species on an annual volume basis. Veneer kilns that operate as batch units; veneer dryers heated by radio frequency or microwaves that are used to redry veneer; and veneer redryers (defined elsewhere) that are heated by conventional means are not considered to be softwood veneer dryers. A softwood veneer dryer is a process unit.

Startup means bringing equipment online and starting the production process.

Startup, initial means the first time equipment is put into operation. Initial startup does not include operation solely for testing equipment. Initial startup does not include subsequent startups (as defined in this section) following malfunction or shutdowns or following changes in product or between batch operations. Initial startup does not include startup of equipment that occurred when the source was an areas source.

Startup, shutdown, and malfunction plan (SSMP) means a plan developed according to the provisions of §63.6(e)(3).

Strand means a long (with respect to thickness and width), flat wood piece specially cut from a log for use in oriented strandboard, laminated strand lumber, or other wood strand-based product.

Strand dryer means a dryer operated at elevated temperature and used to reduce the moisture of wood strands used in the manufacture of OSB, LSL, or other wood strand-based products. A strand dryer is a process unit.

Thermal oxidizer means a control system that combusts or oxidizes exhaust gas from a process unit. Thermal oxidizers include regenerative thermal oxidizers and burners or combustion units through which process exhausts are routed.

Total hazardous air pollutant (HAP) emissions means, for purposes of this rulemaking, the sum of the emissions of the following six compounds: acetaldehyde, acrolein, formaldehyde, methanol, phenol, and propionaldehyde.

Tube dryer means a single- or multi-stage dryer operated at elevated temperature and used to reduce the moisture of wood fibers or particles as they are conveyed (usually pneumatically) through the dryer. Resin may or may not be applied to the wood material before it enters the tube dryer. A tube dryer is a process unit.

Veneer means thin sheets of wood peeled or sliced from logs for use in the manufacture of wood products such as plywood, laminated veneer lumber, or other products.

Veneer redryer means a dryer heated by conventional means, such as direct wood-fired, direct-gas-fired, or steam heated, that is used to redry veneer that has been previously dried. Because the veneer dried in a veneer redryer has been previously dried, the inlet moisture content of the veneer entering the redryer is less than 25 percent (by weight, dry basis). A veneer redryer is a process unit.

Wet forming means the process of making a slurry of water, fiber, and additives into a mat of fibers to be compressed into a fiberboard or hardboard product.

Wood I-joists means a structural wood beam with an I-shaped cross section formed by bonding (with resin) wood or laminated veneer lumber flanges onto a web cut from a panel such as plywood or oriented strandboard.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

§§63.2293-63.2299 [Reserved]

PRESENTATION to CPA

~~APRIL 16, 2000~~

PLYWOOD AND COMPOSITE WOOD PRODUCTS MACT

Click here to add clip art

Purpose of Presentation

- introduce EPA lead on MACT
- familiarize attendees with EPA regulatory approach
- share some basics of P&CWP MACT proposal
- share anticipated schedule

EPA Project Lead

Mary Tom Kissell
(919) 541-4516
kissell.mary@epa.gov
U. S. EPA (MD-13)
Research Triangle Park, NC 27711

Terms

- NESHAP
- MACT
- source category
- existing source & new source
- affected source
- emission point
- MACT floor

Regulatory Approach - MACT Floor Requirements

- section 112(d) of the Clean Air Act
- technology based
  - existing sources
    - average emission limitation achieved by best performing 12% (>30 sources)
    - average achieved by best performing five sources (
  - new sources - best controlled similar source

Regulatory Approach - Gathering Information

- Literature
- Site visits
- Regional, State, and local agencies
- Other rules, such as NSPS and SIP
- Vendors
- Trade associations

Regulatory Approach - Costs and Emission Reductions

- engineering costs
- emission reductions
- economic impacts
- small business
- environmental and energy impacts

Draft MACT Proposal - Processes

- particleboard
- oriented strandboard
- plywood and veneer
- hardboard
- fiberboard
- medium density fiberboard
- engineered wood products such as laminated veneer lumber and I-joists

Draft MACT Proposal - HAP Emitted

- Acetaldehyde
- Methanol
- Formaldehyde
- Phenol
- Also: acrolein, propionaldehyde, toluene, benzene, xylenes, etc.

Draft MACT Proposal - Emission Points Requiring Control (existing)

- wood dryers - includes tube, rotary, and conveyer dryers; excludes dry dryers
- softwood veneer dryers
- reconstituted wood presses
- bake/tempering ovens
- continuous digesters/refiners

Draft MACT Proposal - Emission Points Requiring Control (new)

- all emission points requiring control for existing, plus:
  - board coolers
  - press predryers

Draft MACT Proposal-Compliance

- 90% reduction across control device of:
  - VOC, measured as total hydrocarbon
  - methanol
  - formaldehyde
- outlet concentration of 1 ppmv methanol or formaldehyde, or 20 ppmv THC
- emissions averaging
- lb/unit of production emission rate for inherently low-emitting emission points

Draft MACT Proposal - Emission Averaging Overview

- system of debits and credits
  - emission points not required to be controlled by MACT or other rule can be controlled, generating credits
  - emission points requiring control by MACT may be uncontrolled or under controlled, generating debits
- only emission points within the source category can average emissions

Draft MACT Proposal - Emission Averaging Overview *(continued)*

- 10% discount factor
- mass basis
- States can opt out
- more MRR
- new sources excluded
- no banking across compliance periods
- compliance period - probably a year

Draft MACT Proposal - Emission Averaging Overview *(continued)*

- interpollutant trading allowed if no increased risk
  - demonstrate no increased risk if trading among different pollutants
  - assume same pollutant trading results in no increased risk
- HAP for emissions averaging: acetaldehyde, acrolein, formaldehyde, methanol, phenol, propionaldehyde

Draft MACT Proposal - Engineering Costs

- total capital investment > $450 million
- total annual cost > $100 million
- cost effectiveness between $10,000/ton and $20,000/ton HAP
- note: these are nationwide costs to the industry

Schedule

- OMB package -- end of August
- proposal package signed -- December
- public comment period -- 60 days
- promulgation package signed -- February 2002
- compliance date - three years after final rule published in Federal Register

Resources - Air Docket

Air and Radiation Docket and
Information Center (6102)
(Docket Number A-98-44)
Room M-1500
U.S. EPA
401 M Street SW
Washington, DC 20460

Resources - World Wide Web

- webpage
  - **http://www.epa.gov/ttn/uatw/plypart/plypart.html**
- signed rule
  - http://www.epa.gov/ttn/oarpg/new.html
  - TTN HELP line at (919) 541-5384
- AP-42
  - http://www.epa.gov/ttn/chief/ap42c10.html
  - have plans to add emission factors

Georgia-Pacific Corporation
133 Peachtree Street NE (30303)
P.O. Box 105605
Atlanta, Georgia 30348-5605
Telephone (404) 652-4000

July 14, 2000

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BUREAU OF AIR REGULATION

Mr. Joseph Kahn, P.E.
Florida Department of Environmental Protection
New Source Review Section
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: March 21, 2000 Modeling Comment Letter for the Proposed Georgia-Pacific Oriented Strandboard (OSB) Facility in Hosford, FL

Dear Mr. Kahn:

Georgia-Pacific Corporation (G-P) is pleased to provide the following additional modeling information to complete the January PSD air permit application. Each one of your comments is addressed in the following pages with individual responses and attachments (as noted). Please contact me (404/652-4293) or Paul Vasquez (application contact at 404/652-7327) with any additional questions. Thank you for your help on this important project.

Sincerely,

Mark J. Aguilar, P.E.
Senior Environmental Engineer
Georgia-Pacific Corporation
P.E. Number 52248

SEAL

Enclosures: Responses to Modeling Comments

cc:	P.J. Vasquez	GA030-17
	M.M. Vest	FL165 (Palatka)
	T.R. Wyles	GA030
	Gregg Worley	EPA Region IV
	John Bunyak	National Park Service
	Ed Middleswart	Florida DEP

From your letter of February 18.2000
Comment 1:

> *The application information states that fugitive sources are not required for evaluating PSD applicability. Rule 62-212.400(2)(b), F.A.C., provides for exemption of fugitive emissions from the determination of whether this facility is major for PSD, but Rule 62-212.400(2)(f), F.A.C., requires emissions be included in determining which pollutants equal or exceed the significant emission rate. The facility is major because of VOC potential emissions, and is significant for PM and PM10, CO and NOx. Please address the PSD requirements of Rule 62-212.400, F.A.C., for PM10 and VOC. Include an analysis of BACT for PM and PM10 visible emissions, and VOC and an air quality analysis, that take into account all quantifiable fugitive emissions from the proposed facility.*

Response:
Georgia-Pacific (G-P) has revised the modeling analysis to include fugitives. Attachment 2 presents tables for inputs and results of the revised modeling analysis.

Also note, that to include the predicted impacts of fugitive emissions, G-P made the following changes to the point source modeling data:

1. Repositioned the fence. Attachment 1 shows the position of the new fence.
2. Increased the stack heights for several stacks
3. Reduced the maximum 24-hour emission rate for EP_10 as follows:

    2.25 hours/day on sanderdust firing @ 8 lbs./hr
    21.75 hours/day on natural gas firing @ 0.61 lbs./hr
    24-hour emissions = 31.2 lbs./day
    31.2 / 24 = 1.3 lbs./hr

Enclosed in the package is a pair of diskettes with the computer files for the revised analysis

From your letter of March 21, 2000
Comment 1:

> *"Please provide information that shows that the site boundary used in the impact modeling will be land owned or controlled by Georgia-Pacific with a physical barrier to public access."*

Response:
Attachment 1 presents a map of the Georgia-Pacific (G-P) property with proposed sources, buildings and fenceline. A physical fence will be installed along the fenceline path on this drawing. If the fenceline path enters a submerged area (*i.e.*, wetland, or slough), then G-P will instead restrict access in these areas by using monitored security cameras and/or posted signs.

On February 18, 2000, FDEP requested G-P revise its modeling analysis to include fugitive emission sources. As a result, the position of the fence presented in the original application (shown in Figure 3-2) has been changed. Attachment 1 presents the fenceline position that corresponds the modeling analysis with fugitive sources.

Comment 2:

Please reevaluate the emission inventory for competing NO_x and PM_{10} sources to examine the possibility of including sources that are located more than 50 km from the Significant Impact Area (SIA). The current emission inventory disregards sources beyond this distance without examining the magnitude of their emissions. The 20D Rule may be used to prove the insignificance of these sources if they are not located in a close proximity to one another.

Response:

G-P included all sources within 100 km of the facility in consideration of competing sources. G-P analyzed competing sources for the NAAQS analysis with the 20D method. Attachment 2 presents revised table for competing sources.

Comment 3:

Please combine the Englehard emission sources into 5 to 10 representative sources, instead of combining them into one single source. This should be done by considering the similarity of source parameters such as location, stack height, exit temperature, and diameter.

Response:

G-P merged the Englehard sources into 20 discrete modeling sources. Attachment 2 presents the merge calculations.

Comment 4:

Please update and provide the emission inventory used for the Class I PSD cumulative assessment. Because emission sources around the Class I areas are of concern in this assessment, the class I emission inventory may include additional sources not contained in the Class II PSD assessment.

Response:

G-P has reviewed the Class I PSD cumulative assessment for PM10. During the week of July 10, 2000, FDEP and G-P discussed the data and determined that the inventory is complete.

Comment 5:

Please reevaluate 24-hour PM_{10} impacts by using the current compliance standard. The current 24-hour PM_{10} compliance standard is the highest 6^{th} highest 24-hour value at any receptor when a 5-year data record is used.

Response:

G-P assessed the National Ambient Air Quality Analysis (NAAQS) using the highest of the individual high-second-high results for each of 5 years. While this approach is more conservative than using the highest 6^{th} highest, G-P has completed the revised NAAQS (to include fugitives) with this methodology. G-P continues to use the highest of the individual high-second-high results for each of 5 years for assessment of PSD Class II increments. Attachment 2 presents these result tables.

Comment 6:

Please evaluate visibility impairment in the SIA. The assessment of visibility impairment (coherent plume) is not limited to Class I areas. This assessment should be performed in the impact area with particular emphasis at locations of sensitive receptors e.g., scenic vistas, nearby airports, etc.

Response:
G-P's revised analysis predicted the significant impact distances are 0, 7, and 13 km for CO, NOx, and PM10, respectively. G-P has reviewed maps of these areas and found no occurrences of state parks, public areas along waterways, or airports. Because there are not sensitive receptors within the significant impact distances, G-P did not perform a plume blight analysis.

Comment 7:

The assessment of visibility at St. Marks NWA used the high second-highest modeled concentration. The proper value to use for this assessment is the highest modeled concentration. Please use the highest modeled concentration when you conduct the refined regional haze analysis for the St. marks NWA. The second-highest modeled concentration may be used in PSD and NAAQS analyses only.

Response:
G-P has prepared a revised Class I Area visibility analysis. The demonstration of compliance is based on the maximum concentrations. The refined visibility analysis and results was sent to FDEP on July 12, 2000.

Comment 8:

Although the PSD Class II increment consuming sources (Table 9) are a subset of the complete NAAQS emission inventory (Tables 5 and 8), differences are noted in some of the emission rates and stack parameters for the PSD emission sources. Please provide the reason for these differences.

Response:

Tables 9, 5, and 8 of the January 2000 application contain modeling data using FDEP information verbatim. In 1999, Mr. Cleave Holladay sent G-P ISCST3 input files for NOx and PM10 including both short-term and long-term average emission rates and modeling parameters. G-P has no additional information beyond this dataset provided by FDEP. G-P does recognize that the competing sources, while there are differences in emission rates and stack parameters for long and short-term averaging times, are verbatim to analyses accepted by FDEP recently.

Comment 9:

Please utilize a grid that has a 100-meter resolution around the maximum predicted concentration for all SIA, PSD increment, and NAAQS modeling.

Response:
The revised analysis applied a 100-meter resolution grid for the maximum impact, PSD Class II Increment, and NAAQS modeling analyses. The PSD Class I Area receptors are spaced at 100 meters for the analysis.

Attachment 1
G-P Hosford OSB Plant Fence Location Map

Attachment 2
Revised Report Tables

Table 1a. Point Source Stack Parameters for Emission Sources at Proposed G-P Plant, Hosford							
		Stack Parameters					
		Source Location (m) [a]		Stack Height	Stack Exit Temp	Stack Exit Velocity	Stack Diameter
Model ID	Description	X	y	(ft)	F	(m/s)	(in)
EP-1A	Dryer RTO Stack A	-98.3	-84.3	130	259.0	15.31	102
EP-1B	Dryer RTO Stack B	0	0	130	259.0	15.31	102
EP-2	Press Vent RTO Stack	-167	0.4	100	154.0	18.46	86
EP-3	Screen Fines/Saw Trim Baghouse CP-003	-36.1	8.8	132	70.0	15.97	28
EP-4	Saw Trim/Finishing Line Baghouse CP-001	-272.7	-109.1	100	70.0	15.09	44
EP-5	Mat Reject/Flying Saw Baghouse CP-005	-90.8	-39.7	120	70.0	18.48	48
EP-6	Specialty Saw/Sander Baghouse 1 CP-006-1	-269.7	-106.5	90	70.0	15.05	40
EP-7	Fuel Handling System Baghouse CP-006-2	-43.9	5.7	75	70.0	0.01[b]	10
EP-8	Forming Bins Baghouse CP-002	-93.9	-55.3	105	70.0	22.91	30
EP-9	Hammermill/Dry Fuel System Baghouse	-34	10.3	132	70.0	15.22	30
EP-10	Thermal Oil Heating System ESP	-129.5	16.5	138	700.0	6.35	66
PDBARK1	Debarker #1[c]	34.3	36.9	28	-459.67[c]	0.001[c]	3.97e-2[c]
PDBARK2	Debarker #2[c]	40.3	43.3	28	-459.67[c]	0.001[c]	3.97e-2[c]
PDBARK3	Debarker #3[c]	46.4	48.9	28	-459.67[c]	0.001[c]	3.97e-2[c]
PSB1	Paint Spray Booth Stack 1	-268	-145.6	35	70	0.01[b]	8.5
PSB2	Paint Spray Booth Stack 2	-266	-144.3	35	70	0.01[b]	8.5
PSB3	Paint Spray Booth Stack 3	-264.3	-142.5	35	70	0.01[b]	8.5

Notes:

[a] Source Locations are with respect to the Dryer RTO Stack B in a true north coordinate system.

[b] Source has a raincap, exit velocity set equal to 0.01 m/s.

[c] Source is a "virtual" point source. Temperature is set to 0 K so that the model will not perform thermal plume calculations. Velocity is set to 0.001 m/s so that the model will calculate momentum bouyancy to the plume. Stack diameter is set to 0.001m.

Table 1b. Volume Source Parameters for Emission Sources at Proposed G-P Plant, Hosford							
		Stack Parameters					
		Source Location (m) [a]		Release Height	Initial Lateral Dimension	Initial Vertical Dimension	
Model ID	Description	X	y	(m)	(m)	(m)	
BARKPILE	Bark Pile	30.5	121.9	2.286	7.0884	1.0633	
BARKHOG	Bark Hog	24.4	100.6	3.9116	0.2835	0.4726	
TP1	Transfer Point 1	25.6	46	4.8768	0.2127	0.2127	
TP2	Transfer Point 2	30.5	51.8	4.8768	0.2127	0.2127	
TP3	Transfer Point 3	37	57	4.8768	0.2127	0.2127	
TP4	Transfer Point 4	54.9	73.2	7.62	0.2127	0.2127	
TP5	Transfer Point 5	24.4	100.6	7.62	0.2127	0.2127	
TP6	Transfer Point 6	12.2	118.9	7.62	0.2127	0.2127	
TP7	Transfer Point 7	30.5	121.9	7.62	0.2127	0.2127	
ROAD2	Road Segment	-275.7	-442	3.66	18.34	1.7	
ROAD4	Road Segment	-292.2	-406.1	3.66	18.34	1.7	
ROAD5	Road Segment	-307.7	-370.6	3.66	18.34	1.7	
ROAD7	Road Segment	-318.8	-336.4	3.66	18.34	1.7	
ROAD9	Road Segment	-289.7	-329.4	3.66	18.34	1.7	
ROAD10	Road Segment	-279.1	-286.2	3.66	18.34	1.7	
ROAD12	Road Segment	-269.2	-250.4	3.66	18.34	1.7	
ROAD13	Road Segment	-239.1	-223.5	3.66	18.34	1.7	
ROAD14	Road Segment	-210.6	-197	3.66	18.34	1.7	
ROAD16	Road Segment	-179.4	-171.9	3.66	18.34	1.7	
ROAD17	Road Segment	-150.2	-144.5	3.66	18.34	1.7	
ROAD18	Road Segment	-120.4	-117.8	3.66	18.34	1.7	
ROAD21	Road Segment	-83.8	-103.3	3.66	18.34	1.7	
ROAD23	Road Segment	-46.2	-91	3.66	18.34	1.7	
ROAD24	Road Segment	-11.8	-71.2	3.66	18.34	1.7	
ROAD25	Road Segment	20.24	-48.21	3.66	18.34	1.7	
ROAD26	Road Segment	54.9	-64.7	3.66	18.34	1.7	
ROAD28	Road Segment	93.4	-60.5	3.66	18.34	1.7	
ROAD29	Road Segment	122.5	-33	3.66	18.34	1.7	
ROAD32	Road Segment	126.3	6.5	3.66	18.34	1.7	
ROAD34	Road Segment	112.4	45	3.66	18.34	1.7	
ROAD35	Road Segment	91.5	78	3.66	18.34	1.7	
ROAD36	Road Segment	76	115.1	3.66	18.34	1.7	
ROAD38	Road Segment	50.1	146.1	3.66	18.34	1.7	
ROAD39	Road Segment	15.2	146.3	3.66	18.34	1.7	

ROAD41	Road Segment	-15.3	124	3.66	18.34	1.7
ROAD42	Road Segment	-47.5	98.3	3.66	18.34	1.7
ROAD43	Road Segment	-76.1	72.3	3.66	18.34	1.7
ROAD45	Road Segment	-115.6	57	3.66	18.34	1.7
ROAD47	Road Segment	-153.1	44.3	3.66	18.34	1.7
ROAD49	Road Segment	-182.6	16.3	3.66	18.34	1.7
ROAD50	Road Segment	-205.53	-14.03	3.66	18.34	1.7
ROAD52	Road Segment	-233.6	-41.5	3.66	18.34	1.7
ROAD54	Road Segment	-263	-71.3	3.66	18.34	1.7
ROAD56	Road Segment	-286.6	-100.7	3.66	18.34	1.7
ROAD57	Road Segment	-312.7	-128.7	3.66	18.34	1.7
ROAD53	Road Segment	-344.9	-155.9	3.66	18.34	1.7
ROAD62	Road Segment	-371.9	-230.1	3.66	18.34	1.7
ROAD64	Road Segment	-371.3	-190.9	3.66	18.34	1.7
ROAD69	Road Segment	-354.6	-265.9	3.66	18.34	1.7
ROAD70	Road Segment	-336.5	-301	3.66	18.34	1.7
ROAD72	Road Segment	-258.5	-479	3.66	18.34	1.7

Notes:

[a] Source Locations are with respect to the Dryer RTO Stack B in a true north coordinate system.

[b] Source has a raincap, exit velocity set equal to 0.01 m/s.

[c] Source is a "virtual" point source. Temperature is set to 0 K so that the model will not perform thermal plume calculations. Velocity is set to 0.001 m/s so that the model will calculate momentum bouyancy to the plume. Stack diameter is set to 0.001m.

Table 2. Emission Rates for Sources at Proposed G-P Plant, Hosford				
		Proposed Facility-Wide Emissions		
Model ID	Description	PM_{10} (g/s)	CO (g/s)	NO_x (g/s)
EP-1A	Dryer RTO Stack A	4.69	2.12	4.62
EP-1B	Dryer RTO Stack B	4.69	2.12	4.62
EP-2	Press Vent RTO Stack	0.36	0.91	1.35
EP-3	Screen Fines/Saw Trim Baghouse CP-003	0.26	---	---
EP-4	Saw Trim/Finishing Line Baghouse CP-001	0.166	---	---
EP-5	Mat Reject/Flying Saw Baghouse CP-005	0.246	---	---
EP-6	Specialty Saw/Sander Baghouse 1 CP-006-1	0.27	---	---
EP-7	Fuel System Baghouse 2 CP-006-2	0.043	---	---
EP-8	Forming Bins Baghouse CP-002	0.239	---	---
EP-9	Hammermill/Dry Fuel System Baghouse	0.26	---	---
EP-10	Thermal Oil Heating System ESP	0.163	1.57	2.02
PDBARK1	Debarker #1	0.047		
PDBARK2	Debarker #2	0		
PDBARK3	Debarker #3	0.047		
PSB1	Paint Spray Booth Stack 1	0.00176		
PSB2	Paint Spray Booth Stack 2	0.00176		
PSB3	Paint Spray Booth Stack 3	0.00176		
BARKPILE	Bark Pile	0.0189		
BARKHOG	Bark Hog	0.00189		
TP1	Transfer Point 1	2.268E-6		
TP2	Transfer Point 2	2.268E-6		
TP3	Transfer Point 3	2.268E-6		
TP4	Transfer Point 4	6.93E-6		
TP5	Transfer Point 5	6.93E-6		
TP6	Transfer Point 6	6.93E-6		
TP7	Transfer Point 7	6.93E-6		
ROADS	Total Plant Road Emissions	0.2199		

Table 4. PM_{10} Competing Sources Considered in the NAAQS Analysis, G-P Hosford

Facility ID Number	Facility Name	UTM Coordinates East (km)	UTM Coordinates North (km)	Location Relative to G-P Hosford X (m)	Location Relative to G-P Hosford Y (m)	Dist. (km)ª	Facility Wide Data Emission Rate (tpy)	Facility Wide Data Threshold "Q"	Include in Modeling Analysis
390029	Station 14	719.9	3377.4	6400	7900	10.2	1.9	-57	Yes
770009	Timber Energy Resources	709.4	3358.1	-4100	-11400	12.1	48.4	-18	Yes
390032	C. W. Roberts Contracting Inc.	726.5	3371.4	13000	1900	13.1	2.1	3	No
390025	Florida Rock Industries, Inc.	728.4	3385.4	14900	15900	21.8	28.4	176	No
390026	Florida Rock Industries, Inc.	728.4	3385.4	14900	15900	21.8	28.4	176	No
390030	Harborlite Corporation	729.8	3385.2	16300	15700	22.6	27.9	193	No
390006	Higdon Furniture Co	729.7	3386.5	16200	17000	23.5	11	210	No
390007	Pat Higdon Industries	729.9	3386.5	16400	17000	23.6	5	212	No
390020	Mactavish Furniture Industries	730.6	3385.8	17100	16300	23.6	13.3	212	No
390033	Sasser Morgan-Mcclellan Funeral Home	732.6	3386.1	19100	16600	25.3	2.6	246	No
770007	North Florida Lumber	689.54	3358.88	-23960	-10620	26.2	83.3	264	No
390005	Engelhard Corporation	732.6	3387.5	19100	18000	26.2	301	265	Yes
630014	Scholz Plant	702.4	3395.8	-11100	26300	28.5	707	311	Yes
390022	Byrd Landfill	737.6	3385.6	24100	16100	29.0	47.5	320	No
130007	Blountstown Concrete Plant	684.43	3370.28	-29070	780	29.1	0.9	322	No
390004	Florida State Hospital – Chattahoochee	707.6	3399.2	-5900	29700	30.3	5.7	346	No
390034	Chattahoochee Sand And Gravel	703.08	3398.09	-10420	28590	30.4	15	349	No
630044	Apalachee Correctional Institution	703.04	3399.32	-10460	29820	31.6	1.4	372	No
730003	Arvah B.Hopkins Generating Station	749.53	3371.7	36030	2200	36.1	1767.3	462	Yes
730040	Mitchell Brothers, Inc.	752	3370.9	38500	1400	38.5	55.8	511	No
7770014	Peavy And Son Construction Company	742.4	3395.2	28900	25700	38.7	22.2	513	No
730056	General Dynamics	754	3374.4	40500	4900	40.8	10	556	No
730068	Fairchild Cremation Services, Inc.	754.2	3373.5	40700	4000	40.9	0.3	558	No
730012	Sonas Systems	754.5	3370.4	41000	900	41.0	79.8	560	No
390009	Havana Mills	747.1	3394.3	33600	24800	41.8	260	575	No
730052	Terminal Service Company	755.2	3373.1	41700	3600	41.9	0.2	577	No
730072	U.S. Marine	754.98	3379.1	41480	9600	42.6	14.4	592	No
630028	Marianna Sawmill	683.3	3400.1	-30200	30600	43.0	115.2	600	No
730057	Talla - Comm Industries Inc.	756.6	3367.3	43100	-2200	43.2	10	603	No
730065	National Linen Service	759	3368.3	45500	-1200	45.5	1.9	650	No
730046	Florida Rock Industry	759.1	3367.9	45600	-1600	45.6	0.8	653	No
630046	Dolomite Inc.	673.92	3392.93	-39580	23430	46.0	0.3	660	No
730069	Fl. Mining & Materials Concrete	759.6	3369.9	46100	400	46.1	0.4	662	No
7770255	Southern Concrete And Construction	759.68	3363.26	46180	-6240	46.6	0.7	672	No
730009	Physical Plant	760.5	3368.9	47000	-600	47.0	49.5	680	No
730062	Department Of Management Services	760.9	3370.2	47400	700	47.4	0.2	688	No
730066	Fl. Mining & Materials Concrete	760.8	3366.1	47300	-3400	47.4	10	688	No
730060	Mcneill Company Inc.	761.7	3364.6	48200	-4900	48.4	39.3	709	No
730030	Sikes Industries, Inc.	762.4	3369.6	48900	100	48.9	4.4	718	No
7770064	Woodville Plant	762.8	3361.6	49300	-7900	49.9	30.9	739	No
630035	Plant #2	677	3404.5	-36500	35000	50.6	40.1	751	No
10TLH390007	North Florida Lumber	693.9	3322.4	-19600	-47100	51.0	59	760	No
730042	Culley & Sons Funeral Home	765.2	3372.5	51700	3000	51.8	0.4	776	No
630052	Concrete Plant #2	672.31	3401.25	-41190	31750	52.0	49	780	No
7775064	Anderson Columbia	672.12	3401.19	-41380	31690	52.1	8	782	No
7770059	Anderson Columbia Co., Inc	672.1	3401.2	-41400	31700	52.1	8.6	783	No
730034	Mitchell Brothers, Inc.	766.2	3372.1	52700	2600	52.8	14.8	795	No
730059	Fl. Mining & Materials Concrete	766.6	3372.2	53100	2700	53.2	10	803	No
13-087-0002	Imc Agribusiness Inc.	729.1	3421	15600	51500	53.8	219	816	No
13-087-0006	Floyd Bros. Asphalt Co.	726.3	3424.2	12800	54700	56.2	30	864	No
630024	Marianna Concrete Plant	670	3406	-43500	36500	56.8	1.1	876	No
450008	Eagle Recycling, Inc.	669.14	3333.88	-44360	-35620	56.9	16.8	878	No
630012	Lehigh Furniture	670.5	3406.9	-43000	37400	57.0	183.8	880	No
630038	Alliance Laundry Systems Llc	674.4	3412.8	-39100	43300	58.3	11	907	No

1290007	L. B. Brooks	749.5	3322.6	36000	-46900	59.1	10	922	No
630002	Baxter Asphalt & Concrete	666.7	3406.9	-46800	37400	59.9	43	938	No
1290003	Primex Technologies	767.6	3342.2	54100	-27300	60.6	62.1	952	No
630041	Golden Peanut Company	675 2	3416 9	-38300	47400	60 9	40 2	959	No
1290002	St Marks Refinery,Inc.	769	3340.1	55500	-29400	62.8	56.7	996	No
1290001	Tallahassee City Purdom Station	769 5	3339 97	56000	-29530	63.3	689	1006	No
630039	Clover Leaf Gin, Incorporated	670 3	3416 3	-43200	46800	63.7	49.3	1014	No
1290005	St. Marks Terminal	769.3	3338.4	55800	-31100	63.9	5 6	1018	No
0630031	WHITE CONSTRUCTION COMPANY	654.2	3403.5	-59300	34000	68 4	100	1107	No
630010	Register Meat Co	656.1	3407 9	-57400	38400	69.1	0	1121	No
0630040	GOLDEN PEANUT COMPANY	655.1	3407.7	-58400	38200	69.8	100	1136	No
13-087-0014	Georgia Dept. Of Trans.	717.4	3441.1	3900	71600	71.7	3	1174	No
0650004	FLORIDA ROCK INDUSTRIES, INC.	785.5	3376	72000	6500	72.3	100	1186	No
0050031	Bay Energy	644.0	3348.9	-69500	-20600	72.5	59	1190	No
7770049	WHITE CONSTRUCTION COMPANY, INC.	657.8	3417.2	-55700	47700	73.3	100	1207	No
7775029	ANDERSON COLUMBIA CO., INC.	656.12	3418.74	-57380	49240	75.6	100	1252	No
0050038	Triangle Construction	638.8	3347.0	-74700	-22500	78.0	12	1300	No
0450001	Premier Services Corporation	664.7	3302.8	-48800	-66700	82.6	345	1393	No
630045	Waste Management Inc. Of Florida	650.5	3423 1	-63000	53600	82.7	98.6	1394	No
0050008	Gulf Asphalt	634.9	3343.7	-78600	-25800	82.7	44	1395	No
630023	Gold Kist	653.2	3426.6	-60300	57100	83.0	18.1	1401	No
10PCY030046	Argus Service	634.8	3341.2	-78700	-28300	83.6	2	1413	No
0450002	Sylvachem	663.4	3299.6	-50100	-69900	86.0	71	1460	No
0450005	Florida Coast Paper, Port St. joe	662.8	3299.0	-50700	-70500	86.8	1,879	1477	Yes
	GP Cedar Springs	681.2	3450.2	-32300	80700	86 9	2,000	1478	Yes
0050001	Arizona chemical	633.1	3335.4	-80400	-34100	87.3	153	1487	No
13-099-0008	Peridot Chemical	681.4	3451	-32100	81500	87.6	1.9	1492	No
	Stone Container Panama City	632.8	3335.1	-80695	-34408.97	87.7	1,924	1494	Yes
0050005	Florida Asphalt Paving	631.4	3338.3	-82100	-31200	87.8	23	1497	No
10PCY030051	Humane Society of Bay County	630.7	3338 8	-82800	-30700	88.3	3	1506	No
10PCY030040	Allied-Signal	627.5	3346.4	-86000	-23100	89.0	132	1521	No
0050014	Gulf Power	625.2	3349.1	-88300	-20400	90.6	1,814	1553	Yes
630011	U.S. Forest Industries, Inc.	641	3425.9	-72500	56400	91.9	0	1577	No
10PCY230003	Florida Power Corporation	664.4	3291.1	-49100	-78400	92.5	6	1590	No
1330002	Florida Asphalt Paving Company	624.4	3399.8	-89100	30300	94 1	44	1622	No

Notes:

Sources within GP's Significant Impact Area are automatically included in the modeling analysis.

* Facilities greater than 100 km from GP were removed from the analysis

Table 5. Summary of Modeling Parameters for PM_{10} Competing Sources

Facility ID	Facility Name/ Stack Description	Model ID	PM_{10} Emission Rate g/s	Stack Height (m)	Exit Temperature (F)	Exit Velocity (m/s)	Stack Diameter (inches)
0390005	Englehard	0390005A	5.00E-03	27.13	80.01	6.21	5.91
0390005	Englehard	0390005B	0.03	21.34	80.01	0.01	9.45
0390005	Englehard	0390005C	0.03	26.82	80.01	7.07	9.45
0390005	Englehard	0390005D	2.10E-02	27.13	80.01	6.14	11.81
0390005	Englehard	0390005E	4.50E-02	10 36	80.01	1 62	24.02
0390005	Englehard	0390005F	0.126	21 64	80.01	11.82	9.45
0390005	Englehard	0390005G	5.00E-02	18.29	80.01	11.32	11.81
0390005	Englehard	0390005H	0.048	20.73	80.01	0.01	9.45
0390005	Englehard	0390005I	0.113	16.15	80.01	13.48	14.57
0390005	Englehard	0390005J	0.078	17.68	80.01	0.01	15.75
0390005	Englehard	0390005K	0 476	16.15	80.01	15.72	14.57
0390005	Englehard	0390005L	0 412	15.24	80 01	33.24	14.57
0390005	Englehard	0390005M	1.318	12.19	80 01	15.01	29.92
0390005	Englehard	0390005N	0.794	24.99	80.01	32.27	25.20
0390005	Englehard	0390005O	0.882	18.59	70.00	10 20	61.02
0390005	Englehard	0390005P	0.504	25.60	80.01	19.16	53.94
0390005	Englehard	0390005Q	0.554	30 48	132.01	17.16	45.67
0390005	Englehard	0390005R	0.529	30.48	132.01	20.18	29.92
0390005	Englehard	0390005S	1.763999	18.59	199.99	10.20	61.02
0390005	Englehard	0390005T	1.184	28.96	225.00	18.06	77.95
0390029	Station 14	0390029A	1.01E-02	15.24	550.00	52.39	16.80
0390029	Station 14	0390029B	4.41E-02	8.60	600.53	36.60	17.32
0390032	CW Roberts	0390032A	3.78E-02	12.50	250.00	17.37	50.39
0390032	CW Roberts	0390032B	1.94E-02	4.30	500.09	4.60	7.87
0930014	Scholz	0630014A	7.396076	45.72	330.01	12.19	162.00
0930014	Scholz	0630014B	7.396076	45.72	330.01	12.19	162.00
0730003	Hopkins	0730003A	11.37761	67.06	260.01	11.95	132.00
0730003	Hopkins	0730003B	0 3502741	8.84	802.00	34.87	110.40
0730003	Hopkins	0730003C	0.5720304	9.14	874 00	21.15	176.40
0730003	Hopkins	0730003D	31.49947	76.20	219.99	21.00	168.00
0770009	Timber Energy Resources	0770009A	1.448976	24.69	370.00	12.19	86.04
129001	Purdom	UNIT7	0.25	54 90	299.93	14 44	107.87
129001	Purdom	GT2	0.01	11.60	879.53	25.56	120.08
129001	Purdom	UNIT8	1.14	60.97	200.93	24.24	196.85
129001	Purdom	COOLT	0.3	13.40	89.33	7.09	396.85
129001	Purdom	AUXBOIL	6.75E-03	9.20	350.33	6.47	24.02
	G-P Cedar Springs, GA - Lime Kiln W -Survey	L601	2.519944	24.99	178.61	9.67	72.05
	G-P Cedar Springs, GA - Lime Kiln East -Survey	L600	2.519944	24.99	178.61	9.67	72.05
	G-P Cedar Springs, GA - Lime Silo Stack	L6367	1.474167	14.57	68.00	4.57	31.89
	G-P Cedar Springs, GA - NSSC Blow Tank	S200	7.56E-03	28.50	68.00	6.28	53.94
	G-P Cedar Springs, GA - Recovery Boiler 1.2 Stack	RB12	8.895403	61.00	374.00	27.60	144.09
	G-P Cedar Springs, GA - REJECTS CHIPPER #1 CYCLONE	W136	2.77E-03	10.67	68.00	0.01	35.83
	G-P Cedar Springs, GA - REJECTS CHIPPER #2 CYCLONE	W137	2.77E-03	9.14	68.00	0.01	35.83
	G-P Cedar Springs, GA - #1 CTS SYSTEM ADS CYCLONE	W007	1.26E-03	2.44	68.00	0.01	29.53
	G-P Cedar Springs, GA - #2 CTS SYSTEM ADS CYCLONE	W008	1.26E-03	2.44	68.00	0 01	29.53
	G-P Cedar Springs, GA - HW RECHIPPER CYCLONE	W009	1.26E-03	4 57	68.00	0.01	53.94
	G-P Cedar Springs, GA - NSSC CHIP SILO CYCLONE	W003	5.54E-03	27.89	68.00	0 01	53.94

	G-P Cedar Springs, GA - CTS CONVEYING CYCLONE	W002	7.31E-03	16 50	68.00	0 01	98.43
	G-P Cedar Springs, GA - RAIL CAR CHIP LOADOUT CYCLONE	WG19	1.54E-02	19.81	68 00	0 01	24.02
	G-P Cedar Springs, GA - SMELT DISSOLVING TANK	R404	0.7937824	58.22	153 41	7.79	59.84
	G-P Cedar Springs, GA - SMELT DISSOLVING TANK	R406	4 573698	75.60	145.31	7 03	72.05
	G-P Cedar Springs, GA - SMELT DISSOLVING TANK	R405	0 7937824	58.22	158.63	7.86	59.84
	G-P Cedar Springs, GA - RECOVERY BOILER 3 N	R402N	2 960935	75.30	410 00	13.64	107 87
	G-P Cedar Springs, GA - RECOVERY BOILER #3 S	R402S	2.960935	75.30	421.00	13.64	107.87
	G-P Cedar Springs, GA - Power Boiler 2 Future	U500F	28.65177	106.68	146.39	9.56	168.11
	G-P Cedar Springs, GA - Power Boiler 2 Future	U501F	28.65177	106.68	155.39	8 72	168.11
	Stone, Panama City	LKILN	3.690001	18.60	166.73	11.84	96.06
	Stone, Panama City	RB1	11	71.00	285.71	28.60	77.95
	Stone, Panama City	SDT1	3.35	71.00	165.65	5.25	72.05
	Stone, Panama City	RB2	11	71.00	309.65	28.50	77.95
	Stone, Panama City	SDT2	3.21	71.00	165.65	4 56	72.05
	Stone, Panama City	BB3	12.32	64.90	149.09	23.50	93.70
	Stone, Panama City	BB4	10 27	64.90	143.33	27.32	93.70
	Stone, Panama City	LSKR	0.4999999	17.10	199.67	13.08	34 65
0050014	Gulf Power	GULFPW12	48.00999	60.70	334.13	31.30	216.14
0050014	Gulf Power	GULFPWPK	4.16	10.10	1199.93	36.90	164 57
0450005	Smurfit, Port St. Joe	FCPLKSDT	14.29	30.50	202.01	2.25	93.70
0450005	Smurfit, Port St. Joe	FCPRB567	28.64	38.10	250.07	9.10	100.79
0450005	Smurfit, Port St. Joe	FCPPB9	11.11	51.80	157.91	10.33	168.11

Table 6 – Summary of Merge Stack Calculations for PM10 NNAQS Competing Sources									
Facility ID	Facility Name		Stack ID	PM_{10} Emission Rate (g/s)	Stack Height (m)	Stack Diameter (m)	Exit Temp (K)	Exit Velocity (m/s)	Computed M Factor
	ENGELHARD CORPORATION	A	41b	0.005	27.13	0.15	299.82	6.21	10020341
390005	ENGELHARD CORPORATION		48	0.014	19.81	0.24	299.82	0.00	1306
390005	ENGELHARD CORPORATION		53	0.016	21.34	0.24	299.82	0.00	1190
		B	53	0.030	21.34	0.24	299.82	0.00	
390005	ENGELHARD CORPORATION		41c	0.015	26.82	0.24	299.82	7.07	3762710
390005	ENGELHARD CORPORATION		41e	0.015	27.43	0.24	299.82	7.07	3848226
		C	41c	0.030	26.82	0.24	299.82	7.07	
390005	ENGELHARD CORPORATION	D	41a	0.021	27.13	0.30	299.82	6.14	2333168
390005	ENGELHARD CORPORATION		42	0.023	10.36	0.61	299.82	1.62	221528
390005	ENGELHARD CORPORATION		43	0.023	14.33	0.24	299.82	10.11	1913933
		E	42	0.045	10.36	0.61	299.82	1.62	
390005	ENGELHARD CORPORATION		44	0.025	21.64	0.24	299.82	11.82	3044497
390005	ENGELHARD CORPORATION		40	0.025	28.04	0.24	299.82	11.82	3944982
390005	ENGELHARD CORPORATION		22	0.025	30.48	0.24	299.82	14.15	5130968
390005	ENGELHARD CORPORATION		23	0.025	30.48	0.24	299.82	14.15	5130968
390005	ENGELHARD CORPORATION		24	0.025	30.48	0.24	302.59	14.15	5178506
		F	44	0.126	21.64	0.24	299.82	11.82	
390005	ENGELHARD CORPORATION	G	27	0.050	18.29	0.30	299.82	11.32	1231432
390005	ENGELHARD CORPORATION	H	38	0.048	20.73	0.24	299.82	0.00	396
390005	ENGELHARD CORPORATION		41d	0.050	27.43	0.30	299.82	15.20	2480457
390005	ENGELHARD CORPORATION		21	0.063	16.15	0.37	299.82	13.48	1035967
		I	21	0.113	16.15	0.37	299.82	13.48	
390005	ENGELHARD CORPORATION	J	37	0.078	17.68	0.40	299.82	0.00	207
390005	ENGELHARD CORPORATION		26	0.063	14.63	0.37	299.82	15.72	1094607
390005	ENGELHARD CORPORATION		17	0.063	27.43	0.37	299.82	15.72	2052387
390005	ENGELHARD CORPORATION		20	0.088	16.15	0.37	299.82	15.72	863306
390005	ENGELHARD CORPORATION		49	0.087	31.09	0.30	299.82	25.87	2773910
390005	ENGELHARD CORPORATION		50	0.087	31.09	0.30	299.82	25.87	2773910

390005	ENGELHARD CORPORATION		16	0.088	19.81	0.40	299.82	15.31	1031027
		K	20	0.476	16.15	0.37	299.82	15.72	
390005	ENGELHARD CORPORATION		32	0.126	28.96	0.46	299.82	17.25	1188430
390005	ENGELHARD CORPORATION		46	0.147	28.04	0.21	299.82	92.40	5269691
390005	ENGELHARD CORPORATION		13	0.139	15.24	0.37	299.82	33.24	1095791
		L	13	0.412	15.24	0.37	299.82	33.24	
390005	ENGELHARD CORPORATION		31	0.088	27.43	0.55	299.82	19.96	1861576
390005	ENGELHARD CORPORATION		25	0.214	14.63	0.67	299.82	16.04	328405
390005	ENGELHARD CORPORATION		39	0.260	34.44	0.46	299.82	34.50	1372433
390005	ENGELHARD CORPORATION		28	0.302	19.81	0.76	299.82	12.94	254105
390005	ENGELHARD CORPORATION		11	0.328	12.19	0.76	299.82	15.01	167439
390005	ENGELHARD CORPORATION		36	0.126	21.34	0.67	299.82	20.05	1017713
		M	11	1.318	12.19	0.76	299.82	15.01	
390005	ENGELHARD CORPORATION		18	0.491	24.99	0.64	299.82	32.27	492056
390005	ENGELHARD CORPORATION		35	0.302	30.48	0.91	299.82	21.56	651552
		N	18	0.794	24.99	0.64	299.82	32.27	
390005	ENGELHARD CORPORATION	O	19	0.882	18.59	1.55	294.26	10.20	63246
390005	ENGELHARD CORPORATION	P	33	0.504	25.60	1.37	299.82	19.16	291895
390005	ENGELHARD CORPORATION	Q	15	0.554	30.48	1.16	328.71	17.16	310036
390005	ENGELHARD CORPORATION	R	14	0.529	30.48	0.76	328.71	20.18	382066
390005	ENGELHARD CORPORATION		2	0.882	18.59	1.55	366.48	10.20	78769
390005	ENGELHARD CORPORATION		8	0.882	18.59	1.55	366.48	10.20	78769
		S	2	1.764	18.59	1.55	366.48	10.20	
390005	ENGELHARD CORPORATION		29	0.592	28.96	1.98	380.37	18.06	335981
390005	ENGELHARD CORPORATION		30	0.592	28.96	1.98	380.37	18.06	335981
		T	29	1.184	28.96	1.98	380.37	18.06	

Table 7. NO_2 Competing Sources Considered in the NAAQS Analysis, G-P Hosford

Facility ID Number	Facility Name	UTM Coordinates East (km)	UTM Coordinates North (km)	Location Relative to G-P Hosford X (m)	Location Relative to G-P Hosford Y (m)	Dist. (km)[a]	Emissions Threshold "Q"	Total Emission Rate (tpy)	Include In Modeling Analysis
390029	Florida Gas Transmission Co	719.9	3377.4	6400	7900	10.2	1185.2	63	Yes
770009	Timber Energy Resources	709.4	3358.1	-4100	-11400	12.1	140	102	Yes
390032	C. W. Roberts Contracting Inc.	726.5	3371.4	13000	1900	13.1	11.9	122	No
390030	Harborlite Corporation	729.8	3385.2	16300	15700	22.6	9 1	312	No
390006	Higdon Furniture Co	729.7	3386.5	16200	17000	23.5	1.8	330	No
390007	Pat Higdon Industries	729.9	3386.5	16400	17000	23.6	0 3	332	No
390020	Mactavish Furniture Ind.	730.6	3385.8	17100	16300	23.6	4.7	332	No
390033	Sasser Morgan-Mcclellan	732.6	3386.1	19100	16600	25.3	1	366	No
390005	Engelhard Corporation	732.6	3387.5	19100	18000	26.2	124	384	No
770007	North Florida Lumber	689.54	3358.88	-23960	-10620	26.2	73.9	384	No
630014	Gulf Power Co	702.4	3395.8	-11100	26300	28.5	1264.9	430	Yes
390022	City Of Quincy	737.6	3385.6	24100	16100	29	97.4	440	No
390004	Dept. Of Children + Families	707.6	3399.2	-5900	29700	30.3	62.1	466	No
630044	Apalachee Correctional	703.04	3399.32	-10460	29820	31.6	14	492	No
730003	City Of Tallahassee Hopkins	749.53	3371.7	36030	2200	36.1	3055 1	582	Yes
730040	Mitchell Brothers, Inc.	752	3370.9	38500	1400	38.5	99	630	No
7770014	Peavy And Son Construction	742.4	3395.2	28900	25700	38.7	53.1	634	No
730068	Fairchild Cremation Services.	754 2	3373.5	40700	4000	40.9	0.2	678	No
730012	Sonas Systems Of Florida	754 5	3370.4	41000	900	41	57.5	680	No
390009	Coastal Lumber Co	747.1	3394.3	33600	24800	41.8	62	696	No
630028	Louisiana Pacific Corp	683.3	3400.1	-30200	30600	43	10.3	720	No
730065	National Linen Service	759	3368.3	45500	-1200	45.5	5 4	770	No
730009	Florida A&M University	760.5	3368.9	47000	-600	47	98.1	800	No
730062	Department Of Mgmt Services	760.9	3370.2	47400	700	47.4	2.9	808	No
7770064	Peavy & Son Construction Co	762.8	3361.6	49300	-7900	49.9	83.4	858	No
630035	Anderson Columbia Company,	677	3404.5	-36500	35000	50.6	5.6	872	No
7770059	Anderson Columbia Co., Inc.	672.1	3401.2	-41400	31700	52.1	9.16	903	No
730034	Mitchell Brothers, Inc.	766.2	3372.1	52700	2600	52.8	26	916	No
13-087-0002	Imc Agribusiness Inc.	729.1	3421	15600	51500	53.8	657	936	No
13-087-0006	Floyd Bros. Asphalt Co.	726.3	3424.2	12800	54700	56.2	100	984	No
450008	Eagle Recycling, Inc.	669.14	3333.88	-44360	-35620	56.9	2.5	998	No
630012	Lehigh Furniture	670.5	3406.9	-43000	37400	57.0	0	1000	No
630002	Baxter Asphalt & Concrete	666.7	3406.9	-46800	37400	59.9	0	1058	No
630041	Golden Peanut Company	675.2	3416.9	-38300	47400	60.9	0.14	1079	No
1290001	Tallahassee City Purdom	769.5	3339.97	56000	-29530	63.3	2719.3	1126	Yes
0630031	WHITE CONSTRUCTION COMPANY	654.2	3403.5	-59300	34000	68.4	83	1227	No
630010	Register Meat Co	656.1	3407.9	-57400	38400	69.1	34.78	1241	No
630040	Golden Peanut Company	655.1	3407.7	-58400	38200	69.8	0	1256	No
0630040	GOLDEN PEANUT COMPANY	655.1	3407.7	-58400	38200	69.8	0.14	1256	No
13-087-0014	Georgia Dept. Of Trans.	717.4	3441.1	3900	71600	71.7	100	1294	No
0650004	FLORIDA ROCK INDUSTRIES, INC.	785.5	3376	72000	6500	72.3	10	1306	No
0050031	Bay County Energy Systems	644.0	3348.9	-69500	-20600	72.5	236	1310	No
7770049	WHITE CONSTRUCTION COMPANY, INC.	657.8	3417.2	-55700	47700	73 3	83	1327	No
7775029	ANDERSON COLUMBIA CO., INC.	656.12	3418.74	-57380	49240	75 6	10	1372	No
630045	Waste Management Inc. Of Florida	650 5	3423.1	-63000	53600	82.7	16.3	1514	No
0050008	G.A.C. Contractors	634.9	3343.7	-78600	-25800	82.7	13	1515	No
630023	Gold Kist	653.2	3426.6	-60300	57100	83.0	0	1521	No
NA	Georgia Tubing	684.9	3447.5	-28600	78000	83.1	0.03	1522	No
10PCY030046	Argus Service	634.8	3341.2	-78700	-28300	83.6	1	1533	No
0450002	Sylvachem	663.4	3299.6	-50100	-69900	86.0	201	1580	No
0450005	Smurfit, Port St. joe	662.8	3299.0	-50700	-70500	86.8	3,888	1597	Yes
	GP Cedar Springs	681.2	3450.2	-32300	80700	86.9	2,000	1598	Yes
0050001	Arizona chemical	633.1	3335.4	-80400	-34100	87.3	460	1607	No
	Stone Container Panama City	632.8	3335.1	-80695	-34408.97	87.7	2,361	1614	Yes
0050024	US Air Force - Tyndall	635.6	3326.8	-77900	-42700	88.8	19	1637	No
0050014	Gulf Power	625.2	3349.1	-88300	-20400	90.6	10,626	1673	Yes
630011	U.S. Forest Industries, Inc.	641	3425.9	-72500	56400	91 9	0	1697	No
10PCY230003	Florida Power Corporation	664.4	3291.1	-49100	-78400	92.5	85	1710	No

Notes:

Sources within GP's Significant Impact Area are automatically included in the modeling analysis.

[a] Facilities greater than 100 km from GP were removed from the analysis.

Table 8. Summary of Modeling Parameters for NO_2 Competing Sources

Facility ID	Facility Name/ Stack Description	Model ID	NO_2 Emission Rate g/s	Stack Height (m)	Exit Temperature (F)	Exit Velocity (m/s)	Stack Diameter (inches)
0390029	Florida Gas	0390029A	1 34	15.24	550 00	52 39	16 8
0390029	Florida Gas	0390029B	32.75999	8 60	600.53	36 60	17.3
0630014	Gulf Power	0630014A	58.95	45.72	330.00	12.19	162.0
0630014	Gulf Power	0630014B	58.95	45 72	330.00	12.19	162.0
0730003	Hopkins	0730003A	50.01	67.06	260.00	11.95	132.0
0730003	Hopkins	0730003B	6.46	8 84	802.00	34.87	110.4
0730003	Hopkins	0730003C	10.53	9.14	874 00	21.15	176.4
0730003	Hopkins	0730003D	94 5	76 20	220 00	21.00	168 0
0770009	Timber Energy	0770009A	4 2	24.69	370.00	12.19	86.0
1290001	PURDOM BLR 7	UNIT7	13.18	54.90	299.93	14.44	107.9
1290001	PURDOM GAS TURBINES	GT2	0.2100001	11.60	879.53	25.56	120 1
1290001	PURDOM AUX BOILER	AUXBOIL	0 00299	9.20	350.33	6 47	24 0
	G-P Cedar Springs, GA - Lime Kiln W -Survey	L601	8.101665	24 99	178.61	9 67	72.0
	G-P Cedar Springs, GA - Lime Kiln East -Survey	L600	8.101665	24 99	178.61	9.67	72 0
	G-P Cedar Springs, GA - Recovery Boiler 1,2 Stack	RB12	31.52467	61.00	374.00	27 60	144.1
	G-P Cedar Springs, GA - SMELT DISSOLVING TANK 1	R404	0.2141964	58 22	153.41	7.79	59.8
	G-P Cedar Springs, GA - SMELT DISSOLVING TANK 3	R406	0.2141964	75 60	145.31	7.03	72.0
	G-P Cedar Springs, GA - SMELT DISSOLVING TANK 2	R405	0.2645956	58.22	158.63	7.86	59.8
	G-P Cedar Springs, GA - RECOVERY BOILER 3N	R402N	24.39949	75.30	410 00	13.64	107.9
	G-P Cedar Springs, GA - RECOVERY BOILER #3 S	R402S	24.39949	75.30	421.00	13 64	107.9
	G-P Cedar Springs, GA - Power Boiler 2 Future	U500F	87.16534	106.68	146.39	9.56	168.1
	G-P Cedar Springs, GA - Power Boiler 2 Future	U501F	87.16534	106.68	155.39	8 72	168.1
	Stone Container, Panama City	LKILN	5.63	18.60	166.73	11.84	96.1
	Stone Container, Panama City	RB1	9.08	71 00	285.71	28.60	78.0
	Stone Container, Panama City	SDT1	0 2600001	71 00	165.65	5.25	72.0
	Stone Container, Panama City	RB2	9 08	71.00	309.65	28.50	78 0
	Stone Container, Panama City	SDT2	0.2600001	71.00	165.65	4 56	72.0
	Stone Container, Panama City	BB3	19.79	64.90	149.09	23.50	93.7
	Stone Container, Panama City	BB4	23.83001	64.90	143.33	27.32	93.7
0050014	Gulf Power	GULFPW12	257.9999	60.70	334.13	31.30	216.1
0050015	Gulf Power	GULFPWPK	47.67	10.10	1199.93	36.90	164.6
0450005	Smurfit, Port St. Joe	FCPLKSDT	23.28	30.50	202.01	2.25	93.7
0450005	Smurfit, Port St. Joe	FCPRB567	55.23	38.10	250.07	9.10	100.8
0450005	Smurfit, Port St. Joe	FCPPB9	33.34	51.80	157.91	10 33	168.1

Table 10. Significant Impact Analysis Results, PM_{10}

Averaging Period	Year	Modeled Concentration ($\mu g/m^3$)	Receptor Location [a]		Period Ending (YYMMDDHH)	Modeling Significance Level ($\mu g/m^3$)	Monitoring Significance Level ($\mu g/m^3$)	Maximum Distance to Significant Impact (km)
			Distance X (m)	Distance Y (m)				
Screening Analysis								
24-hour	1986	24.18	0.00	-592.00	86120324	5	10	12
	1987	27.43	-222.00	-542.60	87011224	5	10	8
	1988	25.31	-177.37	-552.50	88010824	5	10	13
	1989	31.65	536.80	309.70	89060924	5	10	8
	1990	23.21	-227.40	-567.20	90122424	5	10	7
Annual	1986	6.62	-222.00	-542.60	---	1	---	5
	1987	10.24	-222.00	-542.60	---	1	---	7
	1988	8.76	-222.00	-542.60	---	1	---	6
	1989	6.54	-222.00	-542.60	---	1	---	4
	1990	5.26	-222.00	-542.60	---	1	---	3.5
Refined Analysis								
24-hour	1989	31.65	536.80	309.70	89060924	5	10	--- ---
Annual	1987	10.24	-222.00	-542.60	---	1	---	--- ---

Note: YY= year, MM = Month, DD = Day, HH = Hour.
[a] Relative to Dryer RTO Stack B

Table 11. Significant Impact Analysis Results, NO_2							
Averaging Period	Year	Modeled Concentration [b] ($\mu g/m^3$)	Receptor Location [a]		Modeling Significance Level ($\mu g/m^3$)	Monitoring Significance Level ($\mu g/m^3$)	Maximum Distance to Significant Impact (km)
			Distance X (m)	Distance Y (m)			
Screening Analysis							
Annual	1986	1.61	-297.57	-1143.10	1	14	4
	1987	2.85	-297.57	-1143.10	1	14	7
	1988	2.48	-297.57	-1143.10	1	14	6
	1989	1.44	-138.92	787.85	1	14	3
	1990	1.43	-143.20	757.30	1	14	3
Refined Analysis							
Annual	1987	2.85	-297.57	-1143.10	1	14	---

[a] Relative to Dryer RTO Stack B
[b] Assumes full conversion of NO_x to NO_2.

Table 12 Significant Impact Analysis Results, CO							
Averaging Period	Year	Modeled Concentration ($\mu g/m^3$)	Receptor Location [a]		Period Ending (YYMMDDHH)	Modeling Significance Level ($\mu g/m^3$)	Monitoring Significance Level ($\mu g/m^3$)
			Distance X (m)	Distance Y (m)			
Screening Analysis							
1-hour	1986	36.55	-487.00	0.00	86091023	2000	---
	1987	38.50	-477.70	16.51	87032301	2000	---
	1988	37.55	-477.70	16.51	88060923	2000	---
	1989	44.56	-368.93	213.00	89053124	2000	---
	1990	39.73	-477.70	16.51	90052522	2000	---
8-hour	1986	18.13	-385.67	459.63	86120916	500	575
	1987	17.38	-779.42	450.00	87111708	500	575
	1988	18.29	-779.42	450.00	88050916	500	575
	1989	16.95	677.21	430.91	89061416	500	575
	1990	15.93	-206.31	506.81	90102216	500	575

Note: YY= year, MM = Month, DD = Day, HH = Hour.
[a] Relative to Dryer RTO Stack B

Table 13. NAAQS Modeling Results, PM_{10}						
Averaging Period	Year	Modeled Concentration (μg/m³)	Receptor Location [a]		Period Ending (YYMMDDHH)	NAAQS (μg/m³)
			Distance X (m)	Distance Y (m)		
Screening Analysis						
24-hour H6H	---	22.64	-222.00	-542.60	90122524	150
Annual	1986	6.94	-222.00	-542.60	---	50
	1987	10.55	-222.00	-542.60	---	50
	1988	9.11	-222.00	-542.60	---	50
	1989	6.93	-222.00	-542.60	---	50
	1990	5.62	-222.00	-542.60	---	50
Refined Analysis						
24-hour H6H	---	22.64	-222.00	-542.60	90122524	150
Annual	1987	10.55	-222.00	-542.60	---	50

Note: YY= year, MM = Month, DD = Day, HH = Hour, H6H= High, Sixth Highest
[a] Relative to Dryer RTO Stack B

Table 14. Total NAAQS Results (Modeled + Background), PM_{10}				
Averaging Period	Modeled Concentration (μg/m³)	Background Concentration (μg/m³)	Total Concentration (μg/m³)	NAAQS (μg/m³)
24-hour H6H	22.64	54	76.64	150
Annual	10.55	27	37.55	50

Note: H6H= High, Sixth Highest

Table 15. NAAQS Modeling Results, NO_2					
Averaging Period	Year	Modeled Concentration ($\mu g/m^3$)	Receptor Location [a]		NAAQS ($\mu g/m^3$)
			Distance X (m)	Distance Y (m)	
Screening Analysis					
Annual	1986	9.52	5362.31	4499.51	100
	1987	14.62	6062.18	3500	100
	1988	13.96	6062.18	3500	100
	1989	8.53	6062.18	3500	100
	1990	6.59	6062.18	3500	100
Refined Analysis					
Annual	1987	21.58	5862	5000	100
	1988	15.81	6062.18	4000	100

Note: YY= year, MM = Month, DD = Day, HH = Hour.
[a] Relative to Dryer RTO Stack B

Table 16. Total NAAQS Results (Modeled & Background), NO_2				
Averaging Period	Modeled Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Total Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)
Annual	21.58	16	37.58	100

Table 17. PSD Class II Increment Analysis, PM_{10}						
Averaging Period	Year	Modeled Concentration ($\mu g/m^3$)	Receptor Location [a]		Period Ending (YYMMDDHH)	PSD Increment ($\mu g/m^3$)
			Distance X (m)	Distance Y (m)		
Screening Analysis						
24-hour HSH	1986	20.62	-177.37	-552.50	86111324	30
	1987	24.33	-222.00	-542.60	87103024	30
	1988	23.00	-177.37	-552.50	88011024	30
	1989	29.41	468.49	236.66	89060924	30
	1990	20.33	-222.00	-542.60	90102424	30
Annual	1986	6.63	-222.00	-542.60	---	17
	1987	10.24	-222.00	-542.60	---	17
	1988	8.76	-222.00	-542.60	---	17
	1989	6.55	-222.00	-542.60	---	17
	1990	5.26	-222.00	-542.60	---	17
Refined Analysis						
24-hour HSH	1987	24.33	-222.00	-542.60	87103024	30
	1989	29.41	468.49	236.66	89060924	30
Annual	1987	10.24	-222.00	-542.60	---	17
	1989	6.55	-222.00	-542.60	---	17

Note: YY= year, MM = Month, DD = Day, HH = Hour, HSH = High, Second Highest
[a] Relative to RTO Stack B

Table 18. PSD Class II Increment Analysis, NO_2					
Averaging Period	Year	Modeled Concentration [b] ($\mu g/m^3$)	Receptor Location [a]		PSD Increment ($\mu g/m^3$)
			Distance X (m)	Distance Y (m)	
Screening Analysis					
Annual	1986	1.71	-297.57	-1143.10	25
	1987	2.94	-297.57	-1143.10	25
	1988	2.56	-297.57	-1143.10	25
	1989	1.51	-138.92	787.85	25
	1990	1.53	-143.20	757.30	25
Refined Analysis					
Annual	1987	2.94	-297.57	-1143.10	25

[a] Relative to RTO Stack B

[b] Assumes full conversion of NO_x to NO_2.

Table 19. Class I Increment Significant Impact Analysis, PM_{10} and NO_2					
Pollutant	Averaging Period	Year	Modeled Concentration ($\mu g/m^3$)	Period Ending (YYMMDDHH)	Screening Level [a] ($\mu g/m^3$)
NO_2	Annual	1986	0.045	---	0.1
		1987	0.032	---	0.1
		1988	0.035	---	0.1
		1989	0.063	---	0.1
		1990	0.053	---	0.1

Note: YY= year, MM = Month, DD = Day, HH = Hour.

[a] US EPA proposed screening levels for Class I areas.

Table 20. Class I Increment Analysis, PM_{10}					
Pollutant	Averaging Period	Year	Modeled Concentration ($\mu g/m^3$)	Period Ending (YYMMDDHH)	PSD Class I Increment ($\mu g/m^3$)
PM_{10}	24-hour HSH	1986	1.12	86113024	8
		1987	1.33	87090424	8
		1988	1.07	88010224	8
		1989	0.97	89011124	8
		1990	0.86	90041624	8
	Annual	1986	0.090	---	4
		1987	0.140	---	4
		1988	0.104	---	4
		1989	0.103	---	4
		1990	0.072	---	4

Note: YY= year, MM = Month, DD = Day, HH = Hour.

[a] US EPA proposed screening levels for Class I areas.

Georgia-Pacific Corporation
133 Peachtree Street NE (30303-1847)
P.O. Box 105605
Atlanta, Georgia 30348-5605
Telephone (404) 652-4000

July 12, 2000

RECEIVED
JUL 13 2000
BUREAU OF AIR REGULATION

Mr. Joseph Kahn, P.E.
Florida Department of Environmental Protection
New Source Review Section
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: Revised Regional Haze Analysis for the Proposed Georgia-Pacific Oriented Strandboard (OSB) Facility in Hosford, FL

Dear Mr. Kahn:

Georgia-Pacific Corporation (G-P) is pleased to provide the following additional information to complete the January PSD air permit application. The enclosure presents a revised regional haze analysis performed by Golder Associates. Please contact me (404/652-4293) or Steve Marks (regional haze modeling contact at 352/336-5600) with any additional modeling questions. Thank you for your help on this important project.

Sincerely,

Mark J. Aguilar, P.E.
Senior Environmental Engineer
Georgia-Pacific Corporation
P.E. Number 52248

SEAL

Enclosures: Regional Haze Modeling Report by Golder Associates

cc:	P.J. Vasquez	GA030-17
	M.M. Vest	FL165 (Palatka)
	T.R. Wyles	GA030 (without attachment)
	Gregg Worley	EPA Region IV
	John Bunyak	National Park Service
	Ed Middleswart	Florida DEP

Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

TRANSMITTAL LETTER

To:
Mr. Joseph Kahn, P.E.
FDEP - New Source Review Section
Tallahassee, FL

Date: 7/12/2000
Project No.: 0037506-0100

Sent by:

- ☐ Mail
- ☐ Air Freight
- ☐ Hand Carried
- ☐ UPS
- ☒ Federal Express

Per:

Quantity	Item	Description
1	Report	Georgia-Pacific Hosford Facility Revised Regional Haze Analysis

cc:
P.J. Vasquez, G-P Atlanta, GA
T.R. Wyles, G-P Atlanta, GA
G. Worley, EPA Atlanta, GA
M. Aguilar, G-P Atlanta, GA
M.M. Vest, G-P Palatka, FL
J. Bunyak, NPS Lakewood, CO
E. Middleswart, FDEP Pensacola, FL
S. Marks, Golder

REFINED REGIONAL HAZE ANALYSES
FOR THE PROPOSED
GEORGIA-PACIFIC ORIENTED
STRANDBOARD FACILITY
IN HOSFORD, FLORIDA

Prepared For:

Georgia-Pacific Corporation
133 Peachtree Street NE
Atlanta, Georgia 30303-1847

Prepared By:

Golder Associates Inc.
6241 NW 23rd Street, Suite 500
Gainesville, Florida 32653-1500

July 2000
0037506B/R1

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1.0 INTRODUCTION

The Georgia-Pacific Corporation (G-P) is proposing to construct an oriented strandboard facility near Hosford in the Florida panhandle. As part of the air impact evaluation for the proposed facility, the Florida Department of Environmental Projection (FDEP) has requested that an analysis of the proposed plant's affect on visibility be performed for the St. Marks National Wildlife Refuge (SMNWR). The SMNWR is a Prevention of Significant Deterioration (PSD) Class I area located in the eastern Florida panhandle located approximately 57 km southwest of the proposed facility site. Class I areas are afforded special environmental protection through the use of Air Quality Related Values (AQRVs). The AQRV of interest in this report is regional haze.

The regional haze analysis calculated a percent change in light extinction in accordance with the Interagency Workgroup on Air Quality Models (IWAQM) guidelines. The guidelines apply air dispersion model results for predicted maximum 24-hour sulfate (SO_4), nitrate (NO_3), and fine particulate matter (PM_{10}) concentrations and the use of conservative chemical equations for estimating ammonium sulfate ($(NH_4)_2SO_4$) and ammonium nitrate (NH_4NO_3) concentrations. The analysis then applies existing data from the FLM to calculate the visibility change.

This report is divided into three sections, including this introduction. Section 2.0 of this report discusses the analysis methodology and model inputs. Section 3.0 of this report presents the analysis results.

2.0 METHODOLOGY AND MODEL INPUTS

2.1 VISIBILITY NOMENCLATURE

Visibility is an AQRV for the SMNWR. Visibility can take the form of plume blight for nearby areas, or regional haze for long distances (e.g., distances beyond 50 km). Because all of the SMNWR lies beyond 50 km from the proposed G-P facility, the change in visibility is analyzed as regional haze at the SMNWR. Current regional haze guidelines characterize a change in visibility by either of the following methods:

1. Change in the visual range, defined as the greatest distance that a large dark object can be seen, or
2. Change in the light-extinction coefficient (b_{ext}).

The b_{ext} is the attenuation of light per unit distance due to the scattering and absorption by gases and particles in the atmosphere. A change in the extinction coefficient produces a perceived visual change that is measured by a visibility index called the deciview. The deciview (dv) is defined as:

$$dv = 10 \ln (1 + b_{exts} / b_{extb})$$

where: b_{exts} is the extinction coefficient calculated for the source, and
b_{extb} is the background extinction coefficient

A more common index that simple quantifies the percent change in visibility due to the operation of a source is calculated as:

$$\Delta\% = (bexts / b_{extsb}) \times 100$$

2.2 INTERAGENCY WORKGROUP ON AIR QUALITY MODELING (IWAQM) GUIDELINES

The CALPUFF air modeling analysis followed the recommendations contained in the *IWAQM Phase II Summary Report and Recommendations for Modeling Long Range Transport Impacts*, (EPA, 12/98). Table 2-1 summarizes the IWAQM Phase II recommendations.

Phase 1

Should Use Phase 2

Refined impacts are calculated as follows:

1. Obtain maximum 24-hour SO_4, NO_3, and PM_{10} impacts, in units of micrograms per cubic meter ($\mu g/m^3$).

2. Convert the SO_4 impact to $(NH_4)_2SO_4$ by the following formula:

   $(NH_4)_2SO_4$ (μg/m3) = SO_4 ($\mu g/m^3$) x molecular weight $(NH_4)_2SO_4$ /
   molecular weight SO_4

   $(NH_4)_2SO_4$ ($\mu g/m^3$) = SO_4 ($\mu g/m^3$) x 132/96 = SO_4 ($\mu g/m^3$) x 1.375

3. Convert the NO_3 impact to NH4NO3 by the following formula:

   NH_4NO_3 ($\mu g/m^3$) = NO_3 ($\mu g/m^3$) x molecular weight NH_4NO_3 /
   molecular weight NO_3

   NH_4NO_3 ($\mu g/m^3$) = NO_3 ($\mu g/m^3$) x 80/62 = NO_3 ($\mu g/m^3$) x 1.29

4. Compute bexts (extinction coefficient calculated for the source) with the following formula:

   $b_{exts} = 3 \times NH_4NO_3 \times f(RH) + 3 \times (NH_4)2SO_4 \times f(RH) + 3 \times PM_{10}$

5. Compute bextb (background extinction coefficient) using the background visual range (km) from the FLM with the following formula:

   $b_{extb} = 3.912 / \text{Visual range (km)}$

6. Compute the percent change in extinction coefficient in terms of a percent change of visibility:

   $\Delta\% = (b_{exts} / b_{extsb}) \times 100$

Based on the predicted SO_4, NO_3, and PM_{10} concentrations, the proposed plant's emissions are compared to a 5 percent change in light extinction of the background levels.

2.3 MODEL SELECTION

The California Puff (CALPUFF, Version 5.2) air model was used to model the proposed facility and assess visibility at the SMNWR. CALPUFF is a non-steady state Lagrangian Gaussian puff long-range transport (LRT) model that includes algorithms for building downwash effects as well as chemical transformations (important for visibility controlling pollutants), and wet/dry deposition. The CALMET model, a preprocessor to CALPUFF, is a diagnostic meteorological model that produces a three-dimensional field of wind and temperature and a two-dimensional field of other meteorological parameters. Simply, CALMET was designed to process raw meteorological, terrain, and land-use databases to be used in the air modeling analysis. The CALPUFF modeling system uses a number of preprocessor programs that extract data from large databases and converts the data into formats suitable for input to CALMET. The processed data produced from CALMET was input to CALPUFF to assess the pollutant specific impact. Both CALMET and CALPUFF were used in a manner that is recommended by the IWAQM Phase 2 Report.

2.4 CALPUFF MODEL SETTINGS

The CALPUFF settings contained in Table 2-2 were used for the Level II refined modeling analysis. A detailed listing of parameter values used are presented in Table A-1, Appendix A.

2.5 BUILDING WAKE EFFECTS

The CALPUFF analysis included the direction-specific building heights and projected widths to account for the effects of building-induced downwash on the proposed plant's 17 emission point sources. The building dimensions used in the CALPUFF model are identical to those processed for the Industrial Source Complex Short-Term (ISCST) model using the Building Profile Input Program (BPIP), Version 95086. The building data from the ISCST model were converted to CALPUFF model input format using the utility program ISC2PUF.

2.6 RECEPTOR LOCATIONS

The CALPUFF analysis used an array of receptors of sufficient density and extent to adequately predict the pattern of pollutant impacts at the SMNWR. Specifically, the array consisted of 125 receptors located along the boundary and within the Wilderness Area portion of SMNWR. Receptors were generally located within the area with a spacing of 1 km. The Wilderness Area at the SMNWR is located at two separate areas. To predict pollutant impacts at the larger eastern portion, 108 receptors were used along the boundary for the modeling analysis. The western portion of the Wilderness Area, which consists entirely of Thoms Island, was represented by 17 receptors. Table 2-3 includes the receptors used for the analysis. Because the SMNWR is flat and at sea level, all receptors were assigned an elevation of zero.

The St. Marks Wilderness Area receptor locations are shown in Figure 2-1 relative to the proposed G-P plant site location.

2.7 BACKGROUND VISUAL RANGES AND RELATIVE HUMIDITY FACTORS

The background visual range is based on data representative of the top 20-percentile air quality days. The background visual range for the SMNWR is 65 km and was provided by the FLM.

An average daily relative humidity factor was determined for each day that CALPUFF predicted a maximum 24-hour impact for each species: SO_4, NO_3, and PM_{10}. The daily average factor was computed by summing each hour's relative humidity factor for the 24-hour period, and dividing by 24. The hourly relative humidity factors used to determine each daily average were obtained from the document entitled Federal Land Managers' Air Quality Related Values Workgroup (FLAG), Draft Phase 1 Report (October, 1999).

2.8 METEOROLOGICAL DATA PROCESSING

The California Puff meteorological and geophysical data preprocessor (CALMET, Version 5) was used to develop the gridded parameter fields required for the refined regional haze modeling analysis. The follow sections discuss the specific data used and processed in the CALMET model.

2.8.1 CALMET SETTINGS

The CALMET settings contained in Table 2-4 were used for the refined modeling analysis. A summary of parameter values used is presented in Table A-2, Appendix A.

2.8.2 Modeling Domain

The modeling domain defines the boundary of plume simulation area. The modeling domain used for the analysis is in the shape of a rectangle extending approximately 475 km in the east-west (x) direction and 300 km in the north-south (y) direction. The southwest corner of the rectangle is the origin of the modeling domain and is located at 29.25 N degrees latitude and 81.5 W degrees longitude.

For the processing of meteorological and geophysical data, 95 grid cells were used in the x-direction and 60 grid cells were used in the y-direction. A grid resolution of 5 km was used. The air modeling analysis was performed with the UTM coordinate system. The modeling domain is outlined by the dashed orange rectangle in Figure 2-2.

2.8.3 Mesoscale Model – Generation 4 (MM4) Data

Pennsylvania State University in conjunction with the NCAR Assessment Laboratory developed the MM4 data, a prognostic wind field or "guess" field, for the United States (U.S.). The hourly meteorological variables used to create this data set (wind, temperature, dew point depression, and geopotential height for eight standard levels and up to 15 significant levels) are extensive and only allow for one data base set for the year 1990. The analysis used the MM4 data to initialize the CALMET wind field. The MM4 data have a horizontal spacing of 80 km and are used to simulate atmospheric variables within the modeling domain.

To apply the MM4 dataset to a regional modeling domain, such as the area that will incorporate G-P's proposed facility and the SMNWA, a sub-set domain was developed based on the MM4 data local coordinate system. In this coordinate system, the subset domain consisted of a 8 x 6- cell rectangle, spaced at 80 km, extending from MM4 coordinates (45,13) to (52,18). These data were processed to create a MM4.Dat file, which was input to the CALMET model. The location of the MM4 data grid is presented relative to the location of modeling domain area in Figure 2-2. The MM4 grid nodes are represented as green dots.

The MM4 data set used in the CALMET, although advanced, lacks the fine detail of specific temporal and spatial meteorological variables and geophysical data. These variables were processed into the appropriate format and introduced into the CALMET model through the additional data files obtained from the following sources.

2.8.4 Surface Data Stations and processing

The processed surface data includes the following eight primary weather stations that are located either within or just beyond the modeling domain. The seven surface stations include Jacksonville, Gainesville, Tallahassee, and Tampa in Florida, Columbus and Macon in Georgia, and Mobile and Montgomery in Alabama. The parameters included for these stations are wind speed, wind direction, cloud ceiling height, opaque cloud cover, dry bulb temperature, relative humidity, station pressure and a precipitation code that is based on current weather conditions. The weather station data for all stations but Gainesville was extracted for the year 1990 from the National Climatic Data Center's (NCDC) Solar and Meteorological Surface Observational Network (SAMSON) CD. The surface data from Gainesville was processed from NCDC CD-144 format. All data was processed with the CALMET preprocessor utility program, SMERGE, to create the SURF.DAT file for input to CALMET. Because the air modeling domain extends into the Gulf of Mexico, surface observations from the Cape San Blas C-MAN station were included in the analysis. The data from Cape San Blas were converted into an overwater surface station format (i.e., SEA) for input to CALMET.

2.8.5 Upper Air Data Stations and Processing

Upper air data was processed from three weather stations including Apalachicola and Tampa Bay/Ruskin, in Florida and Waycross in Georgia. The upper air data were extracted from the NCDC Radiosonde Data CD and processed into the NCDC Tape Deck (TD) 6201 format by the CALMET preprocessor utility program, READ62, to create an upper air file for each station.

A summary of the surface, over-water, and upper air stations used in the air modeling analysis is presented in Table 2-5. The locations of the these weather stations are shown in Figure 2-2.

2.8.6 Precipitation Data stations and Processing

Hourly precipitation data were developed for 57 primary and secondary NWS precipitation stations located in southern Alabama, southern Georgia and northern Florida. The stations were selected so as to provide detailed coverage in all areas within and around the CALMET modeling domain. The hourly precipitation data were extracted from data obtained by the NCDC and organized by EarthInfo on CD. These CD data were extracted into Tape Deck (TD) 3240 format. Once in TD3240 format, the hourly precipitation data for each of the 57 stations were extracted and then re-merged into CALMET input format (PRECIP.DAT) using the utility programs PXTRACT and PMERGE, respectively.

A listing of the precipitation stations used for air modeling analysis is presented in Table 2-6. Precipitation station locations are shown relative to the modeling domain in Figure 2-3.

2.8.7 Geophysical Data Processing

Terrain elevations for each grid cell of the modeling domain were obtained from 1-degree Digital Elevation Model (DEM) files obtained from US Geographical Survey (USGS) internet website. The DEM data for the modeling domain grid was processed using the utility program TERREL. One-degree land-use data was also obtained from the USGS website. The land-use parameters for the air modeling domain were developed using the CALMET preprocessor utility programs CTGCOMP and GTGPROC. Other processed parameters extracted with the land use data are surface roughness, surface albedo, Bowen ratio, soil heat flux, and leaf index field. The processed land-use parameters were combined with the processed terrain elevation data to create the GEO.DAT file that was input to CALMET.

2.9 FACILITY EMISSIONS

Maximum emission rates and stack parameter data for the proposed G-P plant are summarized in Tables 2-7 and 2-8. The data for point sources are summarized in Table 2-7, while the volume source data are presented in Table 2-8. The emission rates are the same as those used for the ISCST modeling analysis. For the CALPUFF analysis, volume sources that have identical stack parameter were combined into one source with the emissions totaled for each group. Hourly emission factors were used for the road traffic source.

3.0 RESULTS

Table 3-1 summarizes the species' maximum impacts and predicted worst days for the refined visibility analysis. The predicted worst days (24-hour periods) for NO_3, PM_{10}, and SO_4 are 1/9 (Julian 9), 10/14 (Julian 287), and 10/15 (Julian 288), respectively. For each worst day, the hourly relative humidity and hourly relative humidity factors [f(RH)] and are presented in Table 3-2. The daily average f(RH)s for 1/9, 10/14, and 10/15 are 7.00, 5.58, and 5.18, respectively. The maximum predicted change due to the proposed facility operation for each worst day is summarized in Table 3-3. The maximum predicted change is 2.71 percent and occurs on 1/9. Because the maximum visibility change is below the criteria of 5 percent change, the operation of the proposed plant is not expected to adversely impact existing regional haze levels at the SMNWR.

Table 2-1. Outline of IWAQM Level II Refined Modeling Analyses Recommendations*

Meteorology	Use CALMET (minimum 6 to 10 layers in the vertical; top layer must extend above the maximum mixing depth expected); horizontal domain extends 50 to 80 km beyond outer receptors and sources being modeled; terrain elevation and land-use data is resolved for the situation.
Receptors	Within Class I area(s) of concern; obtain regulatory concurrence on coverage.
Dispersion	CALPUFF with default dispersion settings. Use MESOPUFF II chemistry with wet and dry deposition 3. Define background values for ozone and ammonia for area
Processing	Use highest predicted 24-hr SO_4, PM10 and NO_3 values; compute a day-average relative humidity factor (f(RH)) for the worst day for each predicted species, calculate extinction coefficients and compute percent change in extinction using the FLM supplied background extinction.

***IWAQM Phase II Summary Report and Recommendations for Modeling Long Range Transport Impacts* (EPA, 12/98)

Table 2-2. CALPUFF Model Settings

Parameter	Setting
Pollutant Species	SO_2, SO_4, NO_x, HNO_3, and NO_3, and PM10
Chemical Transformation	MESOPUFF II scheme
Deposition	Include both dry and wet deposition, plume depletion
Meteorological/Land Use Input	CALMET
Plume Rise	Transitional, Stack-tip downwash, Partial plume penetration
Dispersion	Puff plume element, PG /MP coefficients, rural mode, ISC building downwash scheme
Terrain Effects	Partial plume path adjustment
Output	Create binary concentration file including output species for SO_4, NO_3 and PM10
Model Processing	Highest predicted 24-hour SO_4, NO_3 and PM10 concentrations for year
Background Values	Ozone: 80 ppb; Ammonia: 10 ppb

Table 2-3. Summary of Receptors Used for the Regional Haze Modeling Analysis

Receptor Number	UTM Coordinate (m) Easting	Northing	Receptor Number	UTM Coordinate (m) Easting	Northing
St. Marks Wilderness Area (eastern portion)			64	794368	3328454.5
1	769660	3334380	65	778372	3332268.5
2	770000	3333480	66	778882.5	3332190.7
3	770420	3332920	67	779661.2	3332675.2
4	771060	3332350	68	780388.1	3332580.1
5	771850	3332110	69	780742.8	3332363.7
6	772100	3332710	70	781219.2	3332424.5
7	772380	3332160	71	781868.1	3332952.4
8	772230	3331440	72	782335.4	3332987
9	771570	3331050	73	782984.3	3333471.6
10	771450	3330530	74	783192	3333359.1
11	771700	3330220	75	783936.1	3333488.9
12	772420	3329810	76	784585	3333627.3
13	773350	3329870	77	785173.4	3333203.3
14	774000	3330230	78	785597	3333748.3
15	774270	3331020	79	786159.4	3333644.4
16	774100	3330040	80	787000	3333750
17	774740	3330480	81	788000	3333218.75
18	775370	3330910	82	782000	3335390.24
19	776140	3331240	83	781000	3335268.29
20	776220	3331880	84	780000	3333939
21	776490	3332400	85	789500	3331512
22	776440	3333010	86	791098	3330375
23	777370	3332250	87	790098	3330847
24	770000	3338000	88	794098	3329274
25	770000	3336000	89	793098	3329183
26	772000	3336000	90	792098	3329606
27	772000	3333000	91	791244	3330549
28	772000	3331000	92	791305	3333366
29	775000	3333000	93	790915	3335000
30	775000	3331000	94	791342	3337159
31	777000	3333000	95	789000	3337914
32	770200	3339000	96	788000	3337182
33	770200	3338000	97	787000	3336476
34	770200	3337200	98	786000	3336415
35	774400	3336100	99	785000	3336244
36	770400	3333000	100	784000	3336183
37	768900	3337600	101	783000	3336171
38	769100	3336800	102	791646	3336585
39	768800	3338400	103	791439	3338244
40	769300	3338800	104	789431	3338305
41	769800	3339100	105	791300	3332259.3
42	768755	3338411	106	791300	3331468.6
43	769098	3338713	107	790443	3338299.2
44	769399	3338902	108	791257.6	3335786.3
45	769717	3339105	St. Marks WA (Thoms Island)		
46	770257	3339219	109	744700	3322400
47	769200	3336000	110	745400	3321399.9
48	769700	3335000	111	746500	3321399.9
49	770000	3334000	112	747100	3320500
50	771000	3332000	113	746400	3319899.9
51	773000	3330500	114	746200	3318800
52	774000	3330500	115	745600	3318000
53	771000	3336000	116	745200	3319200
54	773000	3336000	117	745200	3320399.9
55	774000	3336000	118	744100	3321500
56	775000	3335000	119	744700	3321000
57	775000	3334000	120	744700	3321700
58	775000	3333000	121	745400	3321000
59	776000	3333000	122	745400	3322000
60	776000	3331000	123	746000	3319500
61	778000	3333500	124	746000	3320500
62	779000	3334000	125	746000	3321200
63	789000	3333000			

Table 2-4. CALMET Settings

Parameter	Setting
Horizontal Grid Dimensions	475 by 300 km, 5 km grid resolution
Vertical Grid	8 layers
Weather Station Data Inputs	9 surface, 3 upper air, 57 precipitation stations
Wind model options	Diagnostic wind model, no kinematic effects
Prognostic wind field model	MM4 data, 80 km resolution, 8 x 6 grid, used for wind field initialization
Output	Binary hourly gridded meteorological data file for CALPUFF input

Tab2-5.xls
7/12/00

Table 2-5 Surface, Overwater, and Upper Air Stations Used in the Refined Modeling Analysis

Station Name	Station Symbol	WBAN Number	UTM Coordinate Easting (km)	UTM Coordinate Northing (km)	UTM Coordinate Zone	Anemometer Height (m)	Time Zone[b]
Surface Stations							
Jacksonville, FL	JAX	13889	1012.82[a]	3374.19	17	6.1	5
Tallahassee, FL	TLH	93805	753.04[a]	3363.99	16	7.6	5
Tampa, FL	TPA	12842	929.17[a]	3094.25	17	6.7	5
Columbus, GA	CSG	93842	692.57[a]	3599.35	16	9.1	5
Macon, GA	MCN	3813	831.58[a]	3620.93	17	7.0	5
Mobile, AL	MOB	13894	380.26	3394.97	16	10.1	6
Montgomery, AL	MGM	13895	556.50	3573.65	16	7.0	6
Gainesville, FL	GNV	12816	957.43[a]	3284.16	17	6.7	5
Overwater Stations							
Cape San Blas, FL	CSBF1	-	659.04	3283.32	16	9.8	6
Upper Air Stations							
Ruskin, FL	TBW	12842	941.95[a]	3064.55	17	NA	5
Waycross, GA	AYS	13861	946.68[a]	3457.95	17	NA	5
Apalachicola, FL	AQQ	12832	690.22[a]	3290.65	17	NA	5

a. Equivalent UTM Coordinate for Zone 16

b. Eastern = 5, Central = 6

Tab2-6.xls
7/12/00

Table 2-6. Hourly Precipitation Stations Used in the Refined Modeling Analysis

Station Name	Station Number	UTM Coordinate Easting (km)	Northing (km)	Zone
Florida				
Apalachicola WSO Arpt	80211	691.061	3289.921	16
Blackman	80765	533.424	3427.601	16
Branford	80975	895.606[a]	3315.955	17
Bristol	81020	693.715	3366.473	16
Cross City 2 WNW	82008	870.268[a]	3281.754	17
Dowling Park 1 W	82391	863.505[a]	3348.418	17
Gainesville 11 WNW	83322	935.411[a]	3284.205	17
Graceville 1 SW	83538	641.703	3424.797	16
Inglis 3 E	84273	922.631[a]	3211.652	17
Jacksonville WSO AP	84358	1013.427[a]	3373.634	17
Lynne	85237	989.255[a]	3230.295	17
Monticello 3 W	85879	800.168[a]	3381.291	17
Niceville	86240	548.745	3377.572	16
Panacea 3 S	86828	752.453	3319.607	16
Panama City 5 NE	86842	634.754	3343.414	16
Raiford State Prison	87440	965.02[a]	3326.686	17
Tallahassee WSO AP	88758	754.292	3365.100	16
Wausau	89415	635.756	3391.462	16
Woodruff Dam	89795	704.292	3399.935	16
Georgia				
Abbeville 4 S	90010	861.839[a]	3535.687	17
Americus Exp Stn Nurser	90258	757.935	3554.581	16
Bainbridge Intl Paper Co	90586	724.846	3409.588	16
Brunswick	91340	1032.132[a]	3448.130	17
Claxton	91973	995.054[a]	3559.185	17
Columbus Metro Ap	92166	693.300	3599.307	16
Coolidge	92238	806.336	3434.765	17
Doles	92728	806.73[a]	3510.587	17
Dublin 2	92844	901.605[a]	3603.714	17
Edison	93028	715.132	3494.426	16
Fargo	93312	930.278[a]	3396.112	17
Folkston 3 SW	93460	982.591[a]	3407.519	17
Hamilton 4 W	94033	693.630	3625.258	16
Hazlehurst	94204	930.478[a]	3528.882	17
Jesup	94671	996.541[a]	3497.124	17
Lizella	95249	815.936[a]	3633.385	17
Lumpkin 2 SE	95394	710.020	3545.778	16
Macon Middle GA Regional	95443	831.127[a]	3619.583	17
Pearson	96879	904.643[a]	3463.307	17
Sylvania 2 SSE	98517	1022.108[a]	3621.570	17
The Rock	98657	757.814	3650.455	16
Valdosta 4 NW	98974	856.902[a]	3416.946	17
West Point	99291	669.434	3638.065	16
Alabama				
Abbeville 1 NNW	10008	662.902	3495.325	16
Alberta	10140	459.798	3566.793	16
Andalusia 3 W	10252	545.472	3463.482	16
Atmore State Nursery	10402	458.171	3448.658	16
Auburn Agronomy Farm	10430	640.773	3607.735	16
Dadeville 2	12124	617.060	3633.087	16
Dothan	12377	652.449	3452.663	16
Enterprise 5 NNW	12675	604.606	3472.403	16
Greenville	13519	533.119	3523.197	16
Marion 7 NE	15112	474.872	3618.169	16
Midway	15397	639.828	3549.782	16
Montgomery Dannelly Field	15550	555.790	3573.610	16
Peterman	16370	474.564	3494.634	16
Thorsby Exp Station	18209	530.782	3642.236	16
Troy	18323	597.296	3519.354	16

a. Equivalent UTM Easting Coordinate for Zone 16

Table 2-7. G-P Hosford Source Point Source Inventory Used for the Regional Haze Analysis

Source ID Number	Maximum Emission Rates (g/s) SO_2	NO_x	PM_{10}	Height (m)	Temperature (K)	Velocity (m/s)	Diameter (m)
EP_1A	0.105	4.62	4.69	39.6	399.3	15.31	2.59
EP_1B	0.105	4.62	4.69	39.6	399.3	15.31	2.59
EP_2	---	1.35	0.36	30.48	340.9	18.46	2.18
EP_3	---	---	0.260	33.53	294.3	15.97	0.71
EP_4	---	---	0.166	30.48	294.3	15.09	1.12
EP_5	---	---	0.246	36.58	294.3	18.48	1.22
EP_6	---	---	0.270	27.43	294.3	15.05	1.02
EP_7	---	---	0.043	22.86	294.3	0.01	0.25
EP_8	---	---	0.239	32	294.3	22.91	0.76
EP_9	---	---	0.260	33.53	294.3	15.22	0.76
EP_10	0.239	2.02	0.163	42	644.3	6.35	1.68
PDBARK1	---	---	0.047	8.53	273.0	0.001	0.001
PDBARK2	---	---	0	8.53	273.0	0.001	0.001
PDBARK3	---	---	0.047	8.53	273.0	0.001	0.001
PSB2	---	---	1.76E-03	10.67	294.3	0.01	0.22
PSB1	---	---	1.76E-03	10.67	294.3	0.01	0.22
PSB3	---	---	1.76E-03	10.67	294.3	0.01	0.22

Table 2-8. G-P Hosford Volume Source Inventory Used for the Regional Haze Analysis

Source ID Number	Maximum PM_{10} Emission Rate (g/s)	Release Height (m)	Initial Sy (m)	Initial Sz (m)	Emission Rate Scalar
BARKPIL	0.0189	2.29	7.09	1.06	
BARKHOG	0.00189	3.91	0.28	0.47	
TP1_3	6.80E-06	4.88	0.21	0.21	
TP4_7	9.01E-05	7.62	0.21	0.21	
ROADS	0.22	3.66	18.34	1.7	HROFDY

Sy = Horizontal Dispersion
Sz = Vertical Dispersion

Table 3-1. Highest Predicted Species Concentrations and Julian Days, 1990

Species Predicted	Concentration[a] (ug/m^3)	Julian Day
SO_4	0.00060	288
NO_3	0.04052	9
PM_{10}	0.19398	287

Species Concentrations on Worst Days

Species	9 (1/9)	287 (10/14)	288 (10/15)
SO_4	0.00024	0.00027	0.00060
NO_3	0.04052	0.03095	0.01007
PM_{10}	0.18427	0.19398	0.09713

a. Predicted with CALPUFF model and CALMET 1990 wind field for St. Marks NWR domain

Table 3-2. Computed Daily Average RH Factors for Predicted Worst Days

Hour Ending	9 (1/9)		287 (10/14)		288 (10/15)	
	RH(%)	f(RH)	RH(%)	f(RH)	RH(%)	f(RH)
0	90	4.7	90	4.7	90	4.7
1	90	4.7	90	4.7	90	4.7
2	96	12.4	93	7.0	90	4.7
3	100	21.4	97	15.1	97	15.1
4	96	12.4	97	15.1	97	15.1
5	96	12.4	97	15.1	97	15.1
6	96	12.4	97	15.1	96	12.4
7	96	12.4	97	15.1	96	12.4
8	89	4.4	97	15.1	90	4.7
9	83	3.1	71	2.0	73	2.1
10	77	2.4	56	1.3	52	1.3
11	72	2	49	1.2	43	1.1
12	64	1.6	43	1.1	39	1.1
13	60	1.4	35	1.0	36	1.0
14	52	1.3	36	1.0	34	1.0
15	50	1.2	40	1.1	29	1.0
16	50	1.2	40	1.1	29	1.0
17	54	1.3	40	1.1	29	1.0
18	65	1.7	60	1.4	53	1.3
19	86	3.6	76	2.3	69	1.9
20	86	3.6	79	2.6	81	2.8
21	96	12.4	81	2.8	90	4.7
22	96	12.4	84	3.2	93	7.0
23	100	21.4	87	3.8	93	7.0
Average		6.992		5.583		5.175

Note: Hourly relative humidity data from Tallahassee, Florida; 1990.

Do Not Use Flag at all
No Phase 1

Took RH Values from Flag.

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Table 3-3. Refined Regional Haze Analyses Results, G-P Hosford Facility

Item	Units	Predicted Worst Days		
		9 (1/9)	287 (10/14)	288 (10/15)
Maximum Predicted Concentration	ug/m^3			
SO_4		0.000240	0.000269	0.000599
NO_3		0.040521	0.030950	0.010070
PM10		0.184270	0.193980	0.097133
Computed Concentrations	ug/m^3			
$(NH_4)_2SO_4$		0.000329	0.000370	0.000824
NH_4NO_3		0.0523	0.0399	0.0130
Average Relative Humidity Factor(a)		6.9917	5.5833	5.1750
Background Visual Range(b), Vr		65	65	65
Background Extinction Coeff.(bext)	km^{-1}	0.0602	0.0602	0.0602
Source Extinction Coeff (bexts)	km^{-1}			
$(NH_4)_2SO_4$		0.000007	0.000006	0.000013
NH_4NO_3		0.001096	0.000669	0.000202
PM10		0.000553	0.000582	0.000291
Total bexts	km^{-1}	0.001656	0.001257	0.000506
Deciview Change		0.271	0.207	0.084
Percent Change (%)		2.71	2.07	0.84
Allowable Criteria (%)		5.0	5.0	5.0

Note: Computed from Tallahassee RH data, 1990. Provided by U.S. Fish and Wildlife Service.

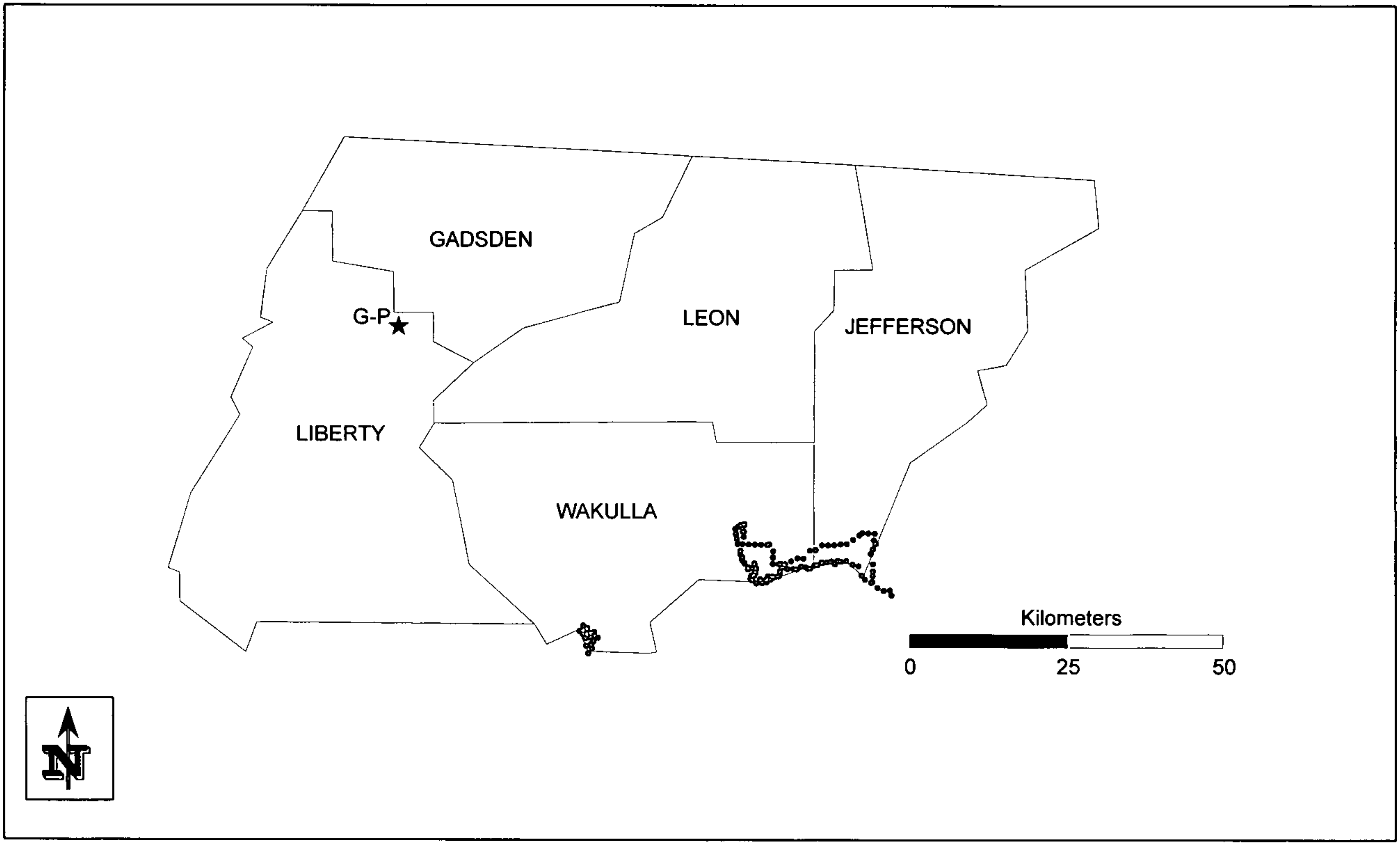

Figure 2-1. Location of St. Marks Wilderness Area Air Modeling Receptors

Source: Golder Associates Inc., 2000

Golder Associates

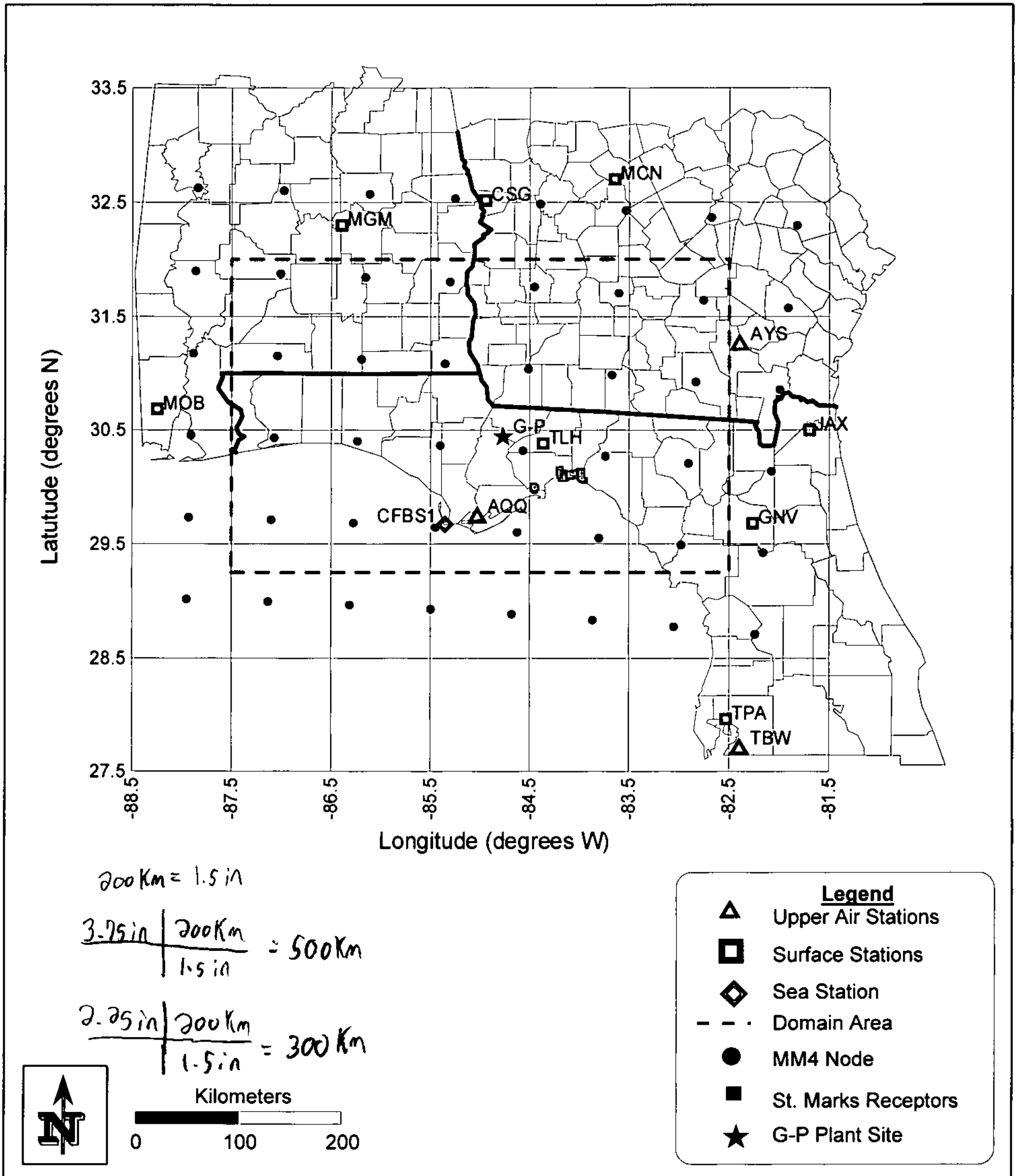

Figure 2-2. Location of G-P Site, Meterological Stations, Receptors and MM4 Grid Points within CALMET Modeling Domain

Source: Golder Associates Inc., 2000

Golder Associates

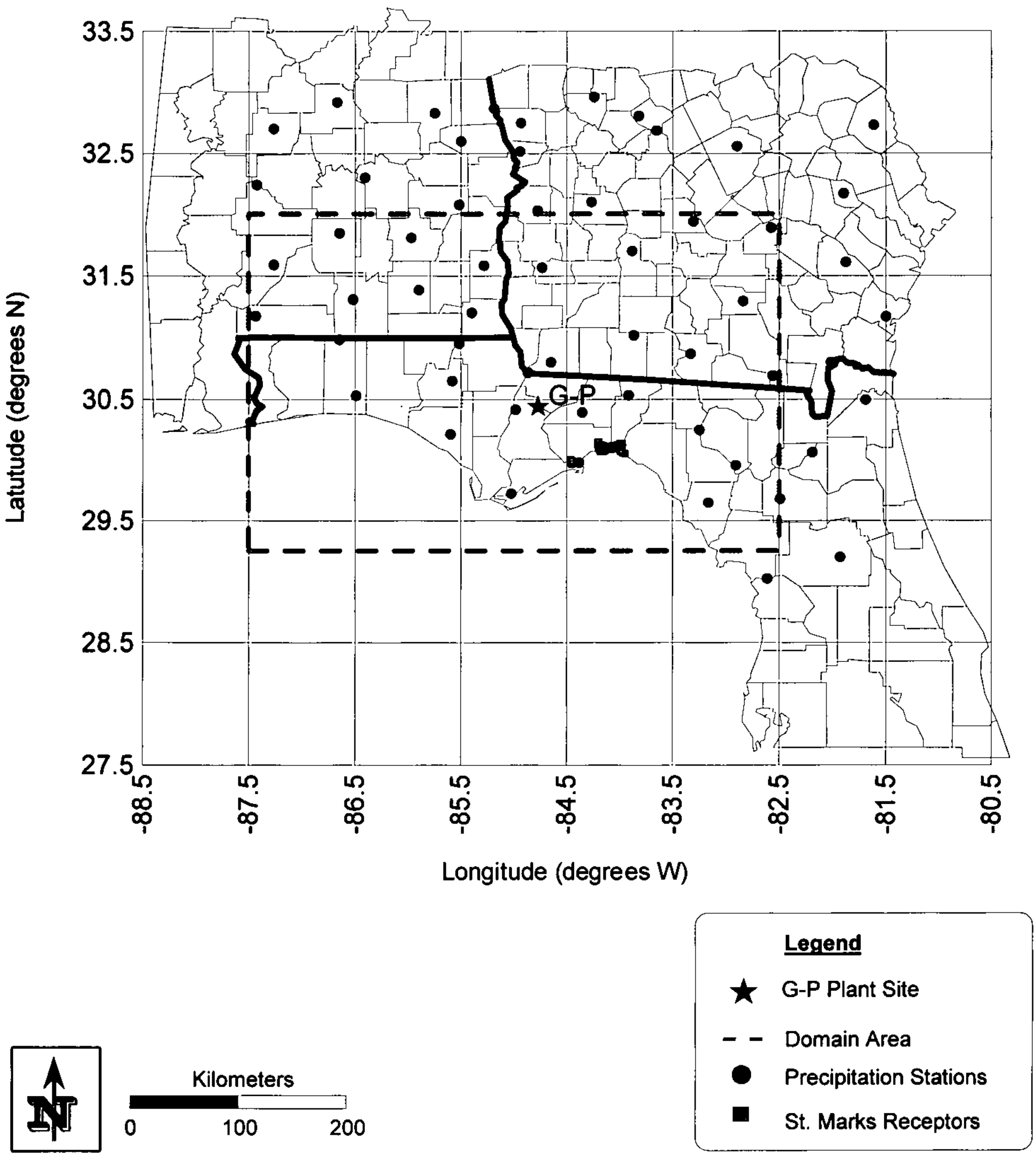

Figure 2-3. Location of Precipitation Stations within CALMET Modeling Domain

Source: Golder Associates Inc., 2000

Golder Associates

APPENDIX A

PARAMETER SETTINGS FOR CALPUFF AND CALMET

Table A-1. IWAQM Phase II Calpuff Parameter Settings Used in the Refined Regional Haze Analysis

Number	Input Group Description	Variable	Seq	Description	Default Value	Modeled Value
1	Run Control	NMETDAT	1	Number of CALMET data files for run	1	4
1		METRUN	2	Do we run all periods (1) or a subset (0)?	0	0
1		IBYR	3	Beginning year	User Defined	90
1		IBMO	4	Beginning month	User Defined	1
1		IBDY	5	Beginning day	User Defined	6
1		IBHR	6	Beginning hour	User Defined	0
1		IRLG	6	Length of run (hours)	User Defined	Quarterly
1		NSPEC	7	Number of species modeled (for MESOPUFF II chemistry)	5	6
1		NSE	8	Number of species emitted	3	3
1		ITEST	9		2	2
1		MRESTART	10	Restart options (0 = no restart) allows splitting runs into smaller segments	0	0
1		NRESPD	11		0	0
1		METFM	12	Format of input meteorology (1 = CALMET, 2 = ISC)	1	1
1		AVET	13	Averaging time lateral dispersion parameters (minutes)	60	60
1		PGTIME	14	PG Averaging Time (minutes)	60	60
2	Tech Options	MGAUSS	1	Near-field vertical distribution (1 = Gaussian)	1	1
2		MCTADJ	2	Terrain adjustments to plume path (3 = Plume path)	3	3
2		MCTSG	3	Do we have subgrid hills? (0 = No) allows CTDM-like treatment for subgrid scale hills	0	0
2		MSLUG	4	Near-field puff treatment (0 = No slugs)	0	0
2		MTRANS	5	Model transitional plume rise? (1 = Yes)	1	1
2		MTIP	6	Treat stack tip downwash? (1 = Yes)	1	1
2		MSHEAR	7	Treat vertical wind shear? (0 = No)	0	0
2		MSPLIT	8	Allow puffs to split? (0 = No)	0	0
2		MCHEM	9	MESOPUFF-II Chemistry? (1 = Yes)	1	1
2		MWET	10	Model wet deposition? (1 = Yes)	1	1
2		MDRY	11	Model dry deposition? (1 = Yes)	1	1
2		MDISP	12	Method for dispersion coefficients (3 = PG & MP)	3	4
2		MTURBVW	13	Turbulence characterization? (Only if MDISP = 1 or 5)	3	0
2		MDISP2	14	Backup coefficients (Only if MDISP = 1 or 5)	3	4
2		MROUGH	15	Adjust PG for surface roughness? (0 = No)	0	0
2		MPARTL	16	Model partial plume penetration? (0 = No)	1	1
2		MTINV	17	Elevated inversion strength (0 = compute from data)	0	0
2		MPDF	18	Use PDF for convective dispersion? (0 = No)	0	0
2		MSGTIBL	19	Use TIBL module? (0 = No) allows treatment of subgrid scale coastal areas	0	0
2		MREG	20	Regulatory default checks? (1 = Yes)	1	0
3	Species List	CSPECn		Names of species modeled (for MESOPUFF II must be SO2-SO4-NOX-HNO3-NO3, PM10	User Defined	ALL 6
3		Specie Groups		Grouping of species if any	User Defined	NA
3		Specie Names		Manner species will be modeled	User Defined	
4	Grid Control	NX	1	Number of east-west grids of input meteorology	User Defined	95

Table A-1. IWAQM Phase II Calpuff Parameter Settings Used in the Refined Regional Haze Analysis						
	Input Group					Modeled
Number	Description	Variable	Seq	Description	Default Value	Value
4		NY	2	Number of north-south grids of input meteorology	User Defined	60
4		NZ	3	Number of vertical layers of input meteorology	User Defined	9
4		DGRIDKM	4	Meteorology grid spacing (km)	User Defined	5
4		ZFACE	5	Vertical cell face heights of input meteorology	User Defined	9 values
4		XORIGKM	6	Southwest corner (east-west) of input User	efined meteorolog	452
4		YORIGIM	7	Southwest corner (north-south) of input User	efined meteorolog	3236
4		IUTMZN	8	UTM zone	User Defined	17
4		XLAT	9	Latitude of center of meteorology domain	User Defined	30.5
4		XLONG	10	Longitude of center of meteorology domain	User Defined	85
4		XTZ	11	Base time zone of input meteorology	User Defined	5
4		IBCOMP	12	Southwest X-index of computational domain	User Defined	1
4		JBCOMP	13	Southwest Y-index of computational domain	User Defined	1
4		IECOMP	14	Northeast X-index of computational domain	User Defined	95
4		JECOMP	15	Northeast Y-index of computational domain	User Defined	60
4		LSAMP	16	Use gridded receptors? (T = Yes)	F	F
4		IBSAMP	17	Southwest X-index of receptor grid	User Defined	0
4		JBSAMP	18	Southwest Y-index of receptor grid	User Defined	0
4		IESAMP	19	Northeast X-index of receptor grid	User Defined	95
4		JESAMP	20	Northeast Y-index of receptor grid	User Defined	60
4		MESHDN	21	Gridded recpetor spacing = DGRIDKM/MESHDN	1	1
5	Output Options	ICON	1	Output concentrations? (1 = Yes)	1	1
5		IDRY	2	Output dry deposition flux? (1 = Yes)	1	0
5		IWET	3	Output west deposition flux? (1 = Yes)	1	0
5		IVIS	4	Output RH for visibility calculations (1 = Yes)	1	0
5		LCOMPRS	5	Use compression option in output? (T = Yes)	T	T
5		ICPRT	6	Print concentrations? (0 = No)	0	0
5		IDPRT	7	Print dry deposition fluxes (0 = No)	0	0
5		IWPRT	8	Print wet deposition fluxes (0 = No)	0	0
5		ICFRQ	9	Concentration print interval (1 = hourly)	1	24
5		IDFRQ	10	Dry deposition flux print interval (1 = hourly)	1	1
5		IWFRQ	11	West deposition flux print interval (1 = hourly)	1	1
5		IPRTU	12	Print output units (1 = g/m**3; g/m**2/s; 3 = ug/m3, ug/m2/s)	1	3
5		IMESG	13	Status messages to screen? (1 = Yes)	1	1
5		LDEBUG	14	Turn on debug tracking? (F = No)	F	F
5		NPFDEB	15	(Number of puffs to track)	(1)	1
5		NN1	16	(Met. Period to start output)	(1)	1
5		NN2	17	(Met. Period to end output)	(10)	10
7	Dry Dep Chem	Dry Gas Dep		Chemical parameters of gaseous deposition species	User Defined	NOX,HNO3
						SO2
8	Dry Dep Size	Dry Part. Dep		Chemical parameters of particulate deposition species	User Defined	SO4,NO3

Table A-1. IWAQM Phase II Calpuff Parameter Settings Used in the Refined Regional Haze Analysis						
	Input Group					Modeled
Number	Description	Variable	Seq	Description	Default Value	Value
						PM10
9	Dry Dep Misc	RCUTR	1	Reference cuticle resistance (s/cm)	30	30
9		RGR	2	Reference ground resistance (s/cm)	10	10
9		REACTR	3	Reference reactivity	8	8
9		NINT	4	Number of particle-size intervals	9	9
9		IVEG	5	Vegetative state (1 = active and unstressed)	1	1
10	Wet Dep	Wet Dep		Wet deposition parameters	User Defined	Var
11	Chemistry	MOZ	1	Ozone background? (0 = constant background value; 1 = read from ozone.dat)	1	0
11		BCKO3	2	Ozone default (ppb) (Use only for missing data)	80	80
11		BCKNH3	3	Ammonia background (ppb)	10	10
11		RNITE1	4	Nighttime SO2 loss rate (%/hr)	0.2	0.2
11		RNITE2	5	Nighttime NOx loss rate (%/hr)	2	2
11		RNITE3	6	Nighttime HNO3 loss rate (%/hr)	2	2
12	Dispersion	SYTDEP	1	Horizontal size (m) to switch to time dependence	550	550
12		MHFTSZ	2	Use Heffter for vertical dispersion? (0 = No)	0	0
12		JSUP	3	PG Stability class above mixed layer	5	5
12		CONK1	4	Stable dispersion constant (Eq 2.7-3)	0.01	0.01
12		CONK2	5	Neutral dispersion constant (Eq 2.7-4)	0.1	0.1
12		TBD	6	Transition for downwash algorithms (0.5 = ISC)	0.5	0.5
12		IURB1	7	Beginning urban landuse type	10	10
12		IURB2	8	Ending urban landuse type	19	19
12		ILANDUIN	9	Land use type (20 = Unirrigated agricultural land)	(20)	20
12		ZOIN	10	Roughness length (m)	(0.25)	0.25
12		XLAIIN	11	Leaf area index	(3)	3
12		ELEVIN	12	Met. Station elevation (m above MSL)	(0)	0
12		XLATIN	13	Met. Station North latitude (degrees)	(-999)	-999
12		XLONIN	14	Met. Station West longitude (degrees)	(-999)	-999
12		ANEMHT	15	Anemometer height of ISC meteorological data (m)	(10)	NA
12		ISIGMAV	16	Lateral turbulence (Not used with ISC meteorology)	(1)	NA
12		IMIXCTDM	17	Mixing heights (Not used with ISC meteorology)	(1)	NA
12		XMXLEN	18	Maximum slug length in units of DGRIDKM	1	1
12		XSAMLEN	19	Maximum puff travel distance per sampling step (units of DGRIDKM)	1	1
12		MXNEW	20	Maximum number of puffs per hour	99	99
12		MXSAM	21	Maximum sampling steps per hour	99	99
12		NCOUNT	22	Iterations when computing Transport Wind (Calmet & Profile Winds)	(2)	2
12		SYMIN	23	Minimum lateral dispersion of new puff (m)	1	1
12		SZMIN	24	Minimum vertical dispersion of new puff (m)	1	1
12		SVMIN	25	Array of minimum lateral turbulence (m/s)	6 * 0.50	6*0.50
12		SWMIN	26	Array of minimum vertical turbulence (m/s)	.12,0.08,0.06,0.03	SAME

Table A-1. IWAQM Phase II Calpuff Parameter Settings Used in the Refined Regional Haze Analysis						
	Input Group					Modeled
Number	Description	Variable	Seq	Description	Default Value	Value
12		CDIV (1), (2)	27	Divergence criterion for dw/dz (1/s)	0.01 (0.0,0.0)	0.0,0.0
12		WSCALM	28	Minimum non-calm wind speed (m/s)	0.5	0.5
12		XMAXZI	29	Maximum mixing height (m)	3000	3000
12		XMINZI	30	Minimum mixing height (m)	50	50
12		WSCAT	31	Upper bounds 1st 5 wind speed classes (m/s)	4,3.09,5.14,8. 23,1	SAME
12		PLX0	32	Wind speed power-law exponents	0.07,0.10,0.15,0.3	SAME
12		PTGO	33	Potential temperature gradients PG E and F (deg/km)	0.020,0.035	SAME
12		PPC	34	Plume path coefficients (only if MCTADJ = 3)	,0.5,0.5,0.5,0.35,0	SAME
12		SL2PF	35	Maximum Sy/puff length	10	10
12		NSPLIT	36	Number of puffs when puffs split	3	3
12		IRESPLIT	37	Hours when puff are eligible to split	User Defined	HR 17=1
12		ZISPLIT	38	Previous hour's mixing height(minimum)(m)	100	100
12		ROLDMAX	39	Previous Max mix ht/current mix ht ratio must be less then this value for puff to split	0.25	0.25
12		EPSSLUG	40	Convergence criterion for slug sampling integration	1.00E-04	1.0E-04
12		EPSAREA	41	Convergence criterion for area source integration	1.00E-06	1.0E-06
13	Point Source	NPT1	1	Number of point sources	User Defined	17
13		IPTU	2	Units of emission rates (1 = g/s)	1	1
13		NSPT1	3	Number of point source-species combinations	0	0
13		NPT2	4	Number of point sources with fully variable emission rates	0	0
13		Point Sources		Point sources characteristics	User Defined	VAR
14	Area Source	Area Sources		Area sources characteristics	User Defined	NA
15	Line Source	Line Sources		Buoyant lines source characteristics	User Defined	NA
16	Volume Source	NVL1		Number of volume sources	User Defined	5
		IVLU		Units for volume source (1= g/s)	User Defined	1
		NSVL1		Number of volume sources with emission scaling factors	0	1
17	Receptors	NREC		Number of user defined receptors	User Defined	125
17		Receptor Data		Location and elevation (MSL) of receptors	User Defined	VAR
Legend						
	DEPOS.	With Deposition				
	DEFAULT	Uses defaults				
	VAR	Variable Input				
	NA	Not Applicable				
	SAME	Same as recommended				

Table A-2. IWAQM Phase II CALMET Option Settings Used for Refined Regional Haze Analysis

Variable	Description	Default Value	Modeled Value
GEO.DAT	Name of Geophysical data file	GEO.DAT	GEO.DAT
SURF.DAT	Name of Surface data file	SURF.DAT	SURF.DAT
PRECIP.DAT	Name of Precipitation data file	PRECIP.DAT	PRECIP.DAT
NUSTA	Number of upper air data sites	User Defined	3
Upn.DAT	Names of NUSTA upper air data files	Upn.DAT	UP1..UP5.DAT
NOWSTA	Number of Overwater met stations	User Defines	0
IBYR	Beginning year	User Defines	90
IBMO	Beginning month	User Defines	1
IBDY	Beginning day	User Defines	6
IBHR	Beginning hour	User Defines	0
IBTZ	Base time zone	User Defines	5
IRLG	Number of hours to simulate	User Defines	quarterly
IRTYPE	Output file type to create (must be 1 for CALPUFF)	1	1
LCALGRD	Are w-components and temperature needed?	T	T
NX	Number of east-west grid cells	User Defines	95
NY	Number of north-south grid cells	User Defines	60
DGRIDKM	Grid spacing	User Defines	5
XORIGKM	Southwest grid cell X coordinate	User Defines	452
YORIGKM	Southwest grid cell Y coordinate	User Defines	3236
XLAT0	Southwest grid cell latitude	User Defines	29.25
YLON0	Southwest grid cell longitude	User Defines	87.50
IUTMZN	UTM Zone	User Defines	16
LLCONF	When using Lambert Conformal map coordinates, roate winds from true north to map north?	F	F
XLAT1	Latitude of 1st standard parallel	30	30
XLAT2	Latitude of 2nd standard parallel	60	60
RLON0	Longitude used if LLCONF = T	90	NA
RLAT0	Latitude used in LLCONF = T	40	NA
NZ	Number of vertical layers	User Defines	8
ZFACE	Vertical cell face heights (NZ+1 values)	User Defines	9
LSAVE	Save met.data fields in an unformatted file?	T	T
INFORMO	Format of unformatted file (1 for CALPUFF)	1	1
NSSTA	Number of stations in SURF.DAT file	User Defines	8
NPSTA	Number of stations in PRECIP.DAT	User Defines	57
ICLOUD	Is cloud data to be input as gridded fields? (0 = No)	0	0
IFORMS	Format of surface data (2 = formatted)	2	2
IFORMP	Format of precipitation data (2 = formatted)	2	2
IFORMC	Format of cloud data (2 = formatted)	2	0
IWFCOD	Generate winds by diagnostic wind module? (1 = Yes)	1	1
IFRADJ	Adjust winds using Froude number effects? (1 = Yes)	1	1
IKINE	Adjust winds using kinematic effects? (1 = Yes)	0	0

Table A-2. IWAQM Phase II CALMET Option Settings Used for Refined Regional Haze Analysis			
		Default	Modeled
Variable	Description	Value	Value
IOBR	Use O'Brien procedure for vertical winds? (0 = No)	0	0
ISLOPE	Compute slope flows? (1 = Yes)	1	1
IEXTRP	Extrapolate surface winds to upper layers? (-4 = use similarity theory and ignore layer 1 of upper air station data)	-4	-4
ICALM	Extrapolate surface calms to upper layers? (0 = No)	0	0
BIAS	Surface/upper-air weighting factors (NZ values)	NZ*0	8*0
IPROG	Using prognostic or MM-FDDA data? (0 = No)	4	4
LVARY	Use varying radius to develop surface winds?	F	F
RMAX1	Max surface over-land extrapoolation radius (km)	User Defines	40
RMAX2	Max aloft over-land extrapolation radius (km)	User Defines	100
RMAX3	Maximum over-water extrapolation radius (km)	User Defines	100
RMIN	Minimum extrapolation radius (km)	0.1	0.1
RMIN2	Distance (km) around an upper air site where veritcal extrapolation is excluded (Set to -1 if IEXTRP = +/-4)	4	4
TERRAD	Radius of influence of terrain features (km)	User Defines	10
R1	Relative weight at surface of Step 1 field and obs	User Defines	60
R2	Relative weight aloft of Step 1 field and obs	User Defines	100
DIVLIM	Maximum acceptable divergence	5.00E-06	5.00E-06
NITER	Max number of passes in divergence minimization	50	50
NSMTH	Number of passes in smoothing (NZ values)	2,4*(NZ-1)	2,4*(NZ-1)
NINTR2	Max number of stations for interpolations (NZ values)	99	99
CRITFN	Critical Froude number	1	1
ALPHA	Empirical factor triggering kinematic effects	0.1	0.1
IDIOPT1	Compute temperatures from observations (0 = True)	0	0
ISURFT	Surface station to use for surface temperature (between 1 and NSSTA)	User Defines	2
IDIOPT2	Compute domain-average lapse rates? (0 = True)	0	0
IUPT	Station for lapse rates (between 1 and NUSTA)	User Defines	3
ZUPT	Depth of domain-average lapse rate (m)	200	200
IDIOPT3	Compute internally initial guess winds? (0 = True)	0	0
IUPWND	Upper air station for domain winds (-1 = 1/ r**2 interpolation of all stations)	-1	-1
ZUPWND	Bottom and top of layer for 1st guess winds (m)	1, 1000	1, 5000
IDIOPT4	Read surface winds from SURF.DAT? (0 = True)	0	0
IDIOPT5	Read aloft winds from UPn.DAT? (0 = True)	0	0
CONSTB	Neutral mixing height B constant	1.41	1.41
CONSTE	Convective mixing height E constant	0.15	0.15
CONSTN	Stable mixing height N constant	2400	2400
CONSTW	Over-water mixing height W constant	0.16	0.16
FCORIOL	Absolute value of Coriolis parameter	1.00E-04	1.00E-04

Table A-2. IWAQM Phase II CALMET Option Settings Used for Refined Regional Haze Analysis			
		Default	Modeled
Variable	Description	Value	Value
IAVEXZI	Spatial averaging of mixing heights? (1 = True)	1	1
MNMDAV	Max averaging radius (number of grid cells)	1	3
HAFANG	Half-angle for looking upwind (degrees)	30	30
ILEVZI	Layer to use in upwind averaging (between 1 and NZ)	1	1
DPTMIN	Minimum capping potential temperature lapse rate	0.001	0.001
DZZI	Depth for comuting capping lapse rate (m)	200	200
ZIMIN	Minimum over-land mixing height (m)	50	50
ZIMAX	Maximum over-land mixing height (m)	3000	3000
ZIMINW	Minimum over-water mixing height (m)	50	50
ZIMAXW	Maximum over-water mixing height (m)	3000	3000
IRAD	Form of temperature interpolation (1 = 1/r)	1	1
TRADKM	Radius of temperature interpolation (km)	500	500
NUMTS	max number of station in temperature interpolations	5	5
IAVET	Conduct spatial averaging of temperature? (1 = True)	1	1
TGDEFB	Default over-water mixed layer lapse rate (K/m)	-0.0098	-0.0098
TGDEFA	Default over-water capping lapse rate (K/m)	-0.0045	-0.0045
JWAT1	Beginning landuse type defining water	999	50
JWAT2	Ending landuse type defining water	999	50
NFLAGP	Method for precipitation interpolation (2 = 1/r**2)	2	2
SIGMAP	Precip radius for interpolations (km)	100	100
CUTP	Minimum cut off precip rate (mm/hr)	0.01	0.01
SSn	NSSTA input records for surface stations	User Defines	8
USn	NUSTA input records for upper-air stations	User Defines	3
PSn	NPSTA input records for precipation stations	User Defines	57
Legend			
DEFAULT	Uses defaults		
VAR	Variable Input		
NA	Not Applicable		
SAME	Same as recommended		

Georgia-Pacific Corporation
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Telephone (404) 652-4000

July 11, 2000

RECEIVED
JUL 12 2000
BUREAU OF AIR REGULATION

Mr. Joseph Kahn, P.E.
Florida Department of Environmental Protection
New Source Review Section
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: February 18, 2000 Comment Letter for the Proposed Georgia-Pacific Oriented Strandboard (OSB) Facility in Hosford, FL

Dear Mr. Kahn:

Georgia-Pacific Corporation (G-P) is pleased to provide the following additional information to complete the January PSD air permit application. Each one of your fourteen comments is addressed in the following pages with individual responses and attachments (as noted). Please contact me (404/652-4293) or Paul Vasquez (application contact at 404/652-7327) with any additional questions. Thank you for your help on this important project.

Sincerely,

Mark J. Aguilar, P.E.
Senior Environmental Engineer
Georgia-Pacific Corporation
P.E. Number 52248

SEAL

Enclosures: 8 Attachments (as noted in the attached document)

cc:	P.J. Vasquez	GA030-17
	M.M. Vest	FL165 (Palatka)
	T.R. Wyles	GA030
	Gregg Worley	EPA Region IV
	John Bunyak	National Park Service
	Ed Middleswart	Florida DEP

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RECEIVED
JUL 14 2000
BUREAU OF AIR REGULATION

July 6, 2000

Ms. Cindy L. Phillips, P.E.
Florida Department of Environmental Protection
Air Toxics Unit
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Certified Mail Number
454 700 498

RE: February 18, 2000 Comment Letter for the Proposed Georgia-Pacific Oriented Strandboard Facility in Hosford, FL – Case-by-Case MACT Information

Dear Ms. Phillips:

Georgia-Pacific Corporation (G-P) is pleased to provide the following additional information to complete the January PSD air permit application. Each one of your five comments is addressed in the following pages with individual responses and attachments (as noted). Please contact me (404/652-4293) or Paul Vasquez (application contact at 404/652-7327) with any additional questions. Thank you for your help on this important project.

Sincerely,

Mark J. Aguilar

Mark J. Aguilar, P.E.
P.E. License no. 52248
Senior Environmental Engineer
Georgia-Pacific Corporation

Enclosures: Attachment 1, Supplemental HAP Emissions Estimates

cc:	Mr. Joseph Kahn	FDEP
	P.J. Vasquez	GA030-17
	M.M. Vest	FL165 (Palatka)
	T.R. Wyles	GA030-09

1. *The application states that "The proposed BACT for the dryers and press (see Section 8), regenerative thermal oxidation, satisfies the 112(g) MACT requirement for formaldehyde from these sources." Since a MACT must be proposed by the applicant in accordance with 40 CFR 63.43(e), see attachment, it is assumed that what this statement means is that the applicant wants the proposed BACT to also be considered as the proposed MACT.*

Response:

Georgia-Pacific does indeed propose that the BACT specified in the PSD permit application for the dryers and press also be considered as the proposed MACT for this facility. An updated hazardous air pollutant (HAP) list is provided in Attachment 1. Following development and subsequent submittal of the application, some updated information has become available and is reflected in this Attachment. Although HAP emissions are presented for the thermal oil heater, the annual values represent expected controlled emissions from the dryer regenerative thermal oxidizers (RTOs) – under normal operations, the exhaust from the thermal oil system will pass through the dryer RTOs before exiting to atmosphere. Based on the calculations, the proposed oriented strandboard (OSB) plant would only be considered a major HAP source if the thermal oil system exhaust bypassed the dryer RTOs for more than 500 hours per year. As such, it is questionable whether 112(g) is applicable for this facility. However, in order to avoid future operating restrictions, Georgia-Pacific is willing to follow the necessary application procedures in making the 112(g) demonstration.

The following should address the information that may be missing from the PSD permit application with respect to the proposed 112(g) MACT. The points noted correspond to FDEP's document, titled "What Information is Needed from the Applicant for a Case-by-Case MACT Determination":

(2)(i) Name and address – see Attachment A to the PSD permit application
(2)(ii) Brief description – see Section 3.2 and Attachment A to the PSD permit application; source category is "Plywood and Composite Wood MACT"
(2)(iii) Expected commencement date – August 2000 or upon issuance of the PSD permit, whichever is earlier
(2)(iv) Expected completion date – March 2001
(2)(v) Expected start-up date – March 2001
(2)(vi) HAP quantities – see Attachment 1 to this letter
(2)(vii) Federally enforceable emission limitations – the is a new source, limits only as established in the PSD permit (yet to be issued)
(2)(viii) Expected capacity/utilization is near 100 percent; controlled emission rates presented in Attachment 1 assume 90% control on VOC HAPs and 85% control on particulate matter HAPs
(2)(ix) Expected capacity/utilization is near 100 percent; controlled emission rates are presented in Attachment 1 to this letter and in Attachment B of the PSD permit application
(2)(x) Recommended emission limitations are as listed in Attachment 1 to this letter and in Attachment B of the PSD permit application, but only to the extent that limits are needed to address otherwise applicable requirements
(2)(xi) Selected control technology is regenerative thermal oxidation on both the dryers and press; exhaust from the thermal oil system will normally exit through the dryer RTOs; technical information is provided in Attachment G to the PSD permit application
(2)(xii) Supporting documents of alternatives are same as included in Attachment G to the PSD permit application; same controls will address HAPs as evaluated for volatile organic compounds
(2)(xiii) No additional information requested

2. *In addition to formaldehyde, what other hazardous air pollutants (HAPs) will be emitted from the facility? What will be the potential plantwide emissions of total hazardous air pollutants per year?*

Response:

The estimated emissions are provided in Attachment 1.

3. *What events will require the use of the emergency exhausts shown in Figure 3-4a, Process Flow Diagram? How often are these events expected to occur, and of what duration are these expected to be?*

Response:

There are basically three types of dryer RTO bypass. First, a bypass can occur as a result of a systematic electrical or mechanical problem, unrelated to preventive maintenance. Based on our extensive experience operating RTOs, we have found that these units tend to experience some downtime due to systematic problems which normally last for a short period of time. As a safety feature of the RTO system, most of these systematic malfunctions result in temporary shutdown of the system. Restart of the system normally takes between 25 and 35 minutes to complete. These systematic malfunctions are difficult to anticipate and to quantify in terms of frequency.

The second type of bypass is related to necessary and previously scheduled maintenance activities involving bakeouts and washouts. While these activities will normally be scheduled to be conducted during periods when the rest of the plant is down for maintenance, there will be instances where, due to increasing pressure across the RTO, an unscheduled bakeout and/or washout may be necessary to restore normal operating conditions. This may take 8 (bakeout) to 72 hours (washout) to complete.

Finally, another possible instance of bypass can occur during plant start-up, when the RTO system does not respond accordingly. We understand that the proposed MACT for the Wood Products Manufacturing sector (Plywood and Composite Wood MACT), like most MACT standards, will include a section that will address start-up, shutdown, and malfunction (SSM) periods, accordingly.

4. *In which document did you find SCC 30701001, Flake Dryer,and SCC 30701053, Press Operations?*

Response:

The SCC codes were found on EPA's CHIEF air emissions database at the internet address, www.epa.gov/ttn/chief/scccodes.html.

5. *A quick scan of EPA data shows possible VOC removal efficiency of 95% for waferboard dryer (SCC 30700704), and 99% for particleboard drying (SCC 30700703). Please explain why these would not be the best controlled similar sources for MACT purposes.*

Response:

The VOC control technologies listed in EPAs RACT/BACT/LAER Clearinghouse include both RTO and regenerative catalytic oxidation (RCO) technology. The control efficiencies documented in the Clearinghouse vary greatly for the use of these technologies. It should also be noted that the control efficiencies for some HAPs are likely to be higher than what is estimated for total VOCs, while the control efficiencies for other HAPs may be lower. As such, the control efficiency ascribed to the selected technology should be designated based on what is consistently achievable by that technology in the given application. Accordingly, as noted on Page G-15 of Attachment G of the PSD permit application,

> *"It should be noted that information in the RBLC...indicates that...facilities can achieve VOC removal efficiencies in excess of 90% using RTOs. Georgia-Pacific believes that similar efficiencies may be achieved in practice by the RTOs proposed for Hosford. However, for permitting purposes, Georgia-Pacific is proposing a removal efficiency of 90%, consistent with at least three entries in the RBLC"*

In addition, 40 CFR 63.43(d)(4), Principles of MACT Determination, states:

> *"If the Administrator has either proposed a relevant emission standard pursuant to section 112(d) or section 112(h) of the Act or adopted a presumptive MACT determination which includes the constructed or reconstructed major source, then the MACT requirements applied to the constructed or reconstructed major source shall have considered those MACT emission limitations and requirements of the proposed standard or presumptive MACT determination."*

Rulemaking activity on the Plywood and Composite Wood MACT has been well underway for some time and EPA staff and its contractor are in the final stages of drafting the proposed rule, which is slated for presentation to the Office of Management and Budget (OMB) in September 2000 and for formal proposal in the Federal Register in November 2000. EPA has reviewed the relevant technologies and has openly shared, with industry and others, their intent to propose a standard for OSB dryers and presses based on RTOs/RCOs at a 90% HAP reduction level. As such, EPA has, in effect, adopted a presumptive MACT determination for this source category. The EPA project manager for this source category is Ms. Mary Tom Kissell. Ms. Kissell can be reached by phone at (919/541-4516) or via e-mail at kissell.mary@epa.gov. We understand that both EPA and its contract staff have already confirmed these details to several state agencies in conjunction with other projects.

ATTACHMENT 1
Supplemental HAP Emissions Estimates

Additional controlled HAP emissions from the dryer and press RTOs (NCASI Technical Bulletin 772)

RTO-controlled Dryer Emissions (Oven-dried tons = 25,124 OD lbs/hour/dryer x 5 dryers x 8760 hours/year x ton/2000 lbs = 550,216 ODT/year):

Formaldehyde (from vendor, see Attachment B of application)	8.1 tpy
Acetaldehyde (NCASI TB 772, Mill 410, 1.5E-2 lb/ODT)	4.1 tpy
Methanol (NCASI TB 772, Mill 410, 8.9E-3 lb/ODT)	2.4 tpy
Phenol (NCASI TB 772, Mill 410, 1.7E-2 lb/ODT (average Mill 145 0.026 lb/ODT and Mill 410 0.0073 lb/ODT)	4.6 tpy

RTO-controlled Press Emissions:

Formaldehyde (from vendor, see Attachment B of application)	1.1 tpy
Phenol (NCASI TB 772, Mill 145, 5.4E-3 lb/MSF)	1.3 tpy

Blend House (from Attachment B of application):

Formaldehyde	0.4 tpy

Finished Product Storage (from Attachment B of application):

Formaldehyde	0.2 tpy

Thermal Oil System (attached):

Total Controlled HAPs	1.5 tpy

Total formaldehyde (w/thermal oil system exhaust exiting via dryer RTO) = 8.1 (dryer RTO, including thermal oil exhaust) + 1.1 tpy (press RTO) + 0.4 tpy (blend house) + 0.2 tpy (storage) = 9.8 tpy

All other individual HAPs are much less than 10 tpy total (less than 10 tpy)

Total HAPs (w/thermal oil system exhaust exiting via dryer RTO) = 19.2 tpy (dryer RTO, including formaldehyde from thermal oil system) + 2.4 tpy (press RTO) + 0.4 tpy (blend house) + 0.2 tpy (storage) + 1.5 tpy (thermal oil system) = 23.7 tpy (less than 25 tpy)

If thermal oil system operated in bypass mode more than about 500 hours per year, then the individual HAP threshold of 10 tpy would be exceeded for formaldehyde; if the system operated in bypass mode more than about 3300 hours per year, then the total HAP threshold of 25 tpy would be excceded.

Summary of Emissions from Hot Oil Heater, G-P Hosford OSB (revised July 2000)						
				Emission Rates (a)		
	Uncontrolled (b)			Uncontrolled	Controlled	
Substance	Emission Factor			(lb/hr)	(lb/hr) (c)	(tpy)
Particulate Matter (PM/PM10)	1.0E-01	lb/MMBtu	(1)	--	8.0	(included in Dryer RTO calcs)
Nitrogen Oxides	2.0E-01	lb/MMBtu	(2)	16.0	16.0	(included in Dryer RTO calcs)
Sulfur Dioxide	2.4E-02	lb/MMBtu	(2)	1.9	1.9	8.4
Carbon Monoxide	1.6E-01	lb/MMBtu	(2)	12.44	12.4	(included in Dryer RTO calcs)
<u>HAPs</u>						
2,3,7,8-Tetrachlorodibenzo-p-dioxins	7.9E-12	lb/MMBtu	(2)	6.32E-10	6.32E-11	2.77E-10
2,3,7,8-Tetrachlorodibenzo-p-furans	1.1E-10	lb/MMBtu	(2)	8.80E-09	8.80E-10	3.85E-09
2,4,6-Trichlorophenol	2.2E-07	lb/MMBtu	(2)	1.76E-05	1.76E-06	7.71E-06
2,4-Dinitotoluene	9.4E-07	lb/MMBtu	(2)	7.52E-05	7.52E-06	3.29E-05
2,4-Dinitrophenol	4.8E-07	lb/MMBtu	(2)	3.84E-05	3.84E-06	1.68E-05
2-Butanone (MEK)	1.3E-05	lb/MMBtu	(2)	1.04E-03	1.04E-04	4.56E-04
4-Nitrophenol	3.3E-07	lb/MMBtu	(2)	2.64E-05	2.64E-06	1.16E-05
Acetaldehyde	8.5E-03	lb/MMBtu	(2)	6.80E-01	6.80E-02	2.98E-01
Acetophenone	3.2E-09	lb/MMBtu	(2)	2.56E-07	2.56E-08	1.12E-07
Acrolein	3.0E-03	lb/MMBtu	(2)	2.40E-01	2.40E-02	1.05E-01
Arsenic	2.0E-05	lb/MMBtu	(2)	1.60E-03	2.40E-04	1.05E-03
Benzene	3.9E-03	lb/MMBtu	(2)	3.12E-01	3.12E-02	1.37E-01
Beryllium	1.5E-06	lb/MMBtu	(2)	1.20E-04	1.80E-05	7.88E-05
Cadmium	3.7E-06	lb/MMBtu	(2)	2.96E-04	4.44E-05	1.94E-04
Carbon tetrachloride	2.8E-05	lb/MMBtu	(2)	2.24E-03	2.24E-04	9.81E-04
Chlorine	6.0E-04	lb/MMBtu	(2)	4.80E-02	4.80E-03	2.10E-02
Chlorobenzene	1.7E-05	lb/MMBtu	(2)	1.36E-03	1.36E-04	5.96E-04
Chloroform	2.7E-05	lb/MMBtu	(2)	2.16E-03	2.16E-04	9.46E-04
Chromium, hexavalent	9.3E-04	lb/MMBtu	(2)	7.44E-02	1.12E-02	4.89E-02
Chromium, total	2.1E-05	lb/MMBtu	(2)	1.68E-03	2.52E-04	1.10E-03
Cobalt	6.6E-06	lb/MMBtu	(2)	5.28E-04	7.92E-05	3.47E-04
Dichlorobenzene	3.4E-07	lb/MMBtu	(2)	2.72E-05	2.72E-06	1.19E-05
Dichloromethane	2.9E-04	lb/MMBtu	(2)	2.32E-02	2.32E-03	1.02E-02
Ethylbenzene	3.1E-05	lb/MMBtu	(2)	2.48E-03	2.48E-04	1.09E-03
Formaldehyde	9.6E-03	lb/MMBtu	(2)	7.68E-01	7.68E-02	(included in Dryer RTO calcs)
Hexachlorobenzene	5.2E-07	lb/MMBtu	(2)	4.16E-05	4.16E-06	1.82E-05
Hydrogen chloride	2.0E-02	lb/MMBtu	(2)	1.60E+00	1.60E-01	7.01E-01
Lead	4.8E-05	lb/MMBtu	(2)	3.84E-03	5.76E-04	2.52E-03
Manganese	1.4E-03	lb/MMBtu	(2)	1.12E-01	1.68E-02	7.36E-02
Mercury	4.5E-06	lb/MMBtu	(2)	3.60E-04	5.40E-05	2.37E-04
Naphthalene	1.3E-04	lb/MMBtu	(2)	1.04E-02	1.04E-03	4.56E-03
Nickel	3.0E-05	lb/MMBtu	(2)	2.40E-03	3.60E-04	1.58E-03
Pentachlorophenol	2.4E-07	lb/MMBtu	(2)	1.92E-05	1.92E-06	8.41E-06
Phenol	2.8E-04	lb/MMBtu	(2)	2.24E-02	2.24E-03	9.81E-03

Summary of Emissions from Hot Oil Heater, G-P Hosford OSB (revised July 2000)						
				Emission Rates (a)		
	Uncontrolled (b)			Uncontrolled	Controlled	
Substance	Emission Factor			(lb/hr)	(lb/hr) (c)	(tpy)
Phosphorus	2.7E-05	lb/MMBtu	(2)	2.16E-03	3.24E-04	1.42E-03
Selenium	5.4E-06	lb/MMBtu	(2)	4.32E-04	6.48E-05	2.84E-04
Styrene	1.9E-03	lb/MMBtu	(2)	1.52E-01	1.52E-02	6.66E-02
Tetrachlorodibenzo-p-dioxins	3.5E-10	lb/MMBtu	(2)	2.80E-08	2.80E-09	1.23E-08
Toluene	6.5E-04	lb/MMBtu	(2)	5.20E-02	5.20E-03	2.28E-02
Trichlorobenzene	3.2E-07	lb/MMBtu	(2)	2.56E-05	2.56E-06	1.12E-05
Trichloroethene	3.2E-05	lb/MMBtu	(2)	2.56E-03	2.56E-04	1.12E-03
Trichlorophenols	2.7E-07	lb/MMBtu	(2)	2.16E-05	2.16E-06	9.46E-06
Vinyl Chloride	1.3E-05	lb/MMBtu	(2)	1.04E-03	1.04E-04	4.56E-04
o-Xylene	2.2E-05	lb/MMBtu	(2)	1.76E-03	1.76E-04	7.71E-04
m,p-Xylene	1.8E-05	lb/MMBtu	(2)	1.44E-03	1.44E-04	6.31E-04
Total HAPs				1.39	0.42	1.51

Notes

(a) Short Term Emission rates reflect maximum hourly design on 80 MMBtu/hr on bark
Annual Emissions reflect hourly bark rates for 8,760 hours / yr.

(b) Emission Factors do not reflect the use of the ESP, or RTO.

(c) Controlled emissions reflect a 90% control on volatile organic compounds from RTO, and 85% control on particulates from RTO or ESP. The calculation for SO2 assumes no control.

References:

(1) ESP Manufacturer guarantee

(2) 1999 **Draft** Compilation of Emission Factors, AP-42 (EPA, 1999). Section 1.6

INTERFOFFICE MEMORANDUM

Date: 16-May-2000 05:27pm
From: Aguilar, Mark J.
MJAGUILA@GAPAC.com
Dept:
Tel No:

To: 'joseph.kahn@dep.state.fl.us' (joseph.kahn@dep.state.fl.us)
CC: Vasquez, Paul J. (PJVASQUE@GAPAC.com)

Subject: Letter from Georgia-Pacific

A signed original will be sent via mail to you.

<<Doc3.doc>>

Mark Aguilar P.E.
Senior Environmental Engineer
Georgia-Pacific Corporation
Environmental Affairs-Technical Support Group
Atlanta, GA
(404) 652-4293

Georgia-Pacific

133 Peachtree Street
Atlanta, GA 30303
May 16, 2000

Mr. Joseph Kahn, P.E.
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Proposed Hosford OSB Plant DEP File No. 0770010-001-AC(PSD-FL-282)

Dear Mr. Kahn:

Georgia-Pacific Corporation (G-P) thanks you for your cooperation to date on this project. G-P is preparing a submittal to address all of the concerns identified in letters from you and Ms. Cindy Phillips. However, at this time, G-P is still reviewing additional data from the equipment vendors. As you and I have discussed over the telephone, G-P requests an additional 60 days to respond to the FDEP requests. We desire to submit the information by July 18, 2000.

Please feel free to contact me on this request at (404) 652-4293 or FAX (404) 654-4706. Thank you for your cooperation on this important project.

Sincerely,

Mark J. Aguilar P.E.
Senior Environmental Engineer

Georgia-Pacific Corporation

Cc: Mr. Paul Vasquez, G-P

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

MAR 31 2000

4 APT-ARB

Mr. A. A. Linero, P.E.
Administrator
New Source Review Section
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

SUBJ: PSD Permit Application for Georgia-Pacific Corporation Oriented Strandboard (OSB) Plant located near Hosford (Liberty County), Florida
PSD-FL-282

Dear Mr. Linero:

Thank you for sending the permit application dated January 24, 2000, for the above referenced facility. The proposed project involves the construction and operation of an OSB facility near Hosford, Florida in northeastern Liberty County. The new facility will consist primarily of five dryers, a press, a thermal oil heating system, and associated materials handling equipment. It will have the capacity to produce 475 million square feet per year of OSB (on a 3/8-inch basis). Total emissions of particulate matter, both total and that less than 10 microns in diameter (PM_{10}), volatile organic compounds (VOC), carbon monoxide, and oxides of nitrogen (NO_X) from the proposed project are above the respective significance thresholds requiring Prevention of Significant Deterioration (PSD) review.

Provided below are two sets of comments; the first set covers topics other than the air impact assessment whereas the second set pertains specifically to the air impact assessment. Based on a review of the permit application, the U.S. Environmental Protection Agency (EPA) has the following comments:

1. In the Best Available Control Technology (BACT) analyses section of the permit application (Section G.5.2 of Attachment G), several control options have been eliminated on the basis of being too "costly" without any justification. For example, dryer exhaust recycle was eliminated as a potential control of organic emissions (i.e., VOC) in part because "the high temperature heat exchanger...requires costly materials of construction." Also, "sacrificial bed" pre-filters were eliminated in part because "the required maintenance is costly" for a similar application at another Georgia-

Pacific (GP) facility located in Monticello, Georgia. For a control option to be eliminated on the basis of being cost prohibitive, there must be accompanying cost analyses (including average cost effectiveness) which justify such a claim.

2. It appears that the "top down" approach was not used with regard to the selection of BACT for the control of NO_X emissions from the press. The BACT analysis (Section G.6.4 of Attachment G) simply states that low-NO_X burner design in combination with fuel enhancement will comprise BACT for the press without any discussions or rankings of other potential control options [e.g., selective catalytic reduction (SCR) and selective non-catalytic reduction (SNCR)]. Do the designs/layouts of the press and thermal oil heater create the same problems as those detailed for the dryers (Section G.5.2 of Attachment G) with respect to SCR or SNCR?

3. In the portion of the permit application which details the methodologies used to quantify emissions (Section 4, *Emission Rates*), it is stated that combustion emissions were estimated using AP-42 emission factors for wood firing because "in all cases, the emission factors for wood firing are higher than for natural gas firing." While verifying this claim with respect to NO_X emissions, EPA noted that the emission factor that was used (0.167 lb/MMBtu, converted from 1.5 lb/ton) was taken from a section of AP-42 dated 2/99 (Chapter 1, Section 1.6, *Wood Waste Combustion In Boilers*, Table 1.6-2). There is also a revised draft version of this section dated 9/99 which shows the NO_X emission factor for "bark and wet wood-fired boilers" to be 0.20 lb/MMBtu. It should be noted that this revised factor has a more reliable rating of "B" (versus "C" for the older factor). Consequently, this newer factor would increase the potential emissions of NO_X (related to wood combustion) by approximately 17 percent. This difference in emission rates may also have an impact on modeling and the air quality analysis. Therefore, EPA strongly recommends that all emissions be re-evaluated using the latest emission factors available, particularly those related to wood combustion.

Regarding the air quality impact assessment provided in support of the GP permit application, EPA has the following comments. Each of these issues has been discussed with the Florida Department of Environmental Protection.

1. Site Boundary - The site boundary used in the impact modeling should be land owned or controlled by GP with physical barrier to public access. The criteria used to define the modeled site boundary should be provided.

2. Emission Inventory - The following are comments concerning the inventory of other emission sources used in the cumulative PSD increment and National Ambient Air Quality Standards (NAAQS) compliance modeling.

- Although 50 kilometers (km) is the guideline distance beyond the significant impact area (SIA) for source inclusion in an emission inventory, very large sources just outside this range with a significant impact in the SIA should also be included. All emission sources more than 50 km from the SIA have been removed from the inventories (Tables 4 and 7) without impact consideration.

- The 43 Englehard emission sources provided in Table 6 were combined into one representative source for the cumulative impact modeling. A review of the emission characteristics of the Englehard sources indicates they would be better represented by merging into five to ten sources. This is especially true considering the relatively small number of other NAAQS and PSD sources in the modeled emission inventory (Table 5).

- Fugitive emissions were neither addressed nor included in the impact modeling.

- Although the PSD Class II increment consuming sources (Table 9) are a subset of the NAAQS emission inventory (Tables 5 and 8), different emission rates and exit variables exist for some of the PSD sources. The bases for these differences should be provide.

- The emission inventory for the Class I PSD cumulative assessment was not provided. Because emission sources about the Class I area are of concern in this assessment, the Class I emission inventory may include additional sources not included in the Class II PSD assessment.

3. PM_{10} NAAQS Compliance Standard - Although the highest second-highest value used for the 24-hour compliance assessment provides conservatively larger concentrations, the current PM_{10} NAAQS compliance standard when a 5-year data record is used is the sixth-highest 24-hour value at any receptor.

4. Visibility Impairment - The assessment of visibility impairment is not limited to Class I areas. This assessment should be performed in the impact area with particular emphasis at locations of sensitive receptors (e.g., scenic vistas, nearby airports, etc.).

5. Class I Area Visibility - The assessment of visibility at St. Marks National Wildlife Area used the highest second-highest modeled concentration. The largest modeled concentration should be used for this assessment.

6. Receptor Grid Resolution - The selected modeling grids for the determination of PSD increment and NAAQS compliance were not to 100-meters resolution.

Thank you for the opportunity to comment on the GP permit application. If you have any questions regarding these comments, please direct them to either Art Hofmeister at (404) 562-9115 or Jim Little at (404) 562-9118.

Sincerely,

Douglas Neeley

R. Douglas Neeley, Chief
Air and Radiation Technology Branch
Air, Pesticides and Toxics
Management Division

cc: J. Kahn
NWD
NPS
C. Holladay
R. Paul, GA-Pacific

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

March 21, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ronald L. Paul
Exec. V. P., Wood Products and Distribution
Georgia-Pacific Corporation
133 Peachtree St.
Atlanta, Georgia 30303

Re: Request for Additional Information – EPA Comments
DEP File No. 0770010-001-AC (PSD-FL-282)
Proposed Hosford OSB Plant

Dear Mr. Paul:

On February 18, 2000 the Department advised you that your application for an air construction/PSD permit for a proposed new OSB plant near Hosford, Florida was incomplete and we requested additional information. We recently received comments from the U.S. Environmental Protection Agency related to the modeling performed in support of the application. In order to complete our review we request that you respond to EPA's comments which are summarized below. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. Please provide information that shows that the site boundary used in the impact modeling will be land owned or controlled by Georgia Pacific with a physical barrier to public access.
2. Please reevaluate the emission inventory for competing NO_X and PM_{10} sources to examine the possibility of including sources that are located more than 50 km from the Significant Impact Area (SIA). The current emission inventory disregards sources beyond this distance without examining the magnitude of their emissions. The 20D Rule may be used to prove the insignificance of these sources if they are not located in a close proximity to one another.
3. Please combine the Englehard emission sources into 5 to 10 representative sources, instead of combining them into one single source. This should be done by considering the similarity of source parameters such as location, stack height, exit temperature, and diameter.
4. Please update and provide the emission inventory used for the Class I PSD cumulative assessment. Because emission sources around the Class I areas are of concern in this assessment, the Class I emission inventory may include additional sources not contained in the Class II PSD assessment.
5. Please reevaluate 24-hour PM_{10} impacts by using the current compliance standard. The current 24-hour PM10 compliance standard is the highest 6th highest 24-hour value at any receptor when a 5-year data record is used.
6. Please evaluate visibility impairment in the SIA. The assessment of visibility impairment (coherent plume) is not limited to Class I areas. This assessment should be performed in the impact area with particular emphasis at locations of sensitive receptors e.g., scenic vistas, nearby airports, etc.
7. The assessment of visibility at St. Marks NWA used the high second-highest modeled concentration. The proper value to use for this assessment is the highest modeled concentration. Please use the highest modeled concentration when you conduct the refined regional haze analysis for the St. Marks NWA. The second-highest modeled concentration may be used in PSD and NAAQS analyses only.

8. Although the PSD Class II increment consuming sources (Table 9) are a subset of the complete NAAQS emission inventory (Tables 5 and 8), differences are noted in some of the emission rates and stack parameters for the PSD emission sources. Please provide the reason for these differences.

9. Please utilize a grid that has a 100-meter resolution around the maximum predicted concentration for all SIA, PSD increment, and NAAQS modeling.

The Department will complete its review after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Material changes to the application should also be accompanied by a new certification statement by the authorized representative or responsible official. If there are any questions, please call me at 850/921-9519. Matters regarding modeling issues should be directed to Chris Carlson (meteorologist) at 850/921-9537.

Sincerely,

Joseph Kahn, P.E.
New Source Review Section

/jk

cc: Mr. Gregg Worley, EPA
Mr. John Bunyak, NPS
Mr. Ed Middleswart, NWD
Mr. Mark Aguilar, P.E., Georgia-Pacific Corp.

Z 031 391 886

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PS Form **3800**, April 1995

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Mr. Ronald L. Paul
Ga-Pacific Corp
133 Peachtree St.
Atlanta, GA 30303

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Golder Associates Inc.

6241 NW 23rd Street, Suite 500
Gainesville, FL 32653-1500
Telephone (352) 336-5600
Fax (352) 336-6603

Golder Associates

February 18, 2000

0037506A/1

Mr. Cleve Holladay
Bureau of Air Quality Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RE: AIR MODELING PROTOCOL TO CONDUCT A REFINED REGIONAL HAZE ANALYSES FOR THE PROPOSED G-P HOSFORD PLANT

Dear Cleve:

On behalf of Georgia-Pacific Corporation (G-P), Golder Associates Inc. (Golder) is providing this air modeling protocol to the Florida Department of Environmental Protection (FDEP) for performing a refined regional haze analysis, requested by the FDEP for the proposed G-P Hosford Plant. The purpose of the protocol is to ensure that the analyses is performed in a manner conforming to FDEP and U.S. Fish and Wildlife Service (USFWS) requirements.

The analysis will assess the potential effect on the existing regional haze levels at the St. Marks National Wilderness Area (SMNWA). The SMNWA is a Prevention of Significant Deterioration (PSD) Class I area located approximately 57 km southeast of the proposed facility site. Based on previous telephone communications between G-P, Golder, and FDEP, this refined analysis is to assess the regional haze impacts at the SMNWA exclusively.

The refined modeling analysis will follow those procedures recommended in the Interagency Workgroup on Air Quality Modeling (IWAQM) Phase II report dated December 1998 and in the Federal Land Managers' Air Quality Related Values Workgroup (FLAG) Draft Phase I report dated October 1999, in coordination with the FDEP. This protocol includes a discussion of the databases to be used in the analysis, the preparation of the modeling databases for introduction into the modeling system, the air modeling methodology, and the presentation of the air modeling results. The proposed model parameter settings are discussed below.

Model Selection

The California Puff (CALPUFF, version 5.0) air modeling system will be used to model G-P's proposed facility and assess potential visibility impairment at the SMNWA. CALPUFF is a non-steady state Lagrangian Gaussian puff long-range transport model that includes algorithms for building downwash effects as well as chemical transformations (important for pollutants affecting visibility), and wet/dry deposition. The CALMET model, a preprocessor to CALPUFF, is a diagnostic meteorological model that produces a three-dimensional field of wind and temperature and a two-dimensional field of other meteorological parameters. Simply, CALMET was designed to process raw meteorological, terrain, and land-use databases to be used in the air modeling analysis. The CALPUFF modeling system uses a number of FORTRAN preprocessor programs that extract data from large databases and converts the data into formats suitable for input to CALMET.. The processed data produced from CALMET will be input to CALPUFF to assess the pollutant specific impact. Both CALMET and CALPUFF will be used in a manner that is recommended by the IWAQM Phase 2 Report. The proposed analysis will also be based on experience obtained with other recently completed CALPUFF refined modeling analyses in Oregon (Golder, July 1999).

Source Parameters and Emission Rates

The stack parameter and emission rates from the proposed facility are presented in G-P's Prevention of Significant Deterioration Air Permit Application for G-P Hosford, submitted to FDEP in January 2000 (hereinafter referred to as the PSD Application). The proposed facility's emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x), and particulate matter (PM_{10}) will be included in the refined modeling analysis. The modeling analysis will conservatively assume 100% conversion of NOx emissions to NO_2.

Building Wake Effects

The air modeling analysis will address the potential for building-induced downwash to occur at the proposed facility. Dimensions for all significant building structures, as determined by the Building Profile Input Program (BPIP, version 95086), will be included in CALPUFF model. These building dimensions are the same as those provided in the PSD Application.

Modeling Methodology

The analysis for regional haze will be performed using the refined procedure that is outlined in the IWAQM Phase 2 report. The maximum predicted 24-hour concentrations from the proposed facility will be applied to calculate the maximum change in light extinction. The calculated values will be compared to a threshold of five percent change in light extinction over the background level. Based on prior discussions with the USFWS, the background extinction coefficient for the SMNWR is 60.18 Mm^{-1}, and is equivalent to a conservative visual range of 65 km.

The CALPUFF model will be used to predict 24-hour concentrations of nitrates (NO_3), sulfates (SO_4) and PM_{10} for each day of the year. Based on the procedures provided in the IWAQM Phase II summary report, concentrations of NH_4 NO_3 and $(NH_4)_2SO_4$ will be determined by multiplying the maximum predicted NO_3 and SO_4 concentrations by factors of 1.29 and 1.375, respectively (i.e., based on the ratio of the molecular weights). Daily source extinction coefficients will be determined by multiplying the daily calculated concentrations of NH_4 NO_3 and $(NH_4)_2SO_4$ by calculated daily average relative humidity factors. The relative humidity factor represents the average relative humidity factor corresponding to each hour from the 24 hour period in which a maximum species pollutant impact occurred. The daily PM_{10} concentrations, because it does not chemically transform into another pollutant species and it is a non-hygroscopic pollutant, will then be added to the daily sums for the other pollutants. The maximum daily source extinction coefficient will be used directly to determine whether the proposed facility's emissions will exceed a 5 percent change in light extinction of the background levels.

Receptor Locations

The CALPUFF refined analysis will use an array of discrete Cartesian receptors at appropriate distances to ensure sufficient density and aerial extent to adequately characterize the pattern of pollutant impacts in the SMNWA. Specifically, the array will consist of receptor spacing of 2 km at the boundary and inside the PSD Class I area. Because the terrain elevation at the G-P Hosford site of 185 feet is significant higher than the elevation at the SMNWA, the actual G-P site elevation will be used in the analysis. A receptor elevation of zero will be assigned to each of the SMNWA receptors.

Modeling Domain

The modeling domain defines the boundary of plume simulation area. The modeling domain to be used for the analysis will be in the shape of a rectangle extending approximately 475 km in the east-west (x) direction and 300 km in the north-south (y) direction. The southwest corner of the rectangle will be the origin of the modeling domain and is located at 29.25 N degrees latitude and 81.5 W degrees longitude.

For the processing of meteorological and geophysical data, 95 grid cells will be used in the x-direction and 60 grid cells will be used in the y-direction. A 5-km grid spacing will be used. The air modeling analysis will be performed with the UTM coordinate system.

Mesoscale Model – Generation 4 (MM4) Data

Pennsylvania State University in conjunction with the NCAR Assessment Laboratory developed the MM4 data, a prognostic wind field or "guess" field, for the United States (U.S.). The hourly meteorological variables used to create this data set (wind, temperature, dew point depression, and geopotential height for eight standard levels and up to 15 significant levels) are extensive and only allow for one data base set for the year 1990. The analysis will use the MM4 data to initialize the CALMET wind field. The MM4 data have a horizontal spacing of 80 km and are used to simulate atmospheric variables within the modeling domain.

To apply the MM4 dataset to a regional modeling domain, such as the area that will incorporate G-P's proposed facility and the SMNWA, a sub-set domain will be developed based on the MM4 data local coordinate system. In this coordinate system, the subset domain will consist of a 8 x 6- cell rectangle, spaced at 80 km, extending from MM4 coordinates (45,13) to (52,18). These data will be processed to create a MM4.Dat file, which will be input to the CALMET model.

Composite Receptor Array and CALMET Domain
Figure 1 illustrates the relationship between CALPUFF modeling domain, the MM4 prognostic wind field domain and the approximate source and receptor locations.

Additional Data
The MM4 data set used in the CALMET, although advanced, lacks the fine detail of specific temporal and spatial meteorological variables and geophysical data. These variables will be processed into the appropriate format and introduced into the CALMET model through the additional data files. Additional meteorological data will include surface, upper air, and precipitation observations. Geophysical data will include topography and land use.

Surface Data Stations
The surface data processing will include the following seven primary weather stations that exist within or surround the modeling domain. These stations include Jacksonville, Gainesville, Tallahassee, and Tampa in Florida; Columbus and Macon in Georgia; and Mobile and Montgomery in Alabama. The parameters to be included for these stations are wind speed, wind direction, cloud ceiling height, opaque cloud cover, dry bulb temperature, relative humidity, station pressure and precipitation code that is based on current weather conditions. The weather station data for all stations but Gainesville will be downloaded for the year 1990 from the National Climatic Data Center's (NCDC) Solar and Meteorological Surface Observational Network (SAMSON) CD-ROM set. The surface data from Gainesville will be processed from NCDC CD-144 format. The data will be processed with the CALMET preprocessor utility program, SMERGE, to create one surface file. SURF.DAT. Because the air modeling domain extends of the Gulf of Mexico, surface observations from the Cape San Blas C-MAN station will be included in the analysis. The data will be converted into overwater surface station format for input to CALMET.

Upper Air Data Processing
Upper air data will be processed from four to three weather stations. The three stations that will be included are Apalachicola and Tampa Bay/Ruskin in Florida; and Waycross in Georgia. The upper air data will be obtained from the NCDC Radiosonde Data CD and processed into the NCDC Tape Deck (TD) 6201 format by the CALMET preprocessor utility program, READ62, to create an upper air file for each station.

Precipitation Data Processing
Precipitation data will be processed from a network of 32 hourly precipitation data files collected from primary and secondary NWS precipitation recording stations located in southern Alabama, southern Georgia and northern Florida. The stations will be selected so as to provide detailed coverage in all areas in and around the modeling domain. The data will be extracted from hourly data records obtained by the NCDC and organized by EarthInfo. These data will be extracted and processed into Tape Deck (TD) 3240 format. The CALPUFF preprocessor utility programs PXTRACT and PMERGE will be used to extract and merge, respectively, the hourly precipitation data into CALMET input format.

Geophysical Data Processing
Terrain elevations for each grid cell of the modeling domain will be obtained from 1-degree Digital Elevation Model (DEM) files obtained from US Geographical Survey (USGS). The DEM data for the modeling domain grid will be processed using the utility program TERREL. One-degree land-use data will also be obtained from the USGS. Land-use parameters for the modeling domain will be processed using the CALMET preprocessor utility programs CTGComp and GTGPROC. Other parameters to be processed include surface roughness, surface albedo, Bowen ratio, soil heat flux, and leaf index field. All of the processed land-use parameters will be combined with the terrain information and input to CALMET.

CALPUFF Settings
The following CALPUFF settings/values as defined in IWAQM Phase II are to be used for the refined modeling analysis:

Parameter	Setting
Six Pollutant Species	SO_2, SO_4, NO_x, HNO_3, NO_3 and PM_{10}
Chemical Transformation	MESOPUFF II scheme with CALPUFF
Deposition	Use dry and wet deposition, plume
Meteorological/Land Use	CALMET
Plume Rise	Transitional, Stack-tip downwash, Partial
Dispersion	Puff plume element, PG /MP coefficients,
Terrain Effects	Partial plume path adjustment
Output	Create binary file: output species SO_4, PM_{10},
Model Processing	Highest concentrations predicted for year
Default Background	Ozone: 80 ppb; Ammonia: 10 ppb

Should you have any questions or comments on the protocol, please contact me. Golder greatly appreciates the cooperation of the FDEP staff on this project.

Sincerely yours,

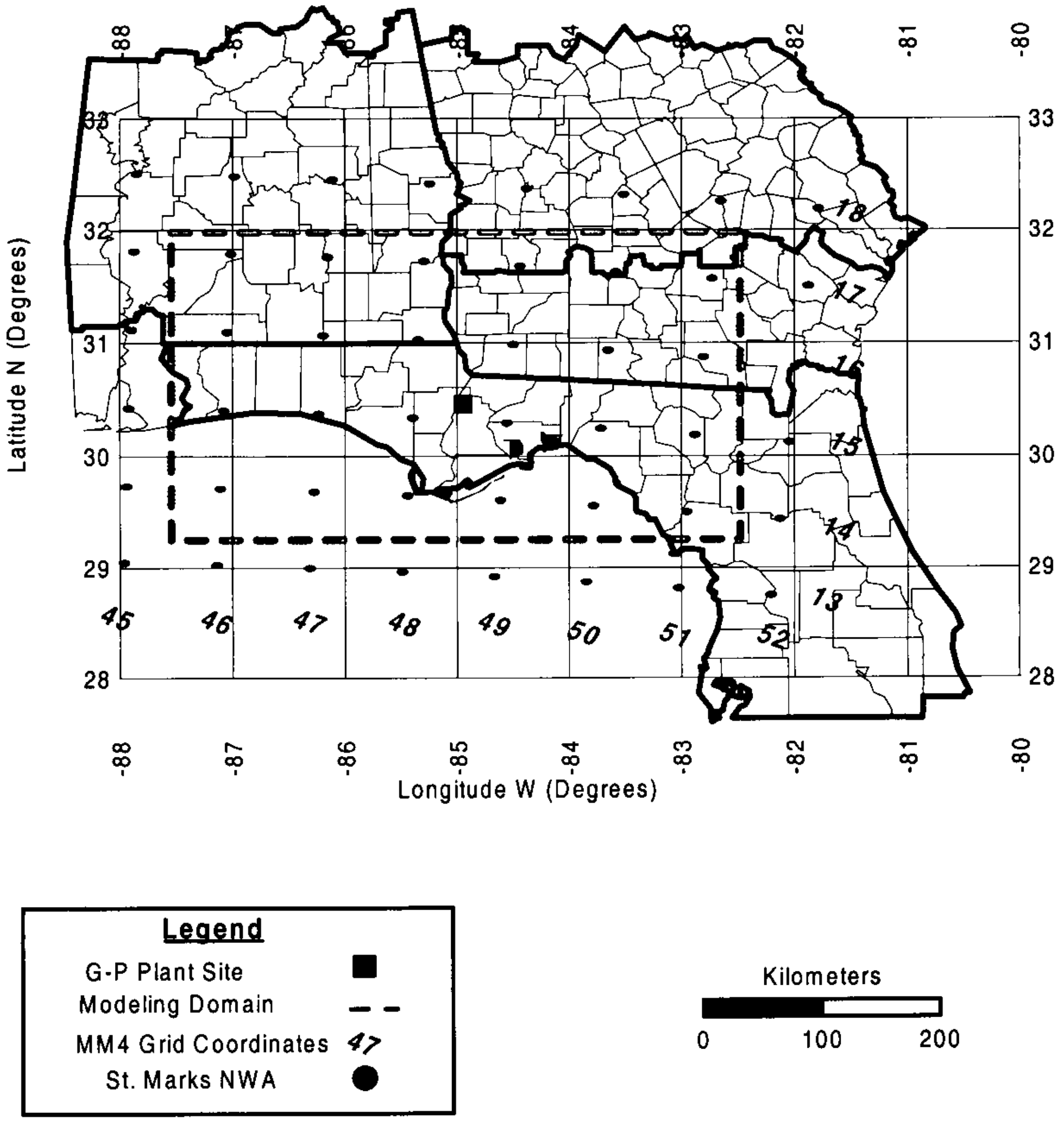
Steven R. Marks, CCM
Senior Scientist

cc: M.J. Aguilar, G-P Atlanta
A. Meng, FDEP
B. Rolofson, USFWS – e mailed by DEP per applicant's request
E. Porter, USFWS – e mailed by DEP per applicant's request

P:\Projects\2000\0037\0037506A\01\#01-ltr.doc

NWD
C. Carlson
NPS
EPA

Figure 1. Map of Modeling Domain
Refined Regional Haze Analysis
St. Marks National Wilderness Area



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

February 18, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ronald L. Paul
Exec. V. P., Wood Products and Distribution
Georgia-Pacific Corporation
133 Peachtree St.
Atlanta, Georgia 30303

Re: Request for Additional Information
DEP File No. 0770010-001-AC (PSD-FL-282)
Proposed Hosford OSB Plant

Dear Mr. Paul:

On January 21, 2000 the Department received your application and complete fee for an air construction/PSD permit for a proposed new OSB plant near Hosford, Florida. We are processing your application, but it is incomplete. In order to complete our review we will need the additional information requested below. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. The application information states that fugitive sources are not required for evaluating PSD applicability. Rule 62-212.400(2)(b), F.A.C., provides for exemption of fugitive emissions from the determination of whether this facility is major for PSD, but Rule 62-212.400(2)(f), F.A.C., requires fugitive emissions be included in determining which pollutants equal or exceed the significant emission rate. The facility is major because of VOC potential emissions, and is significant for PM and PM_{10}, CO and NOx. Please address the PSD requirements of Rule 62-212.400, F.A.C., for PM and PM_{10} and VOC. Include an analysis of BACT for PM and PM_{10}, visible emissions, and VOC, and an air quality analysis, that take into account all quantifiable fugitive emissions from the proposed facility.

2. The Class I Significant Impact and Increment analyses do not include receptors in the western portion of the St. Marks National Wildlife Refuge. Please submit Class I Significant Impact and Increment analyses that utilize these receptors.

3. Please submit a report that describes the procedures utilized in the CALPUFF analysis that was conducted for the Bradwell Bay and St. Marks Class I Areas.

4. The application information states that during normal operations exhaust gases from the thermal oil system will be routed through the dryer system and the associated multiclones and RTOs. Under what conditions will these exhaust gases bypass this route and be emitted through EP-10, and what is the expected duration of these conditions?

5. What is the fuel consumption rate for the regenerative thermal oxidizers?

6. The SCC numbers for emissions unit 010 are for the electric generation industry. SCC numbers such as 1-03-009-02 and 1-03-006-02 for commercial/institutional external combustion sources may be appropriate. Please confirm these codes are appropriate or suggest other codes.

7. Please provide a copy of any available NCASI information that may be used to estimate emissions, either controlled or uncontrolled, from the drying and press operations.

8. Please provide a copy of the BACT determinations and construction permits for the G-P facilities in Arkansas and Virginia, and, if possible, the Louisiana Pacific facility in Alabama.

9. Please provide information to support the emission factors used by the vendor to estimate uncontrolled and controlled emissions from the dryers. Interestingly, for particulate matter, VOC and NOx, emission factors from EPA's AP-42 section 10.6.1 result in much lower estimated emissions than estimated by the dryer vendor. Please address this as part of your response.

10. Emission factors from EPA's AP-42 section 10.6.1 result in much lower estimated emissions for VOC emissions from the press than estimated by the stack test data. Please comment and provide supporting information for the stack test used by the vendor, and provide additional stack test data from the same or other facilities. Please provide a description of the equipment and processes used by this plant, and confirm whether this is or is not the Louisiana Pacific facility in Alabama listed in the RBLC database.

11. Information in the RBLC database suggests that other facilities achieve much lower hourly emissions than you have proposed as BACT, particularly for PM_{10}, VOC and NOx from the dryers, and VOC from the press. Please address this and reevaluate the level of emissions proposed for these sources and pollutants.

12. For emissions units 003 through 009, the emission limits you proposed as BACT are higher than recent BACT determinations of the Department. The Department is likely to impose more stringent limits regardless of the vendor's guarantees. For example, the Department recently determined that the BACT emission limit for a planermill controlled by a cyclone and baghouse combination was 0.004 grains per dscf. Please reevaluate the level of emissions proposed for these sources.

13. Enclosed are the preliminary comments from the U.S. Fish and Wildlife Service. We have similar concerns, some of which are reviewed above. Please respond to these comments, particularly the evaluation of acceptable BACT limits and the economic analysis.

14. Additional comments related to the case-by-case MACT determination required for this project will be sent to you by separate letter. Please respond to those comments with your response to the above.

The Department will complete its review after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Material changes to the application should also be accompanied by a new certification statement by the authorized representative or responsible official. Permit applicants are advised that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days. If there are any questions, please call me at 850/921-9519. Matters regarding modeling issues should be directed to Chris Carlson (meteorologist) at 850/921-9537.

Sincerely,

Joseph Kahn, P.E.
New Source Review Section

/jk

cc: Mr. Gregg Worley, EPA
Mr. Ed Middleswart, NWD
Mr. John Bunyak, NPS
Mr. Mark Aguilar, P.E., Georgia-Pacific Corp.

Z 031 391 866

US Postal Service
Receipt for Certified Mail
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Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
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PS Form **3800**, April 1995

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SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Mr. Ronald Paul, Ex. V.P.
Wood Products & Distribution
Ga-Pacific Corp
133 Peachtree St.
Atlanta, GA 30303

4a. Article Number
Z 031 391 866

4b. Service Type
☐ Registered ☒ Certified
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7. Date of Delivery

5. Received By: *(Print Name)*

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X [signature]

PS Form **3811**, December 1994 102595-98-B-0229 Domestic Return Receipt

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

Memorandum

To: Ellen Porter

From: Kirsten King

Re: Georgia Pacific Oriented Strandboard

Date: 2 February 2000

Background
Georgia Pacific proposes to construct an oriented strandboard facility near Hosford Florida. The facility will be comprised of five dryers equipped with TherMec Burners, a board press with two thermal oil heaters each containing one wood fired burner and one natural gas fired burner and a materials handling facility

Proposed Controls

Dryer and Board Press:
We agree with the emissions control equipment choices provided in the BACT analysis, however, the emissions limits provided are, in some cases, significantly higher than acceptable BACT. Table 1 shows the limits proposed by Georgia Pacific.

Table 1: Proposed limits

Equipment	Emissions limit (tpy)	Proposed Emissions Limit (lb/hr)	Emissions limit (lb./MMBTU)
Dryer (200MMBTU/hr max)			
PM/PM10	326.1	74.45	0.37
VOC	553	126.26	0.63
CO	147.15	33.60	0.16
NO_x	321.05	73.3	0.37
Press (80MMBTU/hr max)[1]			
PM/PM10	12.4	2.83	0.035
VOC	87.82	20.05	0.25
CO	31.76	7.25	0.091
NO_x	47	10.73	0.13

[1] The permit does not state the size of the two wood fuel suspension burners used in this process. 40 MMBTU each was assumed.

Table 2:Acceptable BACT limits

Equipment	BACT Emissions Limit (lb./MMBTU)	BACT Emissions Limit (lb./hr)
Dryer (200 MMBTU)		
PM/PM10	0.07	14.0
VOC	0.17	34
CO	0.2	40.0
NO_x	0.2	40.0
Press (80 MMBTU)		
PM/PM10	0.030	2.4
VOC	0.081	6.48
CO	0.379	30.32
NO_x	0.2	16.0

We believe that the limits for the press and the dryer should follow those listed in Table 2. These limits were taken from the RACT/BACT/LAER clearinghouse and a Virginia Georgia Pacific facility for similar technology. Because BACT is an emission limit based standard we propose that the permit reflect BACT emission limits in addition to BACT control technologies.

Economic Analysis:
Though we agree with the selection of BACT technologies made by Georgia Pacific, an economic analysis should have been done to establish the cost of control and support the rejection of SCR as a control technology.

Materials Handling:

For the material handling operations we agree that bagfilters are a BACT control technology, but again we disagree with the proposed emissions limit. The RACT/BACT/LAER clearinghouse indicates that for materials handling at OSB plants using bagfilters the PM limit should be 0.005 gr/dscf rather than 0.01 gr/dscf.

Other issues:
We contacted Steve Proctor from the North Carolina Division of Air Quality regarding the use of SCR on the Wierhauser particle board facility. Because of severe problems in keeping the catalyst clean they have just submitted a new PSD permit removing SCR from the facility.

Conclusions

The overall selection of BACT technology is acceptable in this situation, but the emission limits in some cases are higher than BACT. The Georgia Pacific facility should be able to meet the emissions limits provided above.

FLORIDA

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

February 18, 2000

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Ronald L. Paul
Exec. V. P., Wood Products and Distribution
Georgia-Pacific Corporation
133 Peachtree St.
Atlanta, Georgia 30303

Re: Request for Additional Information – Case-by-case MACT Information
DEP File No. 0770010-001-AC (PSD-FL-282)
Proposed Hosford OSB Plant

Dear Mr. Paul:

On January 21, 2000 the Department received your application and complete fee for an air construction/PSD permit for a proposed new OSB plant near Hosford, Florida. We are processing your application, but it is incomplete. In order to continue our review, in addition to the information requested by Joseph Kahn of the New Source Review Section, we will need the following information related to the case-by-case MACT determination. Should your response to any of the below items require new calculations, please submit the new calculations, assumptions, reference material and appropriate revised pages of the application form.

1. The application states that "The proposed BACT for the dryers and press (see Section 8), regenerative thermal oxidation, satisfies the 112(g) MACT requirement for formaldehyde from these sources." Since a MACT must be proposed by the applicant in accordance with 40 CFR 63.43(e), see attachment, it is assumed that what this statement means is that the applicant wants the proposed BACT to also be considered as the proposed MACT.

   Please review the attachment, "What Information is Needed from the Applicant for a Case-by-Case MACT Determination?" and supply the missing information.

2. In addition to formaldehyde, what other hazardous air pollutants (HAPs) will be emitted from the facility? What will be the potential plantwide emissions of total hazardous air pollutants per year?

3. What events will require the use of the emergency exhausts shown in Figure 3-4a, Process Flow Diagram? How often are these events expected to occur, and of what duration are these events expected to be?

4. In which document did you find SCC 30701001, Flake Dryer, and SCC 30701053, Press Operation?

5. A quick scan of EPA data shows possible VOC removal efficiency of 95% for waferboard dryer (SCC 30700704), and 99% for particleboard drying (SCC 30700703). Please explain why these would not be the best controlled similar sources for MACT purposes.

The Department will continue its review after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. Material changes to the application should also be accompanied by a new certification statement by the authorized representative or responsible official. Permit applicants are advised that Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days.

If there are any questions, please call me at 850/921-9534 or send email to Cindy.Phillips@dep.state.fl.us .

Sincerely,

Cindy L. Phillips

Cindy L. Phillips, P.E.
Air Toxics Unit
Bureau of Air Regulation

attachment

cc: Mr. Gregg Worley, EPA
Mr. Ed Middleswart, NWD
Mr. John Bunyak, NPS
Mr. Mark Aguilar, P.E., Georgia-Pacific Corp.

What Information is Needed from the Applicant for a Case-by-Case MACT Determination?

{REFERENCE: Federal Register / Vol. 61, No. 250 / Friday, December 27, 1996 / Rules and Regulations}

63.43 (d) Principles of MACT determinations. The following general principles shall govern preparation by the owner or operator of each permit application or other application requiring a case-by-case MACT determination concerning construction or reconstruction of a major source, and all subsequent review of and actions taken concerning such an application by the permitting authority:

(1) The MACT emission limitation or MACT requirements recommended by the applicant and approved by the permitting authority shall not be less stringent than the emission control which is achieved in practice by the best controlled similar source, as determined by the permitting authority.

(2) Based upon available information, as defined in this subpart, the MACT emission limitation and control technology (including any requirements under paragraph (d)(3) of this section) recommended by the applicant and approved by the permitting authority shall achieve the maximum degree of reduction in emissions of HAP which can be achieved by utilizing those control technologies that can be identified from the available information, taking into consideration the costs of achieving such emission reduction and any non-air quality health and environmental impacts and energy requirements associated with the emission reduction.

(3) The applicant may recommend a specific design, equipment, work practice, or operational standard, or a combination thereof, and the permitting authority may approve such a standard if the permitting authority specifically determines that it is not feasible to prescribe or enforce an emission limitation under the criteria set forth in section 112(h)(2) of the Act.

(4) If the Administrator has either proposed a relevant emission standard pursuant to section 112(d) or section 112(h) of the Act or adopted a presumptive MACT determination for the source category which includes the constructed or reconstructed major source, then the MACT requirements applied to the constructed or reconstructed major source shall have considered those MACT emission limitations and requirements of the proposed standard or presumptive MACT determination.

(e) Application requirements for a case-by-case MACT determination.

(1) An application for a MACT determination (whether a permit application under title V of the Act, an application for a Notice of MACT Approval, or other document specified by the permitting authority under paragraph (c)(2)(ii) of this section) shall specify a control technology selected by the owner or operator that, if properly operated and maintained, will meet the MACT emission limitation or standard as determined according to the principles set forth in paragraph (d) of this section.

(2) In each instance where a constructed or reconstructed major source would require additional control technology or a change in control technology, the application for a MACT determination shall contain the following information:

(i) The name and address (physical location) of the major source to be constructed or reconstructed;

(ii) A brief description of the major source to be constructed or reconstructed and identification of any listed source category or categories in which it is included;

(iii) The expected commencement date for the construction or reconstruction of the major source;

(iv) The expected completion date for construction or reconstruction of the major source;

(v) the anticipated date of start-up for the constructed or reconstructed major source;

(vi) The HAP emitted by the constructed or reconstructed major source, and the estimated emission rate for each such HAP, to the extent this information is needed by the permitting authority to determine MACT;

(vii) Any federally enforceable emission limitations applicable to the constructed or reconstructed major source;

(viii) The maximum and expected utilization of capacity of the constructed or reconstructed major source, and the associated uncontrolled emission rates for that source, to the extent this information is needed by the permitting authority to determine MACT;

(ix) The controlled emissions for the constructed or reconstructed major source in tons/yr at expected and maximum utilization of capacity, to the extent this information is needed by the permitting authority to determine MACT;

(x) A recommended emission limitation for the constructed or reconstructed major source consistent with the principles set forth in paragraph (d) of this section;

(xi) The selected control technology to meet the recommended MACT emission limitation, including technical information on the design, operation, size, estimated control efficiency of the control technology (and the manufacturer's name, address, telephone number, and relevant specifications and drawings, if requested by the permitting authority);

(xii) Supporting documentation including identification of alternative control technologies considered by the applicant to meet the emission limitation, and analysis of cost and non-air quality health environmental impacts or energy requirements for the selected control technology; and

(xiii) Any other relevant information required pursuant to subpart A.

(3) In each instance where the owner or operator contends that a constructed or reconstructed major source will be in compliance, upon startup, with case-by-case MACT under this subpart without a change in control technology, the application for a MACT determination shall contain the following information:

(i) The information described in paragraphs (e)(2)(i) through (e)(2)(x) of this section; and

(ii) Documentation of the control technology in place.

INTEROFFICE MEMORANDUM

Date: 16-Feb-2000 01:42pm
From: Joseph Kahn TAL
KAHN_J
Dept: Air Resources Management
Tel No: 850/921-9519

To: Ellen_Porter (Ellen_Porter@nps.gov)

Subject: Re: attached comments on GP-Hosford

Ellen,

I finally got the chance to review your comments about GP Hosford and I have a couple of comments. First, it appears that the Table 1 lb/mmBtu emissions limits for the dryers were calculated using 80 mmBtu/hr as the heat input, but the total heat input for the five dryers is 200 mmBtu/hr (40 mmBtu/hr each). This part of the table should be revised using the 200 mmBtu/hr rate. Second, although I agree generally that the applicant's proposed BACT emissions limits appear to be high, the limits of Table 2 seem too low to me. It looks like the limits of Table 2 are the lowest limits from the RBLC database, but they do not appear to have been adjusted for the size (processing/heat input capacity) of the GP Hosford emissions sources. Can you confirm for me whether the Table 2 limits consider the size of the sources?

I plan on including your comments with our request for additional information which we will mail to the applicant by Friday morning. Please get back with me about the above before then if possible. Thanks.

-Joe

INTEROFFICE MEMORANDUM

Date: 16-Feb-2000 08:50pm
From: Kirsten_King
Kirsten_King@nps.gov
Dept:
Tel No:

To: joseph.kahn (joseph.kahn@dep.state.fl.us)
CC: Ellen_Porter (Ellen_Porter@nps.gov)

Subject: Comments on GP-Hosford

Dear Mr.Kahn

You are correct about the 80 MMBTU/hr. I have corrected the lb./hr levels for the dryers. The values for the BACT level emission limit recommendations were in MMBTU/hr from the RACT/BACT/LAER clearinghouse and the Virginia permit, so these should be correct.

Thank you for your help on this. Please let me know if I can help clarify anything else or provide you with additional information.

Kirsten King
kirsten_king@nps.gov
(303)969.2153

I will be out of the office on 2/17 and 2/18, but would be happy to return a phone call.

Memorandum

To: Ellen Porter

From: Kirsten King

Re: Georgia Pacific Oriented Strandboard

Date: 2 February 2000

Background

Georgia Pacific proposes to construct an oriented strandboard facility near Hosford Florida. The facility will be comprised of five dryers equipped with TherMec Burners, a board press with two thermal oil heaters each containing one wood fired burner and one natural gas fired burner and a materials handling facility

Proposed Controls

Dryer and Board Press:

We agree with the emissions control equipment choices provided in the BACT analysis, however, the emissions limits provided are, in some cases, significantly higher than acceptable BACT. Table 1 shows the limits proposed by Georgia Pacific.

Table 1: Proposed limits

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VOC	553	126.26	0.63
CO	147.15	33.60	0.16
NO_x	321.05	73.3	0.37
Press (80MMBTU/hr max)			
PM/PM10	12.4	2.83	0.035
VOC	87.82	20.05	0.25
CO	31.76	7.25	0.091
NO_x	47	10.73	0.13

Table 2:Acceptable BACT limits

The permit does not state the size of the two wood fuel suspension burners used in this process. 40 MMBTU each was assumed.

Equipment	BACT Emissions Limit (lb./MMBTU)	BACT Emissions Limit (lb./hr)
Dryer (200 MMBTU)		
PM/PM10	0.07	14.0
VOC	0.17	34
CO	0.2	40.0
NO_x	0.2	40.0
Press (80 MMBTU)		
PM/PM10	0.030	2.4
VOC	0.081	6.48
CO	0.379	30.32
NO_x	0.2	16.0

We believe that the limits for the press and the dryer should follow those listed in Table 2. These limits were taken from the RACT/BACT/LAER clearinghouse and a Virginia Georgia Pacific facility for similar technology. Because BACT is an emission limit based standard we propose that the permit reflect BACT emission limits in addition to BACT control technologies.

Economic Analysis:
Though we agree with the selection of BACT technologies made by Georgia Pacific, an economic analysis should have been done to establish the cost of control and support the rejection of SCR as a control technology.

Materials Handling:

For the material handling operations we agree that bagfilters are a BACT control technology, but again we disagree with the proposed emissions limit. The RACT/BACT/LAER clearinghouse indicates that for materials handling at OSB plants using bagfilters the PM limit should be 0.005 gr/dscf rather than 0.01 gr/dscf.

Other issues:
We contacted Steve Proctor from the North Carolina Division of Air Quality regarding the use of SCR on the Wierhauser particle board facility. Because of severe problems in keeping the catalyst clean they have just submitted a new PSD permit removing SCR from the facility.

Conclusions

The overall selection of BACT technology is acceptable in this situation, but the emission limits in some cases are higher than BACT. The Georgia Pacific facility should be able to meet the emissions limits provided above.

U.S.FISH&WILDLIFE SERVICE
AIR QUALITY BRANCH
P.O. BOX 25287, Denver, CO 80225-0287

FACSIMILE COVER SHEET

Date: February 9, 2000

Telephone: (303) 969-2617
Fax: (303) 969-2822

To: Joe Kahn

From: Ellen Porter

Subject: GP Hosford

Number of Pages: ~~3~~ 4
(Including this cover sheet)

Office Location: 7333 West Jefferson Ave, Suite 450, Lakewood, CO 80235

Preliminary Review of Prevention of Significant Deterioration Permit Application for Georgia-Pacific's Oriented Strandboard Facility Hosford, Florida

by

Air Quality Branch, U. S. Fish and Wildlife Service – Denver
February 2, 2000

Background

Georgia Pacific (GP) proposes to construct an oriented strandboard facility (OSF) near Hosford, Florida, 45 km northwest of St. Marks Wilderness, a Class I air quality area administered by the U.S. Fish and Wildlife Service. The facility will be comprised of five dryers equipped with TherMec Burners, a board press with two thermal oil heaters each containing one wood-fired and one natural gas-fired burner, and a materials handling facility

Proposed Controls

Dryer and Board Press:

We agree with the emissions control equipment choices provided in the BACT analysis, however, the emissions limits provided are significantly higher than acceptable BACT. Table 1 shows the limits proposed by Georgia Pacific.

Table 1: Proposed limits

Equipment	Emissions limit (tpy)	Proposed Emissions Limit (lb/hr)	Emissions limit (lb./MMBTU)
Dryer (80MMBTU/hr max)			
PM/PM10	326.1	74.45	0.93
VOC	553	126.26	1.58
CO	147.15	33.60	0.4199
NO_x	321,05	73.3	0.916
Press (80MMBTU/hr max)			
PM/PM10	12.4	2.83	0.035
VOC	87.82	20.05	0.25
CO	31.76	7.25	0.091
NO_x	47	10.73	0.13

Table 2:Acceptable BACT limits

Equipment	BACT Emissions Limit (lb/hr)
Dryer (80MMBTU/hr max)	
PM/PM10	6.42
VOC	3.669
CO	8.93
NO_x	18.38
Press (80MMBTU/hr max)	
PM/PM10	0.65
VOC	1.73
CO	8.19
NO_x	8.01

We believe that the limits for the press and the dryer should follow those listed in Table 2. These limits were taken from the RACT/BACT/LAER clearinghouse for similar technology. Because BACT is an emission limit based standard we propose that the permit reflect BACT emission limits in addition to BACT control technologies.

Materials Handling:

For the material handling operations we agree that bagfilters are a BACT control technology, but again we disagree with the proposed emissions limit. The RACT/BACT/LAER clearinghouse indicates that for materials handling at OSB plants using bagfilters the PM limit should be 0.005 gr/dscf rather than 0.01 gr/dscf.

Conclusions

The overall selection of BACT technology is acceptable in this situation, but the emission limits are far less than BACT. Because BACT is an emission limit based standard, this BACT analysis is not reasonable. The Georgia Pacific facility should be able to meet the emissions limits provided above with the technology they have proposed.

Air Quality Related Values Analysis

GP's haze analysis assumed a distance of 64 km (maximum of 81 km) from the facility to St. Marks. However, Section 6 of the application gives the distance as 45 km. Our measurements agree with the 45 km estimate. GP should verify the distance and re-do, if necessary, the haze analysis (assuming that some receptor in St. Marks will be greater than 50 km from the facility). In addition, GP should do a VISCREEN analysis for receptors in St. Marks less than 50 km from the facility

Our comments are preliminary and will be followed by a more detailed review of the proposed project.

Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

January 24, 2000

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS - Air Quality Division
Post Office Box 25287
Denver, Colorado 80225

Re: Georgia-Pacific Corporation, Hosford OSB Plant
PSD-FL-282

Dear Mr. Bunyak:

Enclosed is a copy of a PSD permit application for an oriented strandboard manufacturing plant to be constructed and operated by Georgia-Pacific Corporation near Hosford in Liberty County. The application includes the applicant's PSD analyses including a BACT analysis. This is a new facility. The emissions units include five flake dryers, a panel press, sawing and sanding operations, and a thermal oil system heated with wood. The applicant has proposed to use RTOs to control emissions from the flake dryers and panel press.

Please provide your comments as soon as possible. Our rules require us to determine whether an application is complete within 30 days of receipt and to make a Preliminary Determination within 60 days (given that the application is complete). This project is not subject to the Florida Power Plant Siting Act and review by the Governor and Cabinet. If you have any questions regarding this matter, please call me at 850/921-9519.

Sincerely,

Joseph Kahn, P.E.
New Source Review Section

/jk

Enclosure

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Jeb Bush
Governor

David B. Struhs
Secretary

January 24, 2000

Mr. Gregg Worley, Section Chief
Air, Radiation Technology Branch
Preconstruction/HAP Section
US EPA Region IV
61 Forsyth Street
Atlanta, Georgia 30303

Re: Georgia-Pacific Corporation, Hosford OSB Plant
PSD-FL-282

Dear Mr. Worley:

Enclosed is a copy of a PSD permit application for an oriented strandboard manufacturing plant to be constructed and operated by Georgia-Pacific Corporation near Hosford in Liberty County. The application includes the applicant's PSD analyses including a BACT analysis. This is a new facility. The emissions units include five flake dryers, a panel press, sawing and sanding operations, and a thermal oil system heated with wood. The applicant has proposed to use RTOs to control emissions from the flake dryers and panel press.

Please provide your comments as soon as possible. Our rules require us to determine whether an application is complete within 30 days of receipt and to make a Preliminary Determination within 60 days (given that the application is complete). This project is not subject to the Florida Power Plant Siting Act and review by the Governor and Cabinet. If you have any questions regarding this matter, please call me at 850/921-9519.

Sincerely,

Joseph Kahn, P.E.
New Source Review Section

/jk

Enclosure