AIR EMISSION PERMIT NO. 00700019- 005

IS ISSUED TO

Norbord Industries Inc

NORBORD MINNESOTA
4409 Northwood Road Northwest
Solway, Beltrami County, MN 56678

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Application Type	Application Date	Permit Number
Total Facility Operating Permit	November 15, 1995	00700019-001
Administrative Amendment	January 12, 2005	00700019-002
Administrative Amendment	June 16 and July 21, 2006	00700019-003
Administrative Amendment		00700019-004
Major Amendment	November 22, 2005	00700019-005

This permit supersedes permit number 00700019-004 and authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal; Pt 70/NSR Authorization Major Amendment
Issue Date: May 11, 2004 Issue Date: August 7, 2008
Expiration: May 11, 2009
All Title I Conditions do not expire.

Jeff J. Smith, Manager
Air Quality Permits Section
Industrial Division

for Brad Moore
Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

Norbord Minnesota (formerly Northwood Panelboard Company) owns and operates an Oriented Strandboard (OSB) manufacturing facility in Beltrami County, Minnesota (Facility). The Facility is located approximately 10 miles west of Bemidji, Minnesota. To produce OSB, logs are sliced into small strands, which are then dried, blended with a phenol-formaldehyde resin and wax mixture, formed into layers, and finally pressed into wood panels. The equipment used for the process consists of two rotary drum dryers with two wood-fired Lamb burners, one flatline conveyor dryer with a Wellons wood-fired burner, one multi-opening board press, two Konus wood-fired burners which are the heat source for the board press, and various handling, finishing, and forming processes.

The pollution control equipment and main pollutants of concern from the emission units at the facility are as follows: the two rotary dryers and Lamb burners are sources of particulate matter (PM), particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}), volatile organic compounds (VOCs), carbon monoxide (CO), and nitrogen oxides (NO_x). The

dryers/Lamb burners are currently controlled by an Electrified Filter Bed (EFB) which controls PM. The conveyor dryer and Wellons burner are also sources of PM, PM_{10}, VOC, CO and NO_x, PM and PM_{10} are controlled by an ESP. The press is currently uncontrolled and is primarily a source of VOC. The Konus burners are sources of PM, PM_{10}, VOC, CO and NO_x and are each controlled by multiclones and an EFB. The in-plant particulate sources are generally controlled by baghouses. There are also fugitive particulate sources such as bark and fuel piles and paved and unpaved roads.

Permit action 001 incorporated limits and control requirements resulting from a backwards-PSD analysis performed by the Permittee, submitted in May 2001 and updated in July 2002 and January 2003. As a result of this, the Permittee was installed a Regenerative Thermal Oxidizer (RTO) on the rotary drum dryers/Lamb burners, primarily for control of VOC, but also for control of PM and CO. The RTOs were placed downstream of two Electrified Filter Beds (EFB).

EU 002 Core Dryer (one of two rotary drum dryers) was online with a new EFB and three RTOs on September 25, 2005 and EU 001 Face Dryer (the other rotary drum dryer) was online with a new EFB and the RTOs on October 20, 2005.

BACT limits for PM, PM10, VOC, CO and NOx were established in permit action 001 as applicable on the rotary drum dryers/Lamb burners, Konus burners, board press, and various operations such as sawing and forming which are currently controlled by baghouses. The conveyor dryer system was installed as authorized in a PSD permit issued in 1995.

Administrative Amendment (Action 002): This amendment changes the deadline for submittal of a major amendment following loss of Clean Unit status. The deadline was extended by 120 days.

Administrative Amendment (Action 003): This permit action was initiated by a request from Norbord for a 120-day extension of the performance testing due date for testing NOx emissions from the Konus Burners. This permit action authorizes the 120-extension for this performance test in accordance with Minn. R. 7007.1400, subp. 1(H), moving the due date from October 29, 2006 to February 28, 2007.

The performance testing frequencies for PM, PM10 and CO on the Konus Burners (GP002) were also updated to reflect the new testing frequencies established in the March 2, 2006 letter from the MPCA to Norbord in accordance with Minn. R. 7007.1400, subp. 1(C). The new testing frequencies and test dates are shown in the table below:

Pollutant	New Testing Frequency	Next Test Date
Total Particulate Matter	Every 60 months from most recent test date	October 4, 2010
Particulate Matter < 10 microns	Every 60 months from most recent test date	October 4, 2010
Carbon Monoxide	Every 36 months from most recent test date	Ocotober 4, 2008

This permit action also removes all Clean Unit permit conditions in accordance with Minn. R. 7007.1400, subp. 1(I). The Clean Unit Designation is no longer available as of June 24, 2005.

Administrative Amendment (Action 004): This permit action was initiated by a request from Norbord for a second 120-day extension of the performance testing due date for testing NOx emissions from the Konus Burners. This permit action authorizes the 120-extension for this performance test in accordance with Minn. R. 7007.1400, subp. 1(H), moving the due date from February 28, 2007 to June 28, 2007.

Major Amendment (Action 005): This permit action is a major amendment to change BACT limits for EU 002 Konus Burners as requested in Norbord's permit application dated November 22, 2005. It also incorporates new operating limits from the NOC letter dated November 30, 2006, from Andy Place of the MPCA to Norbord Minnesota. Other changes to the permit include changing a BACT limit for hardwood percentage from 95 to 90 percent (this limit is in effect until the biofilter is installed for the press), adding NESHAP requirements for Subparts DDDD and updating requirements language and deleting completed requirements.

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Norbord Minnesota

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Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: **Total Facility**

What to do	Why to do it
FACILITY LIMIT	hdr
Process Throughput: greater than or equal to an average of 90 percent hardwood as furnish per calendar week. This throughput limit will no longer be in effect upon demonstration of compliance with NESHAP limit for EU 012.	Title I Condition: 40 CFR Section 52.21(j) (BACT limit for EU 012 - press); Minn. R. 7007.3000
Daily Recordkeeping. Once each day of operation, the Permittee shall calculate, record, and maintain a record of the total quantity and type (i.e. hardwood, softwood) of wood furnish used at the facility. This shall be based on usage records. This recordkeeping will no longer be in effect upon demonstration of compliance with NESHAP limit for EU 012.	Title I Condition: Monitoring for BACT limit; Minn. R. 7007.0800, subp. 4 and 5
Weekly Recordkeeping - Hardwood and Softwood Furnish Usage. By the close of business each Friday, the Permittee shall calculate and record the percent, by weight, of the amount of hardwood and softwood processed as well as the total amount of wood processed for the previous calendar week. This recordkeeping will no longer be in effect upon demonstration of compliance with NESHAP limit for EU 012.	Minn. R. 7007.0800. subp. 4 and 5
MODELING REQUIREMENTS	hdr
Parameters Used in Modeling: The stack heights, emission rates, and other parameters used in the modeling are listed in Appendix C of this permit. The Permittee must submit to the Commissioner for approval any revisions of these parameters and must wait for a written approval before making such changes. The information submitted must include, at a minimum, the locations, heights and diameters of the stacks, locations and dimensions of nearby buildings, the velocity and temperatures of the gases emitted, and the emission rates. The plume dispersion charateristics due to the revisions of the information must be equivalent to or better than the dispersion characteristics modeled as part of this permit. The Permittee shall demonstrate this equivalency in the proposal. If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must remodel.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
For changes that do not involve an increase in an emission rate and that do not require a permit amendment, this proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit. For changes involving increases in emission rates and that require a minor permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit. For changes involving increases in emission rates and that require a permit amendment other than a minor amendment, the proposal must be submitted with the permit application. For any physical change to or change in the method of operation of a stack emitting PM10 or for any increase in PM10 emissions (whether or not the increase would require a permit amendment of any type), the Permittee may be required to remodel, subject to the Agency's approval.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Property Line Fencing: the Permittee shall maintain the fencing and gates which have previously been installed to enclose the boundaries of the property. The property shall be enclosed with a continuous fence, excluding access points, and shall have installed gates or a guard at each access point, except as described below. The Permittee shall thereafter keep the gates closed unless: 1) A guard is present controlling access at a gate; or 2) Authorized persons are entering or leaving the property through a gate. Access points such as a railroad shall be patrolled and shall be posted with "No Trespassing" signs. The Permittee shall inspect the fencing and gates once per year to ensure compliance with access control. The Permittee shall complete all repairs and maintenance to the fencing and gates as soon as possible but no later than 30 days after the Permittee observes the need for repair or maintenance.	Minn. R. 7007.0800, subp. 2

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OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0010-7009.0080.
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr

Facility Name: Norbord Minnesota

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Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: The Permittee shall maintain files of all information required by this part in a form suitable and readily available for expeditious inspection and review. The files should be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Only the most recent two years of information must be kept on site.	40 CFR Section 63.10(b)(1); Minn. R. 7019.0100, subp. 2(B)
The Permittee shall maintain, at a minimum, the following information in the files: 1) the occurrence and duration of each startup or shutdown when the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards; 2) the occurrence and duration of each malfunction of the emission unit or air pollution control or monitoring equipment; 3) all maintenance performed on the pollution control and monitoring equipment; 4) actions taken during periods of startup or shutdown when the source exceeded applicable emission limits in a relevant standard and when such actions are different from the procedures specified in the affected source's startup, shutdown, and malfunction plan (SSMP); or actions taken during period of malfunction when the actions taken are different from the procedures specified in the SSMP; (continued)	40 CFR Section 63.10(b)(2); Minn. R. 7019.0100, subp. 2(B)
5) all information necessary to demonstrate conformance with the affected source's SSMP when all actions taken during SSM are consistent with procedures specified in the SSMP; 6) each period during which a continuous monitoring system (CMS) is malfunctioning or inoperative; 7) all required measurements needed to demonstrate compliance with a relevant standard; 8) all results of performance test, and CMS performance evaluations; 9) all measurements as may be necessary to determine the conditions of performance tests and performance evaluations; 10) all CMS calibration checks; 11) all adjustments and maintenance performed on CMS; 12) any information demonstrating whether a source is meeting the requirements for a waiver of record keeping or reporting requirements under this part; 13) all documents supporting initial notifications and notifications of compliance status.	40 CFR Section 63.10(b)(2); Minn. R. 7019.0100, subp. 2(B)
(a) The Permittee must keep the following records: (1) A copy of each notification and report submitted to comply with subpart DDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status submitted, according to the requirements in Section 63.10(b)(2)(xiv). (2) The records in Section 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction. (3) Documentation of approved routine control device maintenance exemption, if a request for such an exemption is made under Section 63.2251. (4) Records of performance tests and performance evaluations as required in Section 63.10(b)(2)(viii). (b) The Permittee must keep the records required in Tables 7 and 8 to subpart DDDD to show continuous compliance with each compliance option, operating requirement, and work practice requirement that applies.	40 CFR Section 63.2282(a) and (b)
(a) Records must be in a form suitable and readily available for expeditious review as specified in Section 63.10(b)(1). (b) As specified in Section 63.10(b)(1), each record must be kept for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. (c) Record must be kept on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to Section 63.10(b)(1). Records can be kept offsite for the remaining 3 years.	40 CFR Section 63.2283(a), (b), and (c)
NOTIFICATIONS	hdr

Facility Name: Norbord Minnesota

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(a) The Permittee must submit all of the notifications in Sections 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9 (b) through (e), and (g) and (h) by the dates specified. (b) The Permittee must submit an Initial Notification no later than 120 calendar days after September 28, 2004, or after initial startup, whichever is later, as specified in Section 63.9(b)(2). This has been completed. (c) If the Permittee is required to conduct a performance test, the Permittee must submit a written notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as specified in Section 63.7(b)(1).	40 CFR Section 63.2280
(d) If the Permittee is required to conduct a performance test, design evaluation, or other initial compliance demonstration as specified in Tables 4, 5, and 6 to subpart DDDD, submit a Notification of Compliance Status as specified in Section 63.9(h)(2)(ii). (1) For each initial compliance demonstration required in Table 5 or 6 to subpart DDDD that does not include a performance test, submit the Notification of Compliance Status before the close of business on the 30th calendar day following the completion of the initial compliance demonstration. (2) For each initial compliance demonstration required in Tables 5 and 6 to subpart DDDD that includes a performance test conducted according to the requirements in Table 4 to subpart DDDD, submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test according to Section 63.10(d)(2).	40 CFR Section 63.2280
(e) If the Permittee requests a routine control device maintenance exemption according to Section 63.2251, the Permittee must submit the request for the exemption no later than 30 days before the compliance date. (g) The Permittee must notify the EPA Administrator within 30 days before taking any of the actions specified in paragraphs (g)(1) and (3) of Section 63.2280. (1) The Permittee modifies or replaces the control system for any process unit subject to the compliance options and operating requirements in subpart DDDD. (3) The Permittee changes a continuous monitoring parameter or the value or range of values of a continuous monitoring parameter for any process unit or control device.	40 CFR Section 63.2280
REPORTING/SUBMITTALS	hdr
Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3. At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.	Minn. R. 7019.1000, subp. 3
Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2. At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.	Minn. R. 7019.1000, subp. 2
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1

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Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
If actions taken during a startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards) or malfunction of an affected source are consistent with the procedures specified in the SSMP, then the Permittee shall state such information in a startup, shutdown, and malfunction report. Actions taken to minimize emissions during such startups, shutdowns and malfunctions shall be summarized in the report. Reports shall only be required if a startup or shutdown caused the source to exceed any applicable emission standards, or if a malfunction occurred during the reporting period. Such reports shall be delivered or postmarked by the 30th day following the end of each calendar half year.	40 CFR Section 63.10(d)(5)(i); Minn. R. 7019.0100, subp. 2(B)
If an action taken by the Permittee during a startup or shutdown that caused the source to exceed any applicable emission limitation in the relevant emission standards, or during a malfunction is not consistent with the procedures specified in the SSMP, then the Permittee shall report the actions taken for that event with an immediate report within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event. The immediate report, within 2 days, shall consist of a telephone call or fax and shall report the actions taken for the event. The letter, to be submitted within 7 days, must contain name, title, and signature of a responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following SSMP, describing all excess emissions and/or parameter monitoring exceedances which are believed to have occurred, and actions taken to minimize emissions.	40 CFR Section 63.6(e)(3)(iv) & Minn. R. 7011.7000; 40 CFR Section 63.10(d)(5)(ii) and Minn. R. 7019.0100, subp. 2(B)
(a) The Permittee must submit each report in Table 9 to subpart DDDD that applies. (b) Unless the EPA Administrator has approved a different schedule for submission of reports under Section 63.10(a), submit each report by the date in Table 9 to subpart DDDD and as specified in paragraphs (b)(1) through (5) of Section 63.2281. (1) The first compliance report must cover the period beginning on the compliance date that is specified for the Permittee's affected source in Section 63.2233 ending on June 30 or December 31, and lasting at least 6 months, but less than 12 months. For example, if the compliance date is March 1, then the first semiannual reporting period would begin on March 1 and end on December 31. (2) The first compliance report must be postmarked or delivered no later than July 31 or January 31 for compliance periods ending on June 30 and December 31, respectively.	40 CFR Section 63.2281(a) and (b)
(b)(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. (4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31 for the semiannual reporting period ending on June 30 and December 31, respectively. (5) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to Section 70.6(a)(3)(iii)(A) or Section 71.6(a)(3)(iii)(A), the Permittee may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (4) of Section 63.2281.	40 CFR Section 63.2281(b)
(c) The compliance report must contain the information in paragraphs (c)(1) through (8) of Section 63.2281. (1) Company name and address. (2) Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report. (3) Date of report and beginning and ending dates of the reporting period. (4) If there was a startup, shutdown, or malfunction during the reporting period and actions were taken consistent with the SSMP, the compliance report must include the information specified in Section 63.10(d)(5)(i). (5) A description of control device maintenance performed while the control device was offline and one or more of the process units controlled by the control device was operating, including the information specified in paragraphs (c)(5)(i) through (iii) of Section 63.2281.	40 CFR Section 63.2281(c)

(c)(5)(i) The date and time when the control device was shut down and restarted. (ii) Identification of the process units that were operating and the number of hours that each process unit operated while the control device was offline. (iii) A statement of whether or not the control device maintenance was included in the approved routine control device maintenance exemption developed pursuant to Section 63.2251. If the control device maintenance was included in the approved routine control device maintenance exemption, then the Permittee must report the information in paragraphs (c)(5)(iii)(A) through (C) of Section 63.2281. (A) The total amount of time that each process unit controlled by the control device operated during the semiannual compliance period and during the previous semiannual compliance period.	40 CFR Section 63.2281(c)
(c)(5)(iii)(B) The amount of time that each process unit controlled by the control device operated while the control device was down for maintenance covered under the routine control device maintenance exemption during the semiannual compliance period and during the previous semiannual compliance period. (C) Based on the information recorded under paragraphs (c)(5)(iii)(A) and (B) of this section for each process unit, compute the annual percent of process unit operating uptime during which the control device was offline for routine maintenance using Equation 1 of Section 63.2281.	40 CFR Section 63.2281(c)
NESHAP REQUIREMENTS: 40 CFR Section 63, subpart DDDD, Plywood and Composite Wood Products (also called the Plywood MACT)	hdr
The Permittee shall comply with the applicable provisions in 40 CFR Section 63, subpart DDDD, Plywood and Composite Wood Products (referred to as "subpart DDDD" in this portion of the permit) by October 1, 2007, compliance date of the MACT except for the requirements related to the EU 012 Board Press and for GP 003, the conveyor dryer, for which a one year extension was granted. The Permittee shall comply with the applicable provisions related to the EU 012 Board Press by October 1, 2008. Control equipment (biofilter) will be added to the press, and part of the conveyor dryer system is to be re-routed (exhaust from Zone 1 will be routed into the flame zone of the Wellons burner).	40 CFR Section 63, Subpart DDDD: Plywood and Composite Wood Products
The Permittee shall comply with all the applicable provisions for the following emission units: EU 001 Face Dryer/Lamb Burner EU 002 Core Dryer/Lamb Burner EU 012 Board Press EU 020 Conveyor Dryer Zones 1, 2, and 3 (Requirements for each emission unit are located under the emission unit heading in the permit.)	40 CFR Section 63, Subpart DDDD: Plywood and Composite Wood Products
All submittals and notifications under subpart DDDD shall be sent to both the MPCA and the EPA contacts listed on Page B-1 of this permit, unless otherwise noted.	Minn. R. 7007.0800, subp. 2
General Compliance Requirements	hdr
Performance Test Procedures: The Permittee shall conduct all performance tests according to 40 CFR Section 63.7(c), (d), (f) and 40 CFR Section 63.7520(a) through (g), as applicable, and Minn. R. ch. 7017.	40 CFR Section 63.7520; 40 CFR Section 63.7(c), (d), (e), (f), and (h)
The Permittee must be in compliance with the compliance options, operating requirements, and the work practice requirements in subpart DDDD at all times, except during periods of process unit or control device startup, shutdown, and malfunction; prior to process unit initial startup; and during the routine control device maintenance exemption specified in 40 CFR Section 63.2251. The compliance options, operating requirements, and work practice requirements do not apply during times when the process unit(s) subject to the compliance options, operating requirements, and work practice requirements are not operating, or during periods of startup, shutdown, and malfunction. Startup and shutdown periods must not exceed the minimum amount of time necessary for these events.	40 CFR Section 63.2250(a)
Operate and Maintain Source: The Permittee shall at all times operate and maintain the emission unit subject to the NESHAP and its associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards, as described at 40 CFR Section 63.6(e)(1)(i).	40 CFR Section 63.2250(b); 40 CFR Section 63.6(e)(1)(i)
Startup, Shutdown, and Malfunction Plan (SSMP): The Permittee shall develop, implement, and maintain a written startup, shutdown, and malfunction plan (SSMP) according to all of the provisions in 40 CFR Section 63.6(e)(3). The plan must be available for inspection and copying by the Administrator upon request.	40 CFR Section 63.2250(c); 40 CFR Section 63.6(e)(3)
Routine Control Device Maintenance Exemption: The Permittee may request a routine control device maintenance exemption from the EPA Administrator for routine maintenance events in accordance with 40 CFR Section 63.2251.	40 CFR Section 63.2251

Facility Name: Norbord Minnesota

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Notifications: The Permittee must submit all of the notifications in 40 CFR Sections 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) by the dates specified.	40 CFR Section 63.2280
The Permittee shall notify the EPA Administrator and the MPCA within 30 days before: 1) any control system for any process unit subject to the compliance options and operating requirements for subpart DDDD are modified or replaced and 2) a continuous monitoring parameter or the value or range of values of a continuous monitoring parameter for any process unit or control device is changed.	40 CFR Section 63.2280(g)(1) and (3)
Immediate Startup, Shutdown, and Malfunction Report (SSMR): The Permittee must submit an immediate SSMR if EU001 had a startup, shutdown, or malfunction during the reporting period that is not consistent with the Permittee's SSMP, and the boiler exceeded any applicable emission limitation. The report must contain: 1). Actions taken for the event; 2). The name, title, and signature of a responsible official who is certifying its accuracy, 3). An explanation of the circumstances of the event; 4). The reasons for not following the SSMP; and 5). Whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred. The Permittee must submit the report: 1). By fax or telephone within 2 working days after starting actions inconsistent with the plan; and 2). By letter within 7 working days after the end of the event unless the Permittee has made alternative arrangements with the Administrator.	40 CFR Sections 63.6(e)(3)(iv) and 63.10(d)(5)(ii)
Periodic Startup, Shutdown, and Malfunction Reports (SSMP Reports). The Permittee shall submit SSMP Reports only if there is an occurrence of startup, shutdown, or malfunction during the reporting period and shall be delivered or postmarked by the 30th day following the end of each calendar half year. The content of the report shall be as required by 40 CFR Section 63.10(d)(5)(i).	40 CFR Section 63.10(d)(5)(i)
SOURCE-SPECIFIC REQUIREMENTS	hdr
Part 63 Subpart DDDD Plywood and Composite Wood Products MACT Standard Requirements: For process units not subject to the compliance options or work practice requirements specified in Section 63.2240 (including but not limited to, lumber kilns), the Permittee is not required to comply with the compliance options, work practice requirements, performance testing, monitoring, SSM plans, and recordkeeping or reporting requirements of this subpart, or any other requirements in subpart A of this part, except for the initial notification requirements in Section 63.9(b).	40 CFR Section 63.2252
LIMITS AND OPERATING REQUIREMENTS	hdr
General Requirements: (a) The Permittee must be in compliance with the compliance options, operating requirements, and the work practice requirements in this subpart at all times, except during periods of process unit or control device startup, shutdown, and malfunction; prior to process unit initial startup; and during the routine control device maintenance exemption specified in Section 63.2251. The compliance options, operating requirements, and work practice requirements do not apply during times when the process unit(s) subject to the compliance options, operating requirements, and work practice requirements are not operating, or during periods of startup, shutdown, and malfunction. Startup and shutdown periods must not exceed the minimum amount of time necessary for these events. (continued)	40 CFR Section 63.2250
General Requirements (continued): (b) The Permittee must always operate and maintain the affected source, including air pollution control and monitoring equipment, according to the provisions in Section 63.6(e)(1)(i). (c) The Permittee must develop a written SSMP according to the provisions in Section 63.6(e)(3).	40 CFR Section 63.2250
CONTROL EQUIPMENT REQUIREMENTS	hdr

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Temperature Monitoring: For each temperature monitoring device, the Permittee must meet the requirements in paragraphs (a) and (b)(1) through (6) of Section 63.2269. (a) The Permittee must install, operate, and maintain each continuous parameter monitoring system (CPMS) according to paragraphs (a)(1) through (3) of Section 63.2269. (1) The CPMS must be capable of completing a minimum of one cycle of operation (sampling, analyzing, and recording) for each successive 15-minute period. (2) At all times, the Permittee must maintain the monitoring equipment including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment. (3) Record the results of each inspection, calibration, and validation check. (continued)	40 CFR Section 63.2269(a)
Temperature Monitoring (cont.): (b) (1) Locate the temperature sensor in a position that provides a representative temperature. (2) Use a temperature sensor with a minimum accuracy of 4 °F or 0.75 percent of the temperature value, whichever is larger. (3) If a chart recorder is used, it must have a sensitivity with minor divisions not more than 20 °F. (continued)	40 CFR Section 63.2269(b)
Temperature Monitoring (cont.): (4) Perform an electronic calibration at least semiannually according to the procedures in the manufacturer's owners manual. Following the electronic calibration, the Permittee shall conduct a temperature sensor validation check in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 30 °F of the process temperature sensor's reading. (5) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range or install a new temperature sensor. (6) At least quarterly, inspect all components for integrity and all electrical connections for continuity, oxidation, and galvanic corrosion.	40 CFR Section 63.2269(b)
(a) Monitor and collect data according to section 63.2270. (b) Except for, as appropriate, monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee must conduct all monitoring in continuous operation at all times that the process unit is operating. For purposes of calculating data averages, do not use data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities. The Permittee must use all the data collected during all other periods in assessing compliance. (continued)	40 CFR Section 63.2270(a) and (b)
(continued from above) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out-of-control and data are not available for required calculations constitutes a deviation from the monitoring requirements.	40 CFR Section 63.2270(b)
(c) The Permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities; data recorded during periods of startup, shutdown, and malfunction; or data recorded during periods of control device downtime covered in any approved routine control device maintenance exemption in data averages and calculations used to report emission or operating levels, nor may such data be used in fulfilling a minimum data availability requirement, if applicable. Use all the data collected during all other periods in assessing the operation of the control system. (d) Determine the 3-hour block average of all recorded readings, calculated after every 3 hours of operation as the average of the evenly spaced recorded readings in the previous 3 operating hours (excluding periods described in paragraphs (b) and (c) of Section 63.2270).	40 CFR Section 63.2270(c) and (d)
(f) To calculate the data averages for each 3-hour or 24-hour averaging period, the Permittee must have at least 75 percent of the required recorded readings for that period using only recorded readings that are based on valid data (i.e., not from periods described in paragraphs (b) and (c) of Section 63.2270).	40 CFR Section 63.2270(f)

Facility Name: Norbord Minnesota

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(a) The Permittee must demonstrate continuous compliance with the compliance options, operating requirements, and work practice requirements in Sections 63.2240 and 63.2241 that apply according to the methods specified in Tables 7 and 8 to subpart DDDD. (b) The Permittee must report each instance in which the applicable compliance option, operating requirement, and work practice requirement in Tables 7 and 8 to subpart DDDD were not met. This includes periods of startup, shutdown, and malfunction and periods of control device maintenance specified in paragraphs (b)(1) through (3) of Section 63.2271. These instances are deviations from the compliance options, operating requirements, and work practice requirements in subpart DDDD. These deviations must be reported according to the requirements in Section 63.2281.	40 CFR Section 63.2271(a) and (b)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **GP 001 Lamb Burners and Dryers**

Associated Items: CE 017 Electrified Filter Bed

CE 018 Electrified Filter Bed

CE 020 Thermal Oxidizer

CE 024 Thermal Oxidizer

CE 025 Thermal Oxidizer

EU 001 Face Dryer/Lamb Burner

EU 002 Core Dryer/Lamb Burner

EU 004 Face Burner 1 (backup burner)

EU 005 Core Burner 2 (backup burner)

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.49 lbs/ton of oven dried product. This is more stringent than limit in Minn. R. 7011.0610, subp 1(A), which also applies.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 12.2 lbs/hour	Title I Condition: 40 CFR Section 52.21(m) (modeling); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 0.49 lbs/ton of oven dried product.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
Carbon Monoxide: less than or equal to 32.4 lbs/hour	Title I Condition: 40 CFR Section 52.21 (m) (modeling); Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 1.3 lbs/ton of oven dried product.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 25 lbs/hour	Title I Condition: 40 CFR Section 52.21 (m) (modeling); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 1.0 lbs/ton of oven dried product.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.59 lbs/ton of oven dried product. The VOC limit is on an "as VOC basis", and is to be measured using the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input . The PTE of this unit is 2.2 lb/hr.	Minn. R. 7011.0610, subp. 2(B)(1)
HAPs - Total: less than or equal to 20 parts per million ; total HAP measured as Total Hydrocarbons (THC) as carbon. This limit is based on the compliance option, specified in Table 1B to Subpart DDDD of Part 63, chosen by the Permittee based on current operations. If the Permittee later chooses to switch to a different compliance option allowed in the standard, the Permittee shall comply with all applicable portions of 40 CFR pt. 63, subp. DDDD, for that option.	40 CFR Section 63.2240(b); Table 1B to Subpart DDDD of Part 63
Fuel Usage: limited to hog fuel (bark, wood, trims and dust collected from baghouses), propane, natural gas, and up to 150 lb/hr (monthly average) of the total fuel combusted may consist of manufacturing residue. Cellulose based sorbents and alternate biomass fuels may be combusted subject to the approval by the MPCA.	Minn. R. 7007.0800, subp. 2
Manufacturing residue: The manufacturing residue must be generated on site and may consist of the following: wood flake resin and wax accumulations cleaned from equipment, water-based paint residues from edgesealing and stenciling operations, confidential office records (paper) and corrugated cardboard unsuitable for recycling. In addition, the manufacturing residue shall not contain any of the following: any hazardous waste listed in Minn. R. 7045.0135, any wastes specified in Minn. R. 7045.0131 as hazardous, or batteries or any other material where mercury has been purposely introduced. Absorbent material from spills containing oil, anti-freeze, water-based paints, or soy or water-based ink may be combusted. The spilled material other than oil shall not contain: any hazardous waste listed in Minn. R. 7045.0135 or any wastes specified in Minn. R. 7045.01313 as hazardous. The oil in any absorbent material shall only be on-specification used oil.	Minn. R. 7007.0800, subp. 2

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Alternative Biomass Fuel Testing Authorization: The Permittee is authorized to conduct test burns of alternative biomass fuels except for peat, wood that has been painted, stained or pressure treated, waste oil, farm chemicals, pesticide containers, demolition waste except for wood, waste from farms from an open dump, tire derived fuels, non-agricultural industrial process wastes, animal manures and wastes, or any material meeting the definition of a hazardous waste.	Minn. R. 7007.0800, subp. 2
Alternative Biomass Fuel Testing Restrictions: Test burns for any potential biomass fuel shall be limited to 4,000 tons, not more than 45 days of operation using the fuel, and a test period not to exceed 180 days.	Minn. R. 7007.0800, subp. 2
Alternative Biomass Fuel Testing Requirements: Test burns shall be conducted to measure air pollutant emissions and may include measuring CO, PM, PM10 and VOC emissions, monitoring NOx and SO2 emissions, and determining the fuel chlorine, Total Selected Metals (TSM) and mercury content. The final list of air pollutants to be measured and monitored during the test burn will depend on the type of fuel burned and will be finalized in the test plan approved by the MPCA.	Minn. R. 7007.0800, subp. 2
Alternative Biomass Fuel Testing Submittals: 30 days prior to testing of a biomass fuel, the Permittee shall submit a written performance test notification and test plan. The test plan shall meet the requirements of Minn. R. 7017.2030 and shall also include: 1) the type(s) and estimated amount of biomass to be tested, 2) operating parameters and anticipated fuel mixes during testing for the process heater to be tested, 3) air pollutants that will be monitored and measured during testing, and 4) a testing schedule.	Minn. R. 7017.2030, subp. 1-4, Minn. R. 7017.2018
CONTROL EQUIPMENT	hdr
CONTROL EQUIPMENT - ELECTRIFIED FILTER BED (EFB) - See requirements under Subject Items CE 017 and CE 018.	hdr
CONTROL EQUIPMENT - REGENERATIVE THERMAL OXIDIZERS (RTO) See requirements under Subject Items GP 006.	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 90 percent control efficiency	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter and Particulate Matter < 10 micron: greater than or equal to 90 percent control efficiency	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
The Permittee shall operate and maintain the control equipment (electrified filter beds (EFB) and thermal oxidizers (RTO)) any time that any process equipment controlled by the control equipment is in operation. Normal operation for the Permittee is to operate all three RTOs. Operating two RTOs is considered alternate operation. All monitoring, inspection requirements, etc. will be identical for all three RTOs. Performance testing will be conducted with three RTOs on line.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 4, 5 and 14
The Permittee shall operate and maintain the RTO to meet the Total HAP emissions limit. Additional requirements from NESHAP can be found under GP 006.	40 CFR Section 63.2240(b); Table 1B to Subpart DDDD of Part 63
MONITORING	hdr
The Permittee shall maintain a continuous hard copy readout or electronic file of the temperature readings and calculated three hour block average temperatures for the combustion chamber.	Title I Condition: Monitoring for BACT limit
Daily Monitoring: The Permittee shall physically check the temperature recording device for the thermal oxidizer and any other recording device used for monitoring of control equipment as required by the permit at least once each operating day to verify that it is working and recording properly. The Permittee shall maintain a written record of these daily checks and any corrective actions taken resulting from the daily checks.	Minn. R. 7007.0800, subp. 4 and 5
Monitoring Equipment: The Permittee shall install and maintain thermocouples for the thermal oxidizer to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The Permittee shall maintain and operate monitoring devices to continuously indicate the EFB pressure drop, bed voltage and ionizer voltage.	Minn. R. 7007.0800, subp. 4 and 5
Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment external system components, including but not limited to the electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 4, 5, and 14

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Annual Inspections: At least once per calendar year, the Permittee shall inspect the control equipment internal system components, including but not limited to the refractory and heat exchanger systems of the thermal oxidizer. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 4, 5, and 14
Annual Calibration: The Permittee shall calibrate the temperature monitor at least annually and shall maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 4, 5, and 14
Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5, and 14
The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
PERFORMANCE TESTING	hdr
Performance Test: due before end of each 60 months starting 03/08/2006 to measure opacity and total particulate matter, particulate matter < 10 microns, carbon monoxide, nitrogen oxides, and volatile organic compound emissions. VOC emissions shall be measured in accordance with the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit). The next performance test is due March 8, 2011.	Title I Condition: Monitoring for BACT limits
Initial Performance Test: due 180 days after 10/01/2007 to demonstrate initial compliance for Total HAP (THC as C) emissions limit. The Permittee shall conduct performance tests and establish each site-specific operating requirement in Table 2 of subpart DDDD according to the requirements in Section 63.2262 and Table 4 of subpart DDDD.	40 CFR Sections 63.2260(a) and 63.2261(a)
Performance Testing: conduct each performance test used to determine compliance with the applicable limit in part 63 subpart DDDD Table 1B, according to the requirements in Section 63.7(e)(1), the requirements in paragraphs (b) through (l) of Section 63.2262, and according to the applicable methods specified in Table 4 of part 63 subpart DDDD.	40 CFR Section 63.2262(a) and part 63 subpart DDDD Table 4 items (1) - (5), and (11)
Compliance Demonstration: Initial compliance has been demonstrated for total HAP (THC as C) emissions limit if: the average Total HAP emissions, measured using the methods in Table 4 to subpart DDDD over the 3-hour performance test, do not exceed 20 pppmvd; AND the Permittee has a record of the oxidizer operating temperatures as required by Table 2 of subpart DDDD over the performance test during which emissions did not exceed 20 ppmvd.	40 CFR Part 63 subpart DDDD table 5 item (3)
RECORDKEEPING	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record, and maintain records of, the total weight of manufacturing residue, absorbent material or biomass fed to the burner fuel stream.	Title I Condition: Monitoring for Title I Condition (40 CFR 52.21) and Minn. R. 7007.3000); Minn. R. 7007.0800. subp. 4 and 5
Monthly Recordkeeping - Within 15 days of the end of each month, the Permittee shall calculate and record the average hourly feed rate of manufacturing residue and absorbent material burned in the boilers for the previous month. This feed rate in lb/hr shall be compared to the limit to determine compliance.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **GP 002 Konus Burners**

Associated Items: CE 014 Electrified Filter Bed

CE 015 Electrified Filter Bed

EU 007 Konus Burner 1

EU 008 Konus Burner 2

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.21 lbs/million Btu heat input . This is more stringent than limit in Minn. R. 7011.0610, subp 1(A), which also applies.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 9.7 lbs/hour	Title I Condition: 40 CFR Section 52.21 (m) (modeling); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 0.21 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
Carbon Monoxide: less than or equal to 50.6 lbs/hour	Title I Condition: 40 CFR Section 52.21 (m) (modeling); Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 1.1 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 18.4 lbs/hour	Title I Condition: 40 CFR Section 52.21 (m) (modeling); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.40 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.26 lbs/million Btu heat input . The VOC limit is based on using Method 25A, measured as propane.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input . The PTE of this unit is 2.5 lb/hr.	Minn. R. 7011.0610, subp. 2(B)(1)
Fuel Usage: limited to hog fuel (bark, wood, trims and dust collected from baghouses), propane, natural gas, and up to 150 lb/hr (monthly average) of the total fuel combusted may consist of manufacturing residue. Cellulose based sorbents and alternate biomass fuels may be combusted subject to the approval by the MPCA.	Minn. R. 7007.0800, subp. 2
Manufacturing residue: The manufacturing residue must be generated on site and may consist of the following: wood flake resin and wax accumulations cleaned from equipment, water-based paint residues from edgesealing and stenciling operations, confidential office records (paper) and corrugated cardboard unsuitable for recycling. In addition, the manufacturing residue shall not contain any of the following: any hazardous waste listed in Minn. R. 7045.0135, any wastes specified in Minn. R. 7045.0131 as hazardous, or batteries or any other material where mercury has been purposely introduced. Absorbent material from spills containing oil, anti-freeze, water-based paints, or soy or water-based ink may be combusted. The spilled material other than oil shall not contain: any hazardous waste listed in Minn. R. 7045.0135 or any wastes specified in Minn. R. 7045.01313 as hazardous. The oil in any absorbent material shall only be on-specification used oil.	Minn. R. 7007.0800, subp. 2
Alternative Biomass Fuel Testing Authorization: The Permittee is authorized to conduct test burns of alternative biomass fuels except for peat, wood that has been painted, stained or pressure treated, waste oil, farm chemicals, pesticide containers, demolition waste except for wood, waste from farms from an open dump, tire derived fuels, non-agricultural industrial process wastes, animal manures and wastes, or any material meeting the definition of a hazardous waste.	Minn. R. 7007.0800, subp. 2
Alternative Biomass Fuel Testing Restrictions: Test burns for any potential biomass fuel shall be limited to 4,000 tons, not more than 45 days of operation using the fuel, and a test period not to exceed 180 days.	Minn. R. 7007.0800, subp. 2
Alternative Biomass Fuel Testing Requirements: Test burns shall be conducted to measure air pollutant emissions and may include measuring CO, PM, PM10 and VOC emissions, monitoring NOx and SO2 emissions, and determining the fuel chlorine, Total Selected Metals (TSM) and mercury content. The final list of air pollutants to be measured and monitored during the test burn will depend on the type of fuel burned and will be finalized in the test plan approved by the MPCA.	Minn. R. 7007.0800, subp. 2

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Alternative Biomass Fuel Testing Submittals: 30 days prior to testing of a biomass fuel, the Permittee shall submit a written performance test notification and test plan. The test plan shall meet the requirements of Minn. R. 7017.2030 and shall also include: 1) the type(s) and estimated amount of biomass to be tested, 2) operating parameters and anticipated fuel mixes during testing for the process heater to be tested, 3) air pollutants that will be monitored and measured during testing, and 4) a testing schedule.	Minn. R. 7017.2030, subp 1-4, Minn. R. 7017.2018
CONTROL EQUIPMENT	hdr
CONTROL EQUIPMENT - ELECTRIFIED FILTER BED (EFB) - See requirements under Subject Items CE 014 and CE 015.	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter and Particulate Matter < 10 micron: greater than or equal to 95 percent control efficiency	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
The Permittee shall operate and maintain the EFBs at all times that any emission unit controlled by the EFBs is in operation.	Title I Condition: BACT limit; Minn. R. 7007.0800, subp. 2 and 14
Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment external system components, including but not limited to the electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 4, 5, and 14
Annual Inspections: At least once per calendar year, the Permittee shall inspect the control equipment internal system components. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 4, 5, and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop, EFB bed voltage or EFB ionizer voltage is outside the required operating range; or - the EFB or any of its components are found during the inspections to need repair. Corrective actions shall return the recorded parameter to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the EFB. The Permittee shall keep a record of the type and date of any corrective action taken for each EFB.	Minn. R. 7007.0800, subp. 4, 5, and 14
PERFORMANCE TESTING	hdr
Performance Test: due before end of each 36 months starting 10/04/2008 to measure emission rate of nitrogen oxides. The next test is due before October 4, 2008 and every 36 months thereafter.	Title I Condition: Monitoring for BACT limits; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 10/04/2005 to measure emision rate of total particulate matter and particulate matter < 10 microns. The next test is due October 4, 2010 and every 60 months thereafter.	Title I Condition: Monitoring for BACT limits; MInn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 10/29/2005 to measure emission rates of carbon monoxide. The next test is due October 4, 2008, and every 36 months thereafter.	Title I Condition: Monitoring for BACT limits; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 10/29/2004 to measure emission rate of volatile organic compounds. The next test is due October 29, 2009, and every 60 months thereafter.	Title I Condition: Monitoring for BACT limits; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 10/29/2004 to measure opacity. The next test is due October 29, 2009, and every 60 months thereafter.	Minn. R. 7017.2020, subp. 1
RECORDKEEPING	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record, and maintain records of, the total weight of manufacturing residue, absorbent material or biomass fed to the burner fuel stream.	Title I Condition: Monitoring for Title I Condition (40 CFR 52.21) and Minn. R. 7007.3000); Minn. R. 7007.0800. subp. 4 and 5
Monthly Recordkeeping - Within 15 days of the end of each month, the Permittee shall calculate and record the average hourly feed rate of manufacturing residue and absorbent material burned in the boilers for the previous month. This feed rate in lb/hr shall be compared to the limit to determine compliance.	Minn. R. 7007.0800, subp. 4 and 5

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **GP 003 Conveyor Dryer System**

Associated Items: CE 002 Electrostatic Precipitator - High Efficiency

CE 021 Centrifugal Collector - High Efficiency

CE 022 Centrifugal Collector - High Efficiency

EU 003 Wellons Burner

EU 020 Conveyor Zone 1, 2 & 3

SV 002 GP003 Conveyor Dryer System

SV 017 GP003 Conveyor Dryer System

SV 018 GP003 Conveyor Dryer System

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 8.3 lbs/hour	Title I Condition: 40 CFR Section 52.21(k) (modeling); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.10 lbs/million Btu heat input . The BACT limit is the same as the NSPS limit (40 CFR pt. 60, subp. Dc), which also applies.	Title I Condition: 40 CFR Section 52.21(j) (BACT limit); 40 CFR pt. 60, subp. Dc; Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 8.3 lbs/hour	Title I Condition: 40 CFR Section 52.21(k) (modeling); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 0.10 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT limit); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 22.4 lbs/hour	Title I Condition: 40 CFR Section 52.21(k) (modeling); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.27 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT limit); Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 20.7 lbs/hour	Title I Condition: 40 CFR Section 52.21(k) (modeling); Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 0.25 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT limit); Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.16 lbs/million Btu heat input . The VOC limit is on an "as VOC basis", and is to be measured using the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).	Title I Condition: 40 CFR Section 52.21(j) (BACT limit); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity , except for one 6-minute period per hour of not more than 27 percent opacity. This limit does not apply during periods of startup, shutdown, or malfunction.	40 CFR pt. 60.43c(c)
Fuel Usage: limited to hog fuel (bark, wood, trims and dust collected from baghouses), propane, natural gas, and up to 150 lb/hr (monthly average) of the total fuel combusted may consist of manufacturing residue. Cellulose based sorbents and alternate biomass fuels may be combusted subject to the approval by the MPCA.	Minn. R. 7007.0800, subp. 2
Manufacturing residue: The manufacturing residue must be generated on site and may consist of the following: wood flake resin and wax accumulations cleaned from equipment, water-based paint residues from edgesealing and stenciling operations, confidential office records (paper) and corrugated cardboard unsuitable for recycling. In addition, the manufacturing residue shall not contain any of the following: any hazardous waste listed in Minn. R. 7045.0135, any wastes specified in Minn. R. 7045.0131 as hazardous, or batteries or any other material where mercury has been purposely introduced. Absorbent material from spills containing oil, anti-freeze, water-based paints, or soy or water-based ink may be combusted. The spilled material other than oil shall not contain: any hazardous waste listed in Minn. R. 7045.0135 or any wastes specified in Minn. R. 7045.01313 as hazardous. The oil in any absorbent material shall only be on-specification used oil.	Minn. R. 7007.0800, subp. 2
Alternative Biomass Fuel Testing Authorization: The Permittee is authorized to conduct test burns of alternative biomass fuels except for peat, wood that has been painted, stained or pressure treated, waste oil, farm chemicals, pesticide containers, demolition waste except for wood, waste from farms from an open dump, tire derived fuels, non-agricultural industrial process wastes, animal manures and wastes, or any material meeting the definition of a hazardous waste.	Minn. R. 7007.0800, subp. 2

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Alternative Biomass Fuel Testing Restrictions: Test burns for any potential biomass fuel shall be limited to 4,000 tons, not more than 45 days of operation using the fuel, and a test period not to exceed 180 days.	Minn. R. 7007.0800, subp. 2
Alternative Biomass Fuel Testing Requirements: Test burns shall be conducted to measure CO, PM, PM10 and VOC emissions, to monitor NOx and SO2 emissions, and to determine fuel chlorine, TSM and mercury content in accordance with MACT standard.	Minn. R. 7007.0800, subp. 2
Alternative Biomass Fuel Testing Submittals: 30 days prior to testing of a biomass fuel, the Permittee shall submit a written performance test notification and test plan. The test plan shall meet the requirements of Minn. R. 7017.2030 and shall also include: 1) the type(s) and estimated amount of biomass to be tested, 2) operating parameters and anticipated fuel mixes during testing for the process heater to be tested, 3) air pollutants that will be monitored and measured during testing, and 4) a testing schedule.	Minn. R. 7017.2030, subp 1-4, Minn. R. 7017.2018
Production: less than or equal to 37550 lbs/hour using 8-hour Block Average (Production of Oven Dried Strands). This limit will be amended as specified in Minn. R. 7017.2025, upon completion of each subsequent performance test.	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7017.2025, subp. 3
Oven Dried Strand Production: less than 35000 lbs/hour using 30-day Rolling Average	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
Daily Recordkeeping. At least once each 8-hour discrete block of each day of operation, the Permittee shall record the total quantity of oven dried strands produced in the conveyor-dryer system. This shall be based on production records. The Permittee, on each day of operation shall then calculate and record the following: 1) The total oven dried strand production for the previous calendar month using the daily production records. 2) The 30-day rolling average production for the previous 30-day period. 3) The 8-hour block average for each of the 8-hour blocks of the previous day.	Title I Condition: Monitoring for production limit; Minn. R. 7007.0800. subp. 4 and 5
NESHAP REQUIREMENTS	hdr
Start Of Construction: due before 07/01/2008 to route Zone 1 emissions from EU 020 Conveyor Dryer to the EU 003 Wellons Burner combustion chamber.	40 CFR Section 63.6(i)(6)(i)
The conveyor dryer system will be routing exhaust from Zone 1 into the flame zone of the Wellons burner. This is the compliance option for the NESHAP for the conveyor system; there is no associated requirement for testing or monitoring from the Wellons burner.	40 CFR Section 63.2260(a)
CONTROL EQUIPMENT	hdr
The Permittee shall operate and maintain the control equipment (ESP) such that it achieves an overall control efficiency on the Wellons Burner for Total Particulate Matter and Particulate Matter < 10 micron: greater than or equal to 95 percent control efficiency	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
Number of Fields on Line (for ESP): Greater than or equal to two, unless a new minimum is set based on the most recent MPCA-approved performance test where compliance for PM and PM10 emissions was demonstrated. If the number of fields on line falls outside the range, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Number of Fields On Line. Once each day while in operation, the Permittee shall monitor and record the number of fields on line. The Permittee shall record the time and date of each reading and whether or not the recorded measurement was within the range specified in this permit.	Minn. R. 7007.0800, subp. 4 and 5
Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment's external system components. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 4, 5, and 14
Annual Inspections: At least once per calendar year, the Permittee shall inspect the control equipment's internal system components. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 4, 5, and 14
Corrective Actions: If the ESP or any of its components are found during the inspections to need repair, the Permittee shall take corrective actions as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5, and 14
The Permittee shall operate and maintain the ESP in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
PERFORMANCE TESTING	hdr

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Performance Test: due before end of each 60 months starting 05/02/2007 to measure Total Particulate Matter, Particulate Matter less than 10 microns, Volatile Organic Compounds and Carbon Monoxide emissions. VOC emissions shall be measured in accordance with the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit). Next test is due before 5/2/12.	Title I Condition: Monitoring for Title I limits and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 05/02/2007 to measure Nitrogen Oxides emissions. Next test is due before 5/2/10.	Title I Condition: Monitoring for Title I limits and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1
COMS	hdr
The owner or operator shall install, calibrate, maintain, and operate a COMS for measuring the opacity of emissions discharged to the atmosphere, and record the output of the system. The COMS is used to measure opacity from EU 003 (Wellons Burner).	40 CFR Section 60.47c(a); Minn. R. 7011.0570; Minn. R. 7017.1006
The span value of the COMS shall be between 60 and 80 percent.	40 CFR Section 60.47c(b); Minn. R. 7011.0570
COMS Daily Calibration Drift (CD) Check: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily. The COMS must be adjusted whenever the calibration drift (CD) exceeds twice the specification of PS-1 of 40 CFR 60, Appendix B.	Minn. R. 7017.1210, subp. 2; 40 CFR Section 60.13(d)
COMS Calibration Error Audit: due before end of each calendar half-year following Permit Issuance. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Filter values used shall correspond to approximately 11%, 20%, and 37% opacity.	Minn. R. 7017.1210, subp. 3
COMS Calibration Error Audit Results Summary: due 30 days after end of each calendar half-year following COMS Calibration Error Audit.	Minn. R. 7017.1220
All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data for each successive 6-minute period.	Minn. R. 7017.1200, subp. 1, 2 & 3; 40 CFR Section 60.13(e)(1); 40 CFR Section 60.13(h)
Recordkeeping: The owner or operator must retain records of all COMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130
QA Plan Required: Develop and implement a written quality assurance plan which covers each COMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain the written procedures listed in Minn. R. 7017.1210, subp. 1.	Minn. R. 7017.1210
RECORDKEEPING	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record, and maintain records of, the total weight of manufacturing residue, absorbent material or biomass fed to the burner fuel stream.	Title I Condition: Monitoring for Title I Condition (40 CFR 52.21) and Minn. R. 7007.3000); Minn. R. 7007.0800. subp. 4 and 5
Monthly Recordkeeping - Within 15 days of the end of each month, the Permittee shall calculate and record the average hourly feed rate of manufacturing residue and absorbent material burned in the boilers for the previous month. This feed rate in lb/hr shall be compared to the limit to determine compliance.	Minn. R. 7007.0800, subp. 4 and 5

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **GP 004 Baghouses**

Associated Items: CE 004 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 005 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 006 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 008 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.004 grains/dry standard cubic foot . This applies separately to each baghouse/stack. This is more stringent than limit in Minn. R. 7011.0715, subp. 1(A), which also applies to each individual emission unit.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 0.004 grains/dry standard cubic foot . This applies separately to each baghouse/stack. In addition, the following limit applies to each emission unit/baghouse/stack: CE 004: 1.5 lb/hr CE 005: 1.5 lb/hr CE 006: 0.091 lb/hr CE 007: 0.75 lb/hr CE 008: 0.78 lb/hr CE 009: 0.65 lb/hr CE 010: 0.16 lb/hr CE 016: 0.16 lb/hr	Title I Condition: 40 CFR Section 52.21(j) (BACT) and 40 CFR Section 52.21(m) (modeling); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING	hdr
Visible Emissions: The Permittee shall check each fabric filter stack (SV 004, SV 005, SV 006, SV 007, SV 008, SV 009, SV 010 and SV 011) for any visible emissions once each day of operation during daylight hours. During inclement weather, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation, in lieu of the visible emissions observation.	Title I Condition: Monitoring for BACT Limit (40 CFR Section 52.21); Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping of Visible Emissions and Pressure Drop. The Permittee shall record the time and date of each visible emission inspection and whether or not any visible emissions were observed or each pressure drop reading and whether or not the observed pressure drop was greater than or equal to 0.1" water.	Title I Condition: Monitoring for BACT Limit (40 CFR Section 52.21); Minn. R. 7007.0800, subp. 4 and 5
CONTROL EQUIPMENT	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter and Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation.	Title I Condition: BACT Limit (40 CFR Section 52.21); Minn. R. 7007.0800, subp. 2 and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
PERFORMANCE TESTING	hdr

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Performance Test: due before end of each 60 months starting 10/29/2004 to measure total particulate matter, particulate matter < 10 microns, and opacity. The Permittee shall select three representative stacks/baghouses for testing. The next test is due October 29, 2009, and every 60 months thereafter.	Minn. R. 7017.2020, subp. 1

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **GP 006 Regenerative Thermal Oxidizers (RTO)**

Associated Items: CE 020 Thermal Oxidizer

CE 024 Thermal Oxidizer

CE 025 Thermal Oxidizer

What to do	Why to do it
CONTROL EQUIPMENT - REGENERATIVE THERMAL OXIDIZERS (RTO) NORMAL OPERATION is three RTO's operating at the same time. ALTERNATE OPERATION is two RTO's operating at the same time.	hdr
Temperature: greater than or equal to 1525 degrees F using 3-hour Average (block) for each individual RTO at the Combustion Chamber with three RTO's (3 RTO's operating at 1525 degrees F is considered normal operation) operating unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour block average temperature drops below the minimum temperature limit, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
Temperature: greater than or equal to 1470 degrees F (block) for each individual RTO at the Combustion Chamber with three RTO's operating (3 RTO's, at 1470 degrees F is considered an acceptable operating alternative) unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour block average temperature drops below the minimum temperature limit, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
Temperature: greater than or equal to 1585 degrees F using 3-hour Average (block) for each individual RTO at the Combustion Chamber with two RTO's operating (2 RTO's, at 1585 degrees F is considered an acceptable operating alternative) unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour block average temperature drops below the minimum temperature limit, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
CONTROL EQUIPMENT REQUIREMENTS	hdr
Temperature Monitoring: For each temperature monitoring device, the Permittee shall meet the requirements in paragraphs (a) and (b)(1) through (6) of Section 63.2269. (a) The Permittee must install, operate, and maintain each continuous parameter monitoring system (CPMS) according to paragraphs (a)(1) through (3) of Section 63.2269. (1) The CPMS must be capable of completing a minimum of one cycle of operation (sampling, analyzing, and recording) for each successive 15-minute period. (2) At all times, the Permittee must maintain the monitoring equipment including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment. (3) Record the results of each inspection, calibration, and validation check. (continued)	40 CFR Section 63.2269
Temperature Monitoring (cont.): (b) (1) Locate the temperature sensor in a position that provides a representative temperature. (2) Use a temperature sensor with a minimum accuracy of 4 °F or 0.75 percent of the temperature value, whichever is larger. (3) If a chart recorder is used, it must have a sensitivity with minor divisions not more than 20 °F. (continued)	40 CFR Section 63.2269

Temperature Monitoring (cont.): (4) Perform an electronic calibration at least semiannually according to the procedures in the manufacturer's owners manual. Following the electronic calibration, the Permittee shall conduct a temperature sensor validation check in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 30 °F of the process temperature sensor's reading. (5) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range or install a new temperature sensor. (6) At least quarterly, inspect all components for integrity and all electrical connections for continuity, oxidation, and galvanic corrosion.	40 CFR Section 63.2269
(a) Monitor and collect data according to Section 63.2270. (b) Except for, as appropriate, monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee must conduct all monitoring in continuous operation at all times that the process unit is operating. For purposes of calculating data averages, you must not use data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities. The Permittee must use all the data collected during all other periods in assessing compliance. (continued)	40 CFR Section 63.2270
(continued from above) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out-of-control and data are not available for required calculations constitutes a deviation from the monitoring requirements.	40 CFR Section 63.2270
(c) The Permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities; data recorded during periods of startup, shutdown, and malfunction; or data recorded during periods of control device downtime covered in any approved routine control device maintenance exemption in data averages and calculations used to report emission or operating levels, nor may such data be used in fulfilling a minimum data availability requirement, if applicable. The Permittee must use all the data collected during all other periods in assessing the operation of the control system. (d) Determine the 3-hour block average of all recorded readings, calculated after every 3 hours of operation as the average of the evenly spaced recorded readings in the previous 3 operating hours (excluding periods described in paragraphs (b) and (c) of Section 63.2270).	40 CFR Section 63.2270
(f) To calculate the data averages for each 3-hour or 24-hour averaging period, the Permittee must have at least 75 percent of the required recorded readings for that period using only recorded readings that are based on valid data (i.e., not from periods described in paragraphs (b) and (c) of Section 63.2270).	40 CFR Section 63.2270
(a) The Permittee must demonstrate continuous compliance with the compliance options, operating requirements, and work practice requirements in Sections 63.2240 and 63.2241 that apply according to the methods specified in Tables 7 and 8 to subpart DDDD. (b) The Permittee must report each instance in which the applicable compliance option, operating requirement, and work practice requirement in Tables 7 and 8 to subpart DDDD were not met. This includes periods of startup, shutdown, and malfunction and periods of control device maintenance specified in paragraphs (b)(1) through (3) of Section 63.2271. These instances are deviations from the compliance options, operating requirements, and work practice requirements in subpart DDDD. These deviations must be reported according to the requirements in Section 63.2281.	40 CFR Section 63.2271

(b)(1) [Reserved] (2) Consistent with Sections 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if the Permittee demonstrates to the EPA Administrator's satisfaction that the Permittee was operating in accordance with Section 63.6(e)(1). The EPA Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations, according to the provisions in Section 63.6(e). (3) Deviations that occur during periods of control device maintenance covered by any approved routine control device maintenance exemption are not violations if the Permittee demonstrates to the EPA Administrator's satisfaction that the Permittee was operating in accordance with the approved routine control device maintenance exemption.	40 CFR Section 63.2271

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **EU 012 Board Press**

Associated Items: CE 026 Biofilter

SV 012 CE 026 Biofilter

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 15 lbs/hour . This is more stringent than limit in Minn. R. 7011.0715, subp. 1(A), which also applies.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 15 lbs/hour	Title I Condition: 40 CFR Section 52.21(j) (BACT) and 40 CFR Section 52.21(m) (modeling); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Volatile Organic Compounds: less than or equal to 30.9 lbs/hour . The VOC limit is on an "as VOC basis", and is to be measured using the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
PERFORMANCE TESTING	hdr
Performance Test: due before end of each calendar 36 months starting 12/31/2005 to measure volatile organic compounds emissions. VOC emissions shall be measured in accordance with the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit). The hardwood and softwood percentage used as furnish during VOC testing shall be reported in the test report. The next test is due December 31, 2008, and every 36 months thereafter, unless a new testing frequency is established based on the test results.	Title I Condition: Monitoring for BACT limits; Minn. R. 7017.2020, subp. 1
This facility has a facility limit for process throughput of greater than or equal to an average of 90 percent hardwood as furnish per calendar week. If the facility chooses to test at a hardwood percentage greater than 90 percent and the performance test shows compliance, then the hardwood percentage used during testing will be the new facility operating limit for process throughput. This operating limit may be changed by subsequent compliant performance testing.	Minn. R. 7017.2025, subpart 3
Performance Test: due before end of each 36 months starting 12/31/2005 to measure Total Particulate Matter. The next test is due December 21, 2008, and every 36 months thereafter.	Title I Condition: Monitoring for BACT limits; Minn. R. 7017.2020,subp. 1
Performance Test: due before end of each calendar 36 months starting 12/31/2008 to measure Particulate Matter < 10 microns. The next test is due December 21, 2008, and every 36 months thereafter.	Title I Condition: Monitoring for BACT limits; Minn. R. 7017.2020,subp. 1
NESHAP REQUIREMENTS: 40 CFR SECTION 63, SUBPART DDDD, Plywood and Composite Wood Products (also called the Plywood MACT)	hdr
Compliance Date: EU 012 Board Press must comply with 40 CFR pt. 63, subp. DDDD (referred to as "subpart DDDD" in this portion of the permit) no later than October 1, 2008. A one year extension from the October 1, 2007 date was granted by the MPCA for the addition of control equipment (a biofilter) for the Board Press.	40 CFR Section 63.2233, 40 CFR Section 63.6(i)(4)(i)(A)
Methanol: greater than or equal to 90 percent control efficiency ; reduce emissions of Methanol by 90 percent. This limit is based on the compliance option, specified in Table 1B to Subpart DDDD of Part 63, chosen by the Permittee based on current operations. If the Permittee later chooses to switch to a different compliance option allowed in the standard, the Permittee shall comply with all applicable portions of 40 CFR pt. 63, subp. DDDD, for that option.	40 CFR Section 63.2240(b); Table 1B to Subpart DDDD of Part 63
The Permittee shall install, operate and maintain a biofilter to meet the Methanol emissions reduction required. Additional requirements from NESHAP can be found under CE 026.	40 CFR Section 63.2240(b); Table 1B to Subpart DDDD of Part 63
Install: due before 10/01/2008, a wood products enclosure as defined in 40 CFR Section 63.2292.	40 CFR Section 63.2267
NESHAP PERFORMANCE TESTING	hdr
Initial Performance Test: due 180 days after 10/01/2008 to measure Methanol emissions reduction. The Permittee shall conduct eprformance tests and establish each site-specific operating requirement in Table 2 of subpart DDDD according to the requirements in Section 63.2262 and Table 4 of subpart DDDD.	40 CFR Section 63.2260; 40 CFR Section 63.2261; 40 CFR Section 63.2262(a) through (g)
Initial Performance Test: due 180 days after 10/01/2008 to establish the 24-hour block biofilter bed temperature range according to 40 CFR Section 63.2262(m).	40 CFR Section 63.2260; 40 CFR Section 63.2262(m)

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Compliance Demonstration: Initial compliance has been demonstrated for Methanol Destruction Efficiency if: the Methanol emissions, measured using the methods in Table 4 to subpart DDDD over the 3-hour performance test, are reduced by at least 90 percent; AND the Permittee has a record of the biofilter bed operating temperatures as required by Table 2 of subpart DDDD over the performance test during which emissions were reduced by at least 90 percent.	40 CFR Part 63 subpart DDDD table 5 item (4)

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: EU 021 Edge Seal

What to do	Why to do it
EU 021 are Group 1 miscellaneous coating operatings as defined at 40 CFR Section 63.2292. The Permittee must comply with the work practice requirements by October 1, 2007 for the EU 021 Group 1 miscellaneous coating operations.	40 CFR Section 63.2233(b)
Use non-HAP coatings as defined in 40 CFR Section 63.2292.	40 CFR Section 63.2241(a) and Part 63 Subpart DDDD Table 3 item 5
Initial Compliance Demonstrations for Work Practice Requirements: The Permittee shall demonstrate initial compliance with work practice requirements by meeting all of the following requirements: 1. meet the work practice requirement at Section 63.2241(a); 2. submit a signed statement with the Notification of Compliance Status indicating that only non-HAP coatings are used; 3. maintain a record showing that only non-HAP coatings are used.	40 CFR Section 63.2260(b) and Part 63 Subpart DDDD Table 6 item 5
Continuous Compliance With the Work Practice Requirements: The Permittee must continue to use non-HAP coatings and keep records showing that they are using non-HAP coatings.	40 CFR Section 63.2271(a) and Part 63 Subpart DDDD Table 8 item 5

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **CE 014 Electrified Filter Bed**

Associated Items: EU 007 Konus Burner 1

GP 002 Konus Burners

What to do	Why to do it
CONTROL EQUIPMENT - EFB	hdr
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column across the EFB, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the range recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. The Permittee shall record the pressure drop once every 24 hours when in operation. This is the pressure drop across the bed of the EFB. If the pressure drop falls outside the range, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
EFB Bed Voltage: greater than or equal to 5.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum bed voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB bed voltage falls below the minimum, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
EFB Ionizer Voltage: greater than or equal to 15.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum EFB ionizer voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB ionizer voltage falls below the minimum, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop and EFB Bed Voltage and EFB Ionizer Voltage. Once each day while in operation, the Permittee shall monitor and record the pressure drop, bed voltage and ionizer voltage. The Permittee shall record the time and date of each pressure drop, bed voltage, and ionizer voltage reading and whether or not the recorded measurement was within the range specified in this permit.	Title I Condition: Monitoring for BACT limit; Minn. R. 7007.0800, subp. 4 and 5

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **CE 015 Electrified Filter Bed**

Associated Items: EU 008 Konus Burner 2

GP 002 Konus Burners

What to do	Why to do it
CONTROL EQUIPMENT - EFB	hdr
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column across the EFB, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the range recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. The Permittee shall record the pressure drop once every 24 hours when in operation. This is the pressure drop across the bed of the EFB. If the pressure drop falls outside the range, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
EFB Bed Voltage: greater than or equal to 5.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum bed voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB bed voltage falls below the minimum, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
EFB Ionizer Voltage: greater than or equal to 15.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum EFB ionizer voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB ionizer voltage falls below the minimum, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop and EFB Bed Voltage and EFB Ionizer Voltage. Once each day while in operation, the Permittee shall monitor and record the pressure drop, bed voltage and ionizer voltage. The Permittee shall record the time and date of each pressure drop, bed voltage, and ionizer voltage reading and whether or not the recorded measurement was within the range specified in this permit.	Title I Condition: Monitoring for BACT limit; Minn. R. 7007.0800, subp. 4 and 5

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **CE 017 Electrified Filter Bed**

Associated Items: EU 001 Face Dryer/Lamb Burner

EU 004 Face Burner 1 (backup burner)

GP 001 Lamb Burners and Dryers

What to do	Why to do it
CONTROL EQUIPMENT - EFB	hdr
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 9.0 inches of water column across the EFB, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the range recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the pressure drop falls outside the range, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
EFB Bed Voltage: greater than or equal to 5.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum bed voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB bed voltage falls below the minimum, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
EFB Ionizer Voltage: greater than or equal to 10.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum EFB ionizer voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB ionizer voltage falls below the minimum, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop and EFB Bed Voltage and EFB Ionizer Voltage. Once each day while in operation, the Permittee shall monitor and record the pressure drop, bed voltage and ionizer voltage. The Permittee shall record the time and date of each pressure drop, bed voltage, and ionizer voltage reading and whether or not the recorded measurement was within the range specified in this permit.	Title I Condition: Monitoring for BACT limit; Minn. R. 7007.0800, subp. 4 and 5

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **CE 018 Electrified Filter Bed**

Associated Items: EU 002 Core Dryer/Lamb Burner

EU 005 Core Burner 2 (backup burner)

GP 001 Lamb Burners and Dryers

What to do	Why to do it
CONTROL EQUIPMENT - EFB	hdr
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 9.0 inches of water column across the EFB, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the range recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the pressure drop falls outside the range, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
EFB Bed Voltage: greater than or equal to 5.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum bed voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB bed voltage falls below the minimum, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
EFB Ionizer Voltage: greater than or equal to 14.8 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum EFB ionizer voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB ionizer voltage falls below the minimum, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop and EFB Bed Voltage and EFB Ionizer Voltage. Once each day while in operation, the Permittee shall monitor and record the pressure drop, bed voltage and ionizer voltage. The Permittee shall record the time and date of each pressure drop, bed voltage, and ionizer voltage reading and whether or not the recorded measurement was within the range specified in this permit.	Title I Condition: Monitoring for BACT limit; Minn. R. 7007.0800, subp. 4 and 5

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Subject Item: **CE 026 Biofilter**

Associated Items: EU 012 Board Press

What to do	Why to do it
NESHAP REQUIREMENTS: 40 CFR SECTION 63, SUBPART DDDD, Plywood and Composite Wood Products (also called the Plywood MACT)	hdr
Initial Notifications Related to One Year Extension for Adding Control Equipment	hdr
Start Of Construction: due before 07/01/2008 for the CE 016 Biofilter at the EU012 Board Press.	40 CFR Section 63.6(i)(6)(i)
NESHAP COMPLIANCE OPTION AND OPERATING REQUIREMENTS	hdr
Biofilter Operating Requirement: The Permittee must maintain the 24-hour block biofilter bed temperature within the range established according to the following procedure. The Permittee must continuously monitor the biofilter bed temperature during each of the required 1-hour test runs during the performance test. To monitor biofilter bed temperature, the Permittee may use multiple thermocouples in representative locations throughout the biofilter bed and calculate the average biofilter bed temperature across these thermocouples prior to reducing the temperature data to 15-minute averages for purposes of establishing biofilter bed temperature limits. The biofilter bed temperature range must be established as the minimum and maximum 15-minute biofilter bed temperature monitored during the three test runs.	40 CFR Section 63.2240; 40 CFR Section 63.2262(m)(1)
Biofilter Operating Requirement (continued): The Permittee may base the biofilter bed temperature range on values recorded during previous performance tests provided that the data used to establish the temperature ranges have been obtained using the test methods in this subpart. If you use data from previous performance tests, you must certify that the biofilter and associated process unit have not been modified subsequent to the date of the performance tests. Replacement of the biofilter media with the same type of material is not considered a modification of the biofilter for purposes of this section.	40 CFR Section 63.2240; 40 CFR Section 63.2262(m)(1)
Expansion of Biofilter Operating Range: The Permittee may expand the biofilter temperature operating range by conducting a repeat performance test as specified in 40 CFR Section 63.2262(m)(1) that demonstrates compliance with the applicable compliance options of this subpart. The Permittee must notify the EPA Administrator and the MPCA 30 days before the new operating range is changed.	40 CFR Section 63.2262(m)(3); 40 CFR Section 63.2280(g); Minn. R. 7007.0800, subp. 2
CONTROL EQUIPMENT REQUIREMENTS	hdr
Temperature Monitoring: For each temperature monitoring device, the Permittee must meet the requirements in paragraphs (a) and (b)(1) through (6) of Section 63.2269. (a) The Permittee must install, operate, and maintain each continuous parameter monitoring system (CPMS) according to paragraphs (a)(1) through (3) of Section 63.2269. (1) The CPMS must be capable of completing a minimum of one cycle of operation (sampling, analyzing, and recording) for each successive 15-minute period. (2) At all times, the Permittee must maintain the monitoring equipment including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment. (3) Record the results of each inspection, calibration, and validation check. (continued)	40 CFR Section 63.2269(a)
Temperature Monitoring (cont.): (b) (1) Locate the temperature sensor in a position that provides a representative temperature. (2) Use a temperature sensor with a minimum accuracy of 4 °F or 0.75 percent of the temperature value, whichever is larger. (3) If a chart recorder is used, it must have a sensitivity with minor divisions not more than 20 °F. (continued)	40 CFR Section 63.2269(b)

Facility Name: Norbord Minnesota

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Temperature Monitoring (cont.): (4) Perform an electronic calibration at least semiannually according to the procedures in the manufacturer's owners manual. Following the electronic calibration, the Permittee shall conduct a temperature sensor validation check in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 30 °F of the process temperature sensor's reading. (5) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range or install a new temperature sensor. (6) At least quarterly, inspect all components for integrity and all electrical connections for continuity, oxidation, and galvanic corrosion.	40 CFR Section 63.2269(b)
(a) Monitor and collect data according to section 63.2270. (b) Except for, as appropriate, monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee must conduct all monitoring in continuous operation at all times that the process unit is operating. For purposes of calculating data averages, do not use data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities. The Permittee must use all the data collected during all other periods in assessing compliance. (continued)	40 CFR Section 63.2270(a) and (b)
(continued from above) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. Any period for which the monitoring system is out-of-control and data are not available for required calculations constitutes a deviation from the monitoring requirements.	40 CFR Section 63.2270(b)
(c) The Permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities; data recorded during periods of startup, shutdown, and malfunction; or data recorded during periods of control device downtime covered in any approved routine control device maintenance exemption in data averages and calculations used to report emission or operating levels, nor may such data be used in fulfilling a minimum data availability requirement, if applicable. Use all the data collected during all other periods in assessing the operation of the control system.	40 CFR Section 63.2270(c)
(f) To calculate the data averages for each 3-hour or 24-hour averaging period, the Permittee must have at least 75 percent of the required recorded readings for that period using only recorded readings that are based on valid data (i.e., not from periods described in paragraphs (b) and (c) of Section 63.2270).	40 CFR Section 63.2270(f)
(a) The Permittee must demonstrate continuous compliance with the compliance options, operating requirements, and work practice requirements in Sections 63.2240 and 63.2241 that apply according to the methods specified in Tables 7 and 8 to subpart DDDD. (b) The Permittee must report each instance in which the applicable compliance option, operating requirement, and work practice requirement in Tables 7 and 8 to subpart DDDD were not met. This includes periods of startup, shutdown, and malfunction and periods of control device maintenance specified in paragraphs (b)(1) through (3) of Section 63.2271. These instances are deviations from the compliance options, operating requirements, and work practice requirements in subpart DDDD. These deviations must be reported according to the requirements in Section 63.2281.	40 CFR Section 63.2271(a) and (b)

TABLE B: SUBMITTALS

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:
- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Send any application for a permit or permit amendment to:

AQ Permit Technical Advisor
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Notification of compliance status	due 60 days after Performance Test required by subpart DDDD according to 40 CFR Section 63.9(h)(2)(ii) and Section 63.2280(d). For each initial compliance demonstration, the Permittee must submit the NOCS, including all performance test results, according to 40 CFR Section 63.10(d)(2).	EU012, GP001
Notification of the Actual Date of Initial Startup	due 15 days after 10/01/2008 for the routing of Zone 1 emissions to the Wellons Burner combustion chamber.	GP003
Notification of the Actual Date of Initial Startup	due 15 days after 10/01/2008 of the CE 026 Biofilter at the EU 012 Board Press along with a MACT compliant enclosure.	CE026
Notification of the Anticipated Date of Initial Startup	due 30 days before 10/01/2008 for the startup of the CE 026 Biofilter at the EU 012 Board Press along with a MACT compliant enclosure.	CE026
Notification of the Date Construction Began	due 30 days after 07/01/2008 for the installation of the CE 026 Biofilter at the EU 012 Board Press along with a MACT compliant enclosure.	CE026
Notification of the Date Construction Began	due 30 days after 07/01/2008 for the routing of Zone 1 emissions to the Wellons Burner combustion chamber.	GP003
Performance Test Notification (written)	due 60 days before Performance Test for determining methanol reduction efficiency. The notification shall meet the requirements specified in Section 63.7(b)(1).	EU012
Performance Test Notification (written)	due 60 days before Performance Test for measuring Total HAPs (THC as C). The notification shall meet the requirements specified in Section 63.7(b)(1).	GP001
Performance Test Notification (written)	due 60 days before Performance Test to measure Total HAPs (THC as carbon) is scheduled to begin. Submit a written notification of intent to conduct the performance test.	GP001
Performance Test Report	due 45 days after Performance Test for determining methanol reduction efficiency.	EU012
Performance Test Report	due 45 days after Performance Test for measuring Total HAPs (THC as C).	GP001

TABLE B: RECURRENT SUBMITTALS

Facility Name: Norbord Minnesota

Permit Number: 00700019 - 005

What to send	When to send	Portion of Facility Affected
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter starting 05/11/2004 (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	GP003
Semiannual Compliance Report	due 31 days after end of each calendar half-year starting 10/01/2008. The first semiannual reporting period begins on October 1, 2008 and ends on June 30, 2009. The first semiannual report is due July 31, 2009. The report must contain the information in 40 CFR Section 63.2281(c) through (g).	Total Facility
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 05/11/2004 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occured, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year starting 05/11/2004 (for the previous calendar year). To be submitted on a form approved by the Commissioner , both to the Commissioner, and to the U.S. EPA regional office in Chicago. This report covers all deviations experienced during the calendar year. The EPA copy shall be sent to: Mr. George Czerniak, Chief, Air Enforcement and Compliance Assurance Branch, Air and Radiation Division, EPA Region V, 77 West Jackson Boulevard, Chicago, Illinois 60604.	Total Facility

APPENDIX B
Insignificant Activities and Applicable Requirements
Facility Name: Norbord Minnesota
Permit Number: 00700019-005

Under Minn. R. 7007.1250, subp. 1(A), the Permittee may add insignificant activities to the stationary source throughout the term of the permit without getting permit amendments. Certain exclusions apply and are listed in Minn. R. 7007.1250, subp. 2.

The following sources at the Permittee's facility qualify as insignificant activities under Minn. R. 7007.1300, subps. 2, 3 and 4 and are not required to be listed in the permit.

Minn. R. 7007.1300, subp.	Rule Description of the Activity	General Applicable Requirement
3(A)	Fuel use: space heaters fueled by, kerosene, natural gas, or propane. *Norbord Minneosta has natural gas-fired space heaters*	Minn. R. 7011.0515 (PM and opacity)
3(D)(2)	Equipment venting PM/PM_{10} inside a building, provided that emissions from the equipment are filtered through an air cleaning system and vented inside of the building 100% of the time. *Norbord Minnesota has <?>*	Minn. R. 7011.0715 (PM and opacity)
3(H)(3)	Hydraulic fluid storage tanks.	Minn. R. 7011.0715 (PM and opacity)
3(H)(4)	Brazing, soldering or welding equipment.	Minn. R. 7011.0715 (PM and opacity)
3(H)(5)	Blueprint copiers and photographic processes.	Minn. R. 7011.0715 (PM and opacity)
3(H)(6)	Equipment used exclusively for melting or application of wax. *Norbord Minnesota has slack wax tanks.*	Minn. R. 7011.0715 (PM and opacity)
3(J)	Fugitive emissions from roads and parking lots.	Minn. R. 7011.0105 (opacity)
4(B)	Emission units with potential emissions of less than 2.28 lb/hr or actual emissions of less than 1.0 lb/hr of PM, PM_{10}, NO_x, SO_2, and VOCs. *Emission units that Norbord Minnesota has that qualify under this subpart include:* • *Cold cleaner parts washers* • *Standby generators*	Minn. R. 7011.0715 (PM and opacity)

APPENDIX C

Modeling Parameters (as of June 2007)

Facility Name: Norbord Minnesota

Permit Number: 00700019-005

ID	Description	Stack Height (ft)	Stack Temp. (°F)	Flow Rate (acfm)	Stack Diam. (ft)	NO_x (lb/hr)	CO (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)
GP 001	Rotary Dryer/Lamb Burner/EFB/RTO	150	220	110,000	5.67	25.0	32.4	15.0	2.2
EU 003	Wellons Burner	117	395	56,150	5.46	22.33	20.68	4.98	8.27
GP 002	Konus Burners	80	**310**	**63,073**	4.00	12.01	80.00	10.00	1.00
EU 014	Konus EFB Rock Clean 1 - Baghouse	15	109	4000	0.75	--	--	0.16	--
EU 015	Konus EFB Rock Clean 2 - Baghouse	15	109	4000	0.75	--	--	0.16	--
SV 006	Rough Cut Saw - Baghouse	15	80.3	Non-buoyant release		--	--	1.50	--
SV 007	Final Trim Saw – Baghouse	15	80.3	Non-buoyant release		--	--	1.50	--
SV 008	Rough and Final Trim Saw - Baghouse	13	80.3	Non-buoyant release		--	--	0.09	--
SV 009	Sander Tongue & Groove - Baghouse	14	78.5	Non-buoyant release		--	--	0.75	--
SV 010	Face & Core Dryer, EFB Rock Clean - Baghouse	60	125.3	Non-buoyant release		--	--	0.65	--
SV 011	Board Forming - Baghouse	12	78.5	Non-buoyant release		--	--	0.78	--
EU 012	Board Press	110	116	120,000	8.00	--	--	15.00	--
SV 017	Conveyor Dryer – Zone 1	65	170	23,500	2.7	--	--	1.66	--
SV 018	Conveyor Dryer- Zone 2 & 3	65	180	31,600	2.9	--	--	1.66	--

Note: Changes from this permit action are shown in **bold.** These new parameters were not used in the modeling that was submitted to the MPCA in April 2002. The increased air flow rate is a result of the increase in the maximum heat input to the Konus Burners.

APPENDIX D

Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry

Facility Name: Norbord Minnesota
Permit Number: 00700019-005

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Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry

1. Purpose

The purpose of this document is to provide guidance to Source Test Coordinators on evaluating VOC testing strategies, calculating VOC emissions, and correcting existing VOC emissions testing data; provide guidance to permit writers on modifying permits in order to implement this new VOC testing strategy; and to provide guidance to permit writers and inspectors on making compliance determinations during the above permit modifications and in the interim period prior to permit modifications.

2. Applicability

The provisions of this guidance document apply to permitted facilities that dry wood (excluding dry kilns) and/or press resin-impregnated or adhesive-containing wood materials together under heat and pressure. These facilities include but are not limited to:

- Particle Board Facilities
- Medium Density Fiberboard Facilities
- Hardboard Facilities
- Plywood Manufacturing Facilities
- Veneer Drying Facilities
- Oriented Strand Board Facilities

3. Background

Recognizing there wasn't a perfect solution to quantifying VOC emissions from the wood products industry in Oregon, yet recognizing the need for a reasonable and consistent approach, ODEQ chose to quantify VOC emissions based on the carbon content of the VOC measured by Method 25A.

During EPA's enforcement actions in the Wood Products Initiative, EPA quantified VOC emissions by adjusting Method 25A data, correcting for a mass-to-carbon ratio of 1.13 (terpenes) and by applying a sample moisture correction factor.

In December of 2000, the EPA responded to an ODEQ inquiry regarding the calculation of VOC emissions. Within the EPA response, the total mass of VOCs was defined two ways:

> *For the purpose of major source or major modification determinations (and similarly for Title V applicability), emissions must be calculated as the total mass of VOCs (an "as VOC" basis). Expressing VOC emissions in any other way (e.g. as carbon) may underestimate the quantity of VOCs being emitted and thereby result in erroneous major source/modification determinations.*

However, for the purposes of determining compliance with source category specific emission limits or performance standards, VOCs may be expressed according to the test methods in the approved State Implementation Plan or 40 C.F.R. Part 60, Appendix A, as specified in the particular rule or regulation. This can be on a carbon, propane calibration gas, or compound specific basis.

ODEQ recognized they had to develop a new method for quantifying VOC emissions from the wood products industry because their current methods underestimated actual emissions by approximately 22% because it did not count the weight of the non-carbon atoms and it ignores the relative sensitivity of the test method in measuring some specific VOC's.

4. Technical Discussion of the Shortcomings of Method 25A

Drying and pressing processes that meet the applicability requirements of this guidance document emit complex forms of volatile organic compounds (VOCs), which are difficult to quantify by any one testing method. The most common VOC testing methodology currently accepted by the Department to determine regulatory compliance is EPA Method 25A. Method 25A is very repeatable, relatively easy to perform, and is one of the least expensive VOC testing methodologies. However, Method 25A has multiple shortcomings that can significantly affect emission test results.

EPA Method 25A is applicable for the measurement of gaseous organic compounds that consist primarily as alkanes, alkenes, and aromatic compounds by use of a flame ionization detector (FID). The FID response is found to be roughly proportional to the rate of carbon molecules being introduced to the flame and is dependent on the FID calibration materials, flame environment, and the characteristics of the organic molecules being analyzed. Therefore, depending on the actual VOCs present in the exhaust gas, depressed or elevated responses from the analyzer are common.

Again, EPA Method 25A is applicable for the measurement of gaseous organic compounds that consist primarily as alkanes, alkenes, and aromatic compounds. Applying EPA Method 25A to sources that emit other complex strains of VOCs requires the use of empirical data to determine the molar response of each organic compound. This data reduction technique is beyond the scope of this guidance.

5. ODEQ's Approach for VOC testing

5.1. Wood Dryers

For wood dryers, the Department will require the use of EPA Method 25A for measuring the gaseous organic compounds that consist primarily as terpenes. Methanol and Formaldehyde are to be measured separately and concurrently at least once to verify their contribution to the total VOC emissions. If methanol and formaldehyde emissions are of significant consequence, it will be necessary to measure them concurrently with EPA Method 25A every time VOC emissions testing is performed. Significant consequences will be a case-by-case determination based on the potential of the methanol and formaldehyde emissions to cause an exceedance

of a regulatory threshold such as Title V permitting, major source determination, NSR/PSD, etc. Mass emissions results from EPA Method 25A (as propane), methanol, and formaldehyde will be summed to determine VOC mass emissions. Refer to Attachment 2 for more details on specific test methods.

For direct-fired dryers that combust natural gas, ethane and/or methane may significantly bias an EPA Method 25A test. Methane and ethane are deemed to have "negligible photochemical reactivity" and are not regulated VOCs. Therefore, methane and ethane may be measured independently and the analyzer response of EPA Method 25A may be corrected. The measurement of methane and ethane should be an available option but not a requirement. Refer to Attachment 1 and 2 for more details.

5.2. Press Vents

For press vents, the Department will require the use of EPA Method 25A for measuring the gaseous organic compounds that consist primarily as terpenes. Methanol and formaldehyde are to be measured separately and concurrently every time VOC emissions testing is performed. Mass emissions results from EPA Method 25A (as propane), methanol, and formaldehyde will be summed to determine VOC mass emissions. Refer to Attachment 2 for more details.

6. Implementation of this Guidance

Full implementation of this guidance will involve many parts. Ultimately all affected permits will have to be revised to reflect the new method for quantifying VOC emissions. Until that is accomplished, staff will be faced with determining compliance with VOC emission limits, approving source test protocols, and reviewing source test results. Because this guidance does not directly lead to any emission reductions and due to the significant workload of revising permits, it is not of the highest priority to revise all permits immediately. Permits should be revised to reflect this guidance upon renewal, during a major permit modification for other reasons, or at the request of the permittee. See Section 7 of this guidance for further details on permit revisions. What follows is guidance for issues staff will face **until all affected permits are revised.**

6.1 Approving source test protocols

With the effective date of this guidance, all source test protocols for VOC testing of processes described in the applicability section should follow the procedures in Section 5 of this guidance. Results should be reported consistent with this guidance to enable development of new VOC emission limits and consistent with the test methods used to establish the existing permit limits to enable a determination of compliance with the existing permit.

6.2 Reviewing source test results

Source test reports received after the effective date of this guidance, based on protocols approved prior to the effective date of this guidance, should be evaluated based on the approved protocol.

6.3 Determining compliance with permit conditions

Evaluation of source test results to determine compliance must be consistent with the test methods used to establish the emission limits.

7. Permit Revisions

As stated earlier, due to the significant workload for these permit revisions, ODEQ will implement the permit revisions during permit renewals, significant permit modifications, or at the request of a permittee. Emphasis should be placed on updating the permit to current allowable emissions using these new procedures for calculating VOC emissions. It is not high priority to go back and re-examine every physical change from the past, using this new method to calculate VOC emissions, to evaluate whether those changes may have triggered New Source Review or Prevention of Significant Deterioration. In the Wood Products Initiative, EPA already did this evaluation for most of the bigger facilities to which this new guidance will apply.

Permit revisions will involve establishing new emission factors for PSELs, baseline emission rates, and the netting basis. If source test results are available that follow this new guidance, calculation procedures are straightforward. If there are source tests available that follow the old guidance, the results of those tests should be recalculated using the guidance in Attachment 1.

7.1. Compliance issues discovered as a result of permit revision

As baseline emission rates, netting basis, and current PSELs are recalculated using this guidance, there may be instances where compliance issues are discovered such as the recalculated PSEL exceeds the netting basis by an amount greater than the SER. In general, formal enforcement is not warranted for compliance issues resulting solely from recalculation, provided that the source satisfies any subsequently triggered requirement. For instance, the source would have to either reduce previously approved emission increases to less than the SER or satisfy the requirements of New Source Review (NSR) or Prevention of Significant Deterioration (PSD), or other applicable state rules. The appropriate timeline would have to be determined on a case-by-case basis.

If a source could reasonably reduce permitted emission levels and stay below relevant thresholds, they should be required to do so. Failure to do so could be considered a willful continuing violation. In many cases this will not be possible because they have entered into contracts in good faith based on previously approved production increases that would not be allowed based on corrected emission rates. In such a case, it seems appropriate to allow the source a reasonable period of time to satisfy any subsequent requirements such as NSR, PSD, or TV permitting requirements.

Although it will not absolve them of potential enforcement from EPA, a Mutual Agreement and Order (MAO) or a compliance schedule in the permit will be necessary to enforce a scheduled return to compliance.

If the only compliance issue is an apparent exceedance of the PSEL without triggering any new applicable requirement, the permit writer should request the permittee modify the permit application in hand to request a higher PSEL.

Although it is not high priority to re-examine all past physical changes against this new guidance for calculating VOC emissions, there may be cases where a permittee had been granted an emissions increase from a physical change and the emissions increase was just below the SER, thereby avoiding NSR or PSD permitting requirements. In some of those cases, a permittee may have knowingly underestimated the VOC emissions increase by ignoring a great deal of available information from EPA's Wood Products Initiative that demonstrated DEQ's VOC calculation methodology underestimated actual VOC emissions. DEQ will have to review these on a case-by-case basis to determine whether a permittee willfully underestimated a VOC emissions increase. If so, DEQ should pursue a formal enforcement action using current enforcement rules.

Attachment 1

CALCULATION OF VOC EMISSIONS FROM DRYING OR PRESSING OF WOOD

Calculating the VOC emissions on an "as VOC basis" will be performed as follows:

$$Evoc = E_{FID} + E_{FOR} + E_{MOH} + \sum_{i=1}^{n} Evoc_i \qquad \textit{(Equation A-1)}$$

WHERE:
Evoc = Total VOC emissions rate, lbs/hr as VOC basis
E_{FID} = Terpene emissions by Method 25A, lbs/hr as propane
E_{FOR} = Formaldehyde emissions rate, lbs/hr as formaldehyde
E_{MOH} = Methanol emissions rate, lbs/hr as methanol
$Evoc_i$ = VOC emissions rate of pollutant "i", lbs/hr as VOC, measured in conjunction with and quantified independently from terpene, formaldehyde and methanol emission measurements.
n = Number of additional VOC pollutants measured concurrently

Process based VOC emissions factor is to be calculated as follows:

$$EFvoc = Evoc/P \qquad \textit{(Equation A-2)}$$

Where:
EFvoc = Process based VOC emission factor, lbs VOCs/ # unit.
Evoc = VOC emissions rate, lbs/hr (from equation A-1)
P = Process rate, # units/hr

CALCULATION OF TERPENE EMISSIONS (E_{FID}) FROM UNREFINED METHOD 25A TEST DATA

At times, it will be necessary for the Source Test Coordinator (STC) to calculate terpene emissions from unrefined EPA Method 25A test data. Following is an overview of the calculations a STC will have to perform to accomplish such a task:

Overall correction of Method 25A data for methane, ethane, and methanol is to be performed as follows:

$$C_{FID}' = C_{FID} - \left[\frac{C_M}{3}\right] - \left[\frac{2 \times C_E}{3}\right] - \left[\frac{C_{MOH}}{6}\right] \qquad \textit{(Equation A-3)}$$

Where:
C_{FID}' = Corrected FID response, ppmv as propane (dry basis)
C_{FID} = Average FID response, ppmv as propane (dry basis)
C_M = Methane concentration, ppmv as methane (dry basis)
C_E = Ethane concentration, ppmv as ethane (dry basis)
C_{MOH} = Methanol concentration, ppmv as methanol (dry basis)

Note: C_M, C_E, and/or C_{MOH} are equal to "0" if measurements are below detection limit or if not measured simultaneously with EPA Method 25A

Terpene emissions measured by EPA Method 25A (as propane) are to be calculated as follows:

$$E_{FID} = (6.84 \times 10^{-6}) (C_{FID}') (Qs) \qquad \textit{(Equation A-4)}$$

Where:

E_{FID} = Terpene emissions measured by 25A, lbs/hr as propane

C_{FID}'= FID response, corrected for methane, ethane and/or methanol where applicable, ppmv (dry) as propane (Equation A-3)

Qs = Exhaust gas flow rate, dry standard cubic feet per minute (dry scfm)

CORRECTING VOC TEST RESULTS THAT ARE EXPRESSED AS CARBON OR AS METHANE

As permits are renewed, permit writers may need to adjust VOC Baseline emissions or VOC PSELs that were based on test results that were expressed "as carbon" or "as methane". A STC may be required to aid in evaluating how the VOCs were expressed and how to correct the results. Utilize the correction factors in Table I to adjust the emissions to an "as VOCs" basis.

TABLE I: CONVERSION FACTORS FOR CORRECTING VOC EMISSIONS DATA*

VOC PARAMETER	CONVERT FROM	CONVERT TO	MULTIPLY BY
EPA 25A (TERPENES)	AS CARBON	AS PROPANE	1.22
EPA 25A (TERPENES)	AS METHANE	AS PROPANE	0.92
FORMALDEHYDE	AS CARBON	AS FORMALDEHYDE	2.50
FORMALDEHYDE	AS METHANE	AS FORMALDEHYDE	1.88
METHANOL	AS CARBON	AS METHANOL	2.67
METHANOL	AS METHANE	AS METHANOL	2.00

Notes:

1. **Results for methanol and formaldehyde based on Method 25A are not valid and cannot be corrected using Table 1**
2. **These conversion factors are utilized to convert mass emission rates (lbs/hr) and production based emission rates (lb/# units), and are not applicable for correcting pollutant concentrations.**

EXAMPLE CALCULATIONS TO DEMONSTRATE USE OF TABLE I CONVERSION FACTORS:

Source: Steam-heated Veneer Dryer

Reported VOC Emissions Test Results:

Terpenes (EPA Method 25A) = 10.5 lbs/hr as carbon
Formaldehyde Testing Results = 2.3 lbs/hr as carbon
Methanol Testing Results = 1.7 lbs/hr as carbon
Total VOCs = 14.5 lbs/hr as carbon
Process Rate = 12,000 sq ft/hr 3/8" basis
Emission Factor = 1.21 lbs/Msf (3/8" basis) as carbon

Corrected Test Results as per Guideline:

Terpenes (EPA M25A)	**=**	**(10.5 lbC/hr) x 1.22**	**= 12.8 lbs/hr as propane**
Formaldehyde	**=**	**(2.3 lbC/hr) x 2.50**	**= 5.8 lbs/hr as formaldehyde**
Methanol	**=**	**(1.7 lbC/hr) x 2.67**	**= 4.5 lbs/hr as methanol**
Total VOCs	**=**	**(12.8+5.8+4.5)**	**= 23.1 lbs/hr (as VOC)**
Emission Factor	**=**	**23.1 lbs/hr / 12Msf (3/8")**	**= 1.93 lbs/Msf (3/8" basis) as VOCs**

A correction for methanol may be appropriate to avoid double-counting a portion (approximately 50%) of the measured methanol emissions. If these corrections were not applied to the response of the FID analyzer as demonstrated in *Equation A-3*, procedures for correcting the terpene emissions as measured by Method 25A for methane, ethane and methanol are demonstrated below. Note that these corrections are optional and are not required by the Department.

Correction of mass emission rate of terpenes as measured by EPA Method 25A:

$$E_{FID}' = E_{FID} - \left[\frac{E_M \times 44}{3 \times 16}\right] - \left[\frac{E_E \times 2 \times 44}{3 \times 30}\right] - \left[\frac{E_{MOH} \times 0.5 \times 44}{3 \times 32}\right] \qquad \textit{(Equation A-5)}$$

Where:
E_{FID}' = Corrected terpene emissions, lbs/hr as propane
E_{FID} = Terpene emissions by Method 25A (uncorrected), lbs/hr as propane
E_M=Methane emissions rate, lbs/hr as methane
E_E=Ethane emissions rate, lbs/hr as ethane
E_{MOH} = Methanol emissions rate, lbs/hr as methanol (response factor of 0.5)
Note: -E_M, E_E, and/or E_{MOH} are equal to "0" if measurements are below detection limits or if not measured simultaneously with EPA Method 25A.
-Methanol response factor set to a generic value of 0.5.

Attachment 2

Testing Methods

Acceptable testing Methods for measuring VOC emissions from sources applicable to this guideline are listed below. Note however, that since the drafting of this document, new methods may have been promulgated or a listed method may have been deemed non-representative.

EPA Method 25A for Terpene:

Calibration Materials: Calibrate the FID detector utilizing reference materials comprised of propane with a balance of nitrogen. If the oxygen concentration of the measured exhaust gas is greater or equal to 15 % by volume, then it is recommended, although not required, to use a reference material comprised of propane with a balance of air.
FID Fuel: It is recommended, although not required, that a FID fuel be used that is composed of 40% hydrogen and 60% helium. It is understood that some analyzers require a 100% hydrogen fuel and that a 40/60 fuel mixture may not be feasible.
Exhaust Moisture: It is recommended, although not required, to use a sample dilution system if the moisture content of the measured exhaust gas exceeds 20% by volume. The sample dilution system should be capable of reducing the moisture content of the sample gas to less than 10% by volume.
Response Corrections for Methane, Ethane & Methanol: Corrections to the FID response for the presence of methane, ethane & methanol are allowed, although not required. For a response correction to be considered valid, the concentration of ethane, methane, and/or methanol must be measured simultaneously with the Method 25A testing utilizing pre-approved testing methodology. A generic FID response factor of 0.5 shall be assumed for methanol. Refer to the calculation procedures of Attachment 1.
Results: Test results from Method 25A are to be reported as ppmv (dry basis as propane) and mass rate of VOCs (as propane).

Formaldehyde

EPA Method 0011 – DNPH Method.

EPA Method 0011 is an isokinetic sampling method that has inherent sample stability problems that should be addressed in the field.

NCASI Method CI/WP-98.01 – Chilled Impinger Method.

NCASI CI/WP-98.01 is a non-isokintic midget impinger method that utilizes a simple colorimetric analysis to measure formaldehyde emissions. Methanol and

phenol can also be measured from the same sample utilizing a Gas Chromatograph (GC/FID).

EPA Method 320 – Extractive Fourier Transform Infrared (FTIR)

EPA Method 320 is a difficult method but gives "real-time" data. It includes the use of a heated sample system and a FTIR analyzer. Due to the limitations of alternative methods, the use of Method 320 will become more prevalent as testers become familiar with the FTIR instrumentation.

To assure data quality, it is very important to follow QA/QC procedures of each method. Results are to be expressed as ppmv of formaldehyde and mass rate of formaldehyde emissions.

Methanol

EPA Method 308 – Chilled Midget Impingers

Non-isokinetic sample, methanol analyzed by GC/FID.

NCASI Method CI/WP-98.01 – Chilled Impinger Method.

NCASI CI/WP-98.01 is a non-isokinetic midget impinger method that utilizes a GC/FID to measure methanol. Formaldehyde and phenol may also be determined from the same sample.

EPA Method 320 – FTIR

EPA Method 320 is a difficult method but gives "real-time" data. It includes the use of a heated sample system and a FTIR analyzer. Due to the limitations of alternative methods, the use of Method 320 will become more prevalent as testers become familiar with the FTIR instrumentation.

To assure data quality, it is very important to follow QA/QC procedures of each method. Results are to be expressed as ppmv of methanol and mass rate of methanol emissions.

Methane and Ethane

EPA Method 18 (or equivalent) – Gas Chromatograph

This method is able to speciate gaseous organic compounds and provides a number of sampling options. Samples are generally extracted from the source and stored in tedlar bags or evacuated canisters. These samples are either analyzed on-site or shipped to a laboratory. Direct interface sampling and dilution

interface sampling are two techniques that are not as common, but acceptable. Results are to be expressed as ppmv of methane and ppmv of ethane. To allow correction of EPA Method 25A data, it is very important to report results on a ppmv “dry” basis.

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 00700019-005

This technical support document (TSD) is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the determination to issue the permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code: 2493)
Norbord Minnesota 4409 Northwood Road NW Solway, MN 56678 Beltrami County	4409 Northwood Road NW Solway, MN 56678 Beltrami County
Contact: Jack Wallingford Phone: 218-751-2023	

1.2. Description of the Facility

Norbord Minnesota (Permittee) owns and operates an Oriented Strandboard (OSB) manufacturing facility in Beltrami County, Minnesota (Facility); the Facility is located approximately 10 miles west of Bemidji, Minnesota. To produce OSB, logs are sliced into small strands, which are then dried, blended with a phenol-formaldehyde resin and wax mixture, formed into layers, and finally pressed into wood panels. The equipment used for the process consists of two rotary drum dryers with two wood-fired Lamb burners, one flatline conveyor dryer with a Wellons wood-fired burner, one multi-opening board press, two Konus wood-fired burners which are the heat source for the board press, and various handling, finishing, and forming processes.

The emission units, pollution control equipment and main pollutants of concern from the Facility are as follows: the two rotary dryers and Lamb burners are sources of Particulate Matter (PM and PM_{10}), Volatile Organic Compounds (VOCs), Carbon Monoxide (CO), and Nitrogen Oxides (NO_x). The rotary drum dryers/Lamb burners are currently controlled by an Electrified Filter Bed (EFB) which controls PM. The conveyor dryer and Wellons burner are also sources of PM, PM_{10}, VOC, CO and NO_x. The board press is uncontrolled and is primarily a source of VOC. The Konus burners are sources of PM, PM_{10}, VOC, CO and NO_x and are each controlled by multiclones and an EFB. The in-plant particulate sources are generally controlled by baghouses. There are also fugitive particulate sources such as bark and fuel piles and paved and unpaved roads.

Permit action 001 incorporated limits and control requirements resulting from a backward-looking Prevention of Significant Deterioration (PSD) analysis performed by the Permittee, submitted in May 2001 and updated in July 2002 and January 2003. As a result of this, the Permittee was to install a Regenerative Thermal Oxidizer (RTO) on the rotary drum dryers/Lamb burners, primarily for control of VOC, but also for control of PM and CO. The RTO was to be followed by a particulate control device, either a new Electrified Filter Bed (EFB) or a Wet Electrostatic Precipitator (WESP). The RTO and WESP or EFB were to be installed within 18 months of the Title V permit, issued on May 11, 2004.

EU 002 Core Dryer (one of two rotary drum dryers) was online with a new EFB and three RTOs on September 25, 2005, and EU 001 Face Dryer (the other rotary drum dryer) was online with a new EFB and the RTOs on October 20, 2005.

Best Available Control Technology (BACT) limits for PM, PM10, VOC, CO and NOx were established in permit action 001 as applicable on the rotary drum dryers/Lamb burners, Konus burners, board press, and various operations such as sawing and forming which are currently controlled by baghouses. The conveyor dryer system was installed as authorized in a PSD permit issued in 1995.

1.3 Description of the Activities Allowed by this Permit Action

This permit action is a major amendment to change BACT limits for the EU 002 Konus Burners as requested in Norbord's permit application dated November 22, 2005. It also incorporates new operating limits from the Notice of Compliance (NOC) letter dated November 30, 2006 from Andy Place of the Minnesota Pollution Control Agency (MPCA) to the Permittee.

October 2004 compliance stack testing found that the maximum heat input to the Konus burners was more than the rated 40 million British thermal units per hour (MMBTU/hr), and demonstrated that the unit was meeting emission limits. In 2004 it was determined that the actual maximum heat input capacity of the Konus Burners is 46 MMBTU/hr. October 2005 compliance testing demonstrated NOx lbs/MMBTU emissions were slightly above permitted limits, although the pounds per hour limit was met. Compliance test dates for the press have been changed to be more consistent with the required MACT testing dates.

This permit changes the maximum heat input for the Konus burners to 46 MMBTU/hr from 40 MMBTU/hr. The NOx limit for the Konus burners is increased from 0.3 to 0.4 lb/MMBtu. The pounds per hour limits for PM10, CO, NOx, and SO_2 are increased because the maximum heat input is increased. Norbord submitted a BACT analysis for these changes, which is located in Attachment 1 of this TSD.

Operating limits from a MPCA Notice of Compliance letter dated November 30, 2006 were added to the permit for the RTO's and EFB's.

Other changes to the permit include changing a BACT limit for hardwood percentage from 95 to 90 percent, adding National Emission Standard for Hazardous Air Pollutants (NESHAP) requirements for Subparts DDDD, updating requirements language and deleting completed requirements.

1.4 Permitting History

Permit Number and Issuance Date	Action Authorized
1750-80-I-1 (3/25/80)	Construction of Facility
Stipulation agreement (2/4/85)	Particulate matter from Lamb burners greater than allowable; PM from entire Facility over major source threshold, therefore Facility is a major PSD source. Requirements: install control equipment for Lamb burners and Konus burners.
1750-87-OT-1 (4/13/87)	Total facility permit
00700018-004 (1750-94-I/O-1) (4/7/95)	PSD permit for installation of conveyor dryer
11900002-001 (5/11/04)	Backward-looking PSD analysis resulting in installation of control equipment on rotary dryers/Lamb burners to control primarily VOC, but also particulate matter and CO and to incorporate BACT limits for PM, PM10, VOC, CO and NOx on rotary dryers/Lamb burners, Konus burners, board press and various operations
11900002-002 (2/16/05)	Administrative amendment
11900002-003 (1/26/2007)	Administrative amendment to extend performance testing date
11900002-004 (2/08/2007)	Administrative amendment to extend performance testing date
11900002-005	Major amendment to change BACT limits on Konus Burners

1.5 Facility Emissions:

Table 3. Total Facility Limited Potential Emissions

	PM tpy	PM_{10} tpy	SO_2 tpy	NO_x tpy	CO tpy	VOC tpy	Single HAP tpy	All HAPs tpy
Total Facility Limited Potential Emissions (before permit amendment)	202	202	50.2	261	426	302		
Total Facility Limited Potential Emissions (after permit amendment)	208	208	51.6	289	455	308	HAPs not reported in emission inventory	

Table 4. Facility Classification

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD	PM, PM10, NOx, VOC, CO		SO2
Part 70 Permit Program	PM, PM10, NOx, VOC, CO		SO2
Part 63 NESHAP	X		

2. Regulatory and/or Statutory Basis

New Source Review

The Facility is an existing major source under New Source Review regulations. No physical changes are authorized by this permit. Some BACT limits from a previous PSD permit are revised in this permit

Part 70 Permit Program

The Facility is a major source under the Part 70 permit program.

New Source Performance Standards (NSPS)

The New Source Performance Standard, Subpart DC: Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units applies to the operations at this facility.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

The Facility is major for HAPs. The following two NESHAPs apply to the Facility and the associated requirements have been added in this permit action.

NESHAP Subpart DDDDD: Industrial, Commercial, and Institutional Boilers and Process Heaters

The court issued an opinion on 6/8/07 vacating this NESHAP, so Norbord is not currently subject to any requirements under this rule. Three process heaters would have been subject to the large solid fuel subcategory (EU 003-Wellons Burner and EU 007 and 008 – Konus Burners). The Permittee had submitted a health-based compliance alternative by the required date of September 13, 2006. Most likely the facility will still be subject to the NESHAP once a new version promulgated.

NESHAP Subpart DDDD: Plywood and Composite Wood Products

The court issued an opinion on 6/19/07 regarding this NESHAP, eliminating the low-risk demonstration subcategory and removing the compliance deadline extension of October 1, 2008, making the new compliance deadline October 1, 2007.

Norbord applied for a one-year extension as allowed under 40CFR 63.6(i)(4)(i)(A) on July 12, 2007. They plan to install either a catalytic oxidizer (RCO or TCO) or a biofilter at the EU 012 Board Press along with a MACT compliant enclosure. Zone 1 emissions from the conveyor dryer will be routed to the Wellons burner combustion chamber. No additional requirements, i.e. monitoring or testing, apply to the conveyor dryer.

Minnesota State Rules

Portions of the Facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment

Table 5. Regulatory Overview of Units Affected by the Permit Amendment

EU, GP, or SV	Applicable Regulations	Comments:
Total Facility	40 CFR pt. 63, subp. DDDD	National Emission Standards for Hazardous Air Pollutants: Plywood and Composite Wood Products. This is an existing source under this rule.

3. Technical Information

Process Throughput Facility Limit

The Facility had a BACT limit for process throughput for greater than or equal to 95 percent of hardwood as furnish using a 12-month rolling average. The purpose of this limit was to limit the amount of softwood used so that the Facility would be in compliance with its VOC emission limit for the EU 012 Board Press. The Facility requested an increase in the amount of softwood used as furnish. The new limit is for greater than or equal to 90 percent of hardwood as furnish using a weekly average. The averaging period was changed from a 12-month rolling average to a weekly average based on current practice for other similar facilities. The Facility is required to test for VOC's using the maximum amount of softwood as furnish that they intend to use. If they test at less than 10 percent softwood and pass, then this will be their new softwood percentage limit.

Air Modeling

The Facility did a quick screening analysis to update the modeling for the changes in this permit amendment. These changes are not expected to contribute to any exceedances to the National Ambient Air Quality Standards. The analysis is located in Appendix C of the major amendment permit application, which is Attachment 1 to this TSD.

Notice of Compliance dated 11/30/2006 from Andy Place of the MPCA

Control equipment requirements were moved from GP 001 to CE 017 and 018 and the operating limits established in the 11/20/2006 NOC were added to the permit.

Three Regenerative Thermal Oxidizers (RTO's) were grouped and their requirements were moved to the group.

Requirement Language Changes

In permit action 001, CE 019 and CE 023 Electrostatic Precipitator – High Efficiency were listed as associated items under GP001 Lamb Burners and Dryers because it was not known if Norbord would install electrostatic precipitators or electrified filter beds. In 2005, Norbord installed Electrified Filter Beds. The permit language and facility description were updated to reflect these changes. CE 019 and 023 Electrostatic Precipitators were changed to CE 017 and 018 Electrified Filter Beds.

The biomass fuel usage requirements in groups 001, 002 and 003 were updated to reflect current practice.

On-site road silt loading measurement requirements have been completed and were removed from the Total Facility section of the permit.

Manufacturing residue requirements under GP 001, 002, 003 modified, the phrase "WESP effluent and sludges" was removed from the list because a WESP was not installed.

The operation and maintenance plan and emission inventory report requirement language was updated in the Total Facility section of the permit.

The deadline for the next performance test for NO_x, for the Konus burners was changed to October 4, 2008, to be consistent with other testing.

The initial performance test for the Conveyor Dryer system (GP 003) has been completed; the testing frequency for NO_x has been added to the permit. Testing will be required every 3 years, since the results were ~75% of the emissions limit.

4. Permit Organization

The permit meets the MPCA Delta Guidance for ordering and grouping of requirements.

5. Comments Received

Public Notice Period: June 13, 2008 – July 14, 2008
EPA 45-day Review Period: June 13, 2008 – July 29, 2008

Comments were not received from the public during the public notice period.
Comments were not received from EPA during their review period. No changes to the permit were made since it was placed on public notice.

6. Conclusion

Based on the information provided by Norbord Minnesota, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 00700019-005, and TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Lea Nyberg (permit writer/engineer)
Paula Connell (permit writer/engineer)
Cary Hernandez (enforcement)
Andy Place (stack testing)
Sarah Sevcik (peer reviewer)

AQ File No. 1750; DQ 792, 1312

Attachments: 1. Facility Description and CD-01 Forms
2. BACT Analysis