

AIR EMISSION PERMIT NO. 11900002-002

IS ISSUED TO

American Crystal Sugar - E Grand Forks
US Highway 2 E
East Grand Forks, Polk County, MN 56721

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):

Permit Type	Application Date
Total Facility Operating Permit	October 20, 1995
Minor Amendment	January 30, 2001
Major Amendment	June 4, 2001

This permit authorizes the permittee to operate and modify 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 as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal ; PSD/NSR

Issue Date: September 28, 2001

Expiration: June 2, 2005

All Title I Conditions do not expire.

Ann M. Foss
Manager
North/South Major Facilities

for Karen A. Studders
Commissioner
Minnesota Pollution Control Agency

TABLE OF CONTENTS

Notice to the Permittee

Permit Shield

Facility Description

Table A: Limits and Other Requirements

Table B: Submittals

Appendices: Attached and Referenced in Table A

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. If certain requirements have been determined to not apply they are listed in Table A of this permit.

FACILITY DESCRIPTION:

The Permittee owns and operates a sugar beet processing facility. The emission units at this stationary source consists of two coal-fired boilers, a natural gas-fired boiler, three natural gas-fired pulp dryers, a pulp pellet cooler, a pulp pellet loadout operation, two lime kilns, two lime slakers, two sugar dryers, two sugar coolers, and dust collection systems from sugar packaging and storage operations.

The primary products from the facility are beet sugar, beet pulp, and beet molasses. Portions of the facility operate year round. Raw sugar beets are processed during the slicing campaign, which runs from the early fall to late spring. The juice and molasses campaigns run into the summer.

This major modification to the Part 70 permit adjusts PM₁₀ limits on Boiler 1 and 2, Pulp Dryers A, B and C, the A-Side Sugar Dryer and the B-Side Sugar Dryer to allow for inclusion of condensable particulate matter that was not included in the air dispersion modeling conducted by the Permittee in 1996. The Permittee has re-modeled the entire facility for PM₁₀ at the new limits and incorporating all other changes since the previous modeling, conducted in 1996, to demonstrate attainment of ambient air standards for PM₁₀, as detailed in the technical support document. This modification also includes the installation of a second pulp pellet loadout system as described in the January 2001 minor modification permit application.

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks
 Permit Number: 11900002 - 002

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
A. FACILITY SPECIFIC REQUIREMENTS	hdr
Parameters Used in Modeling: The stack heights, emission rates, and other parameters used in the modeling for Air Emission Permit (AEP) No. 11900002-012, as incorporated into AEP No. 11900002-001 and amended by AEP No. 11900002-002 are listed in the Appendix section of this permit. The Permittee must submit to the Commissioner for approval any revisions of these parameters, that are caused by a physical change or change in the method of operation at the facility, and must wait for a written approval before making such changes.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
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 characteristics due to the revisions of the information must be equivalent to or better than the dispersion characteristics modeled in the applications for AEP Nos. 11900002-012 and 11900002-002 (see the Appendix to this permit) and approved in a memo from Margaret McCourtney to Tom Holstrom dated May 14, 1997. 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, continued from above
<p>For any physical or operational change to a stack or fugitive source emitting PM10 or for any other increase in PM10 emissions (whether or not the increase would require a permit amendment of any type), the Permittee must remodel.</p> <p>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.</p> <p>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.</p> <p>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.</p>	Title I Condition, continued from above
Hydrogen Sulfide: less than or equal to 0.05 parts per million as a half hour average not to be exceeded more than twice per year in the ambient air around the facility. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7009.0080
Hydrogen Sulfide: less than or equal to 0.03 parts per million as a half hour average not to be exceeded more than twice in any five consecutive days in the ambient air around the facility. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7009.0080
Hydrogen Sulfide Ambient Monitoring: the Permittee shall establish a hydrogen sulfide monitoring network to measure the ambient concentration of hydrogen sulfide during the warm weather months (April through October). The network must be in place and operating by April 1, 2000. A Hydrogen Sulfide Monitoring Plan shall be submitted to the MPCA and approved before the network can be constructed. The Permittee shall operate the network in subsequent years. The Permittee may make a written request to the Commissioner to cease operation of the network at any time. An analysis of the ambient H2S data collected to date shall accompany this request. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7007.0800, subp. 4
B. GENERAL REQUIREMENTS	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and B.	Minn. R. ch. 7017
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

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

<p>Operation and Maintenance Plan: due 60 days after issuance of Permit 11900002-001, summarizing the operation and maintenance for all pollution control equipment. Included in the plan should be the corrective action procedures to be followed to return the control equipment to within specified range(s); corrective action procedures to be followed in the event of a malfunction or breakdown; a description of inspection procedures to be followed; and records kept to demonstrate plan implementation. (This plan was submitted on August 2, 2000)</p>	<p>Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)</p>
<p>Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued in accordance with Tables A and B.</p>	<p>Minn. R. 7007.0800, subp. 4 (D)</p>
<p>Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Operation of Monitoring Equipment: Unless otherwise noted in Tables A and B, monitoring a process or of the 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 span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate federal or state air pollution control rule, without reducing the total amount of pollutant emitted.</p>	<p>Minn. R. 7011.0020</p>
<p>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.</p> <p>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.</p>	<p>Minn. R. 7019.1000, subp. 3</p>
<p>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.</p> <p>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.</p>	<p>Minn. R. 7019.1000, subp. 2</p>
<p>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.</p>	<p>Minn. R. 7019.1000, subp. 1</p>
<p>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:</p> <ol style="list-style-type: none"> 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. 	<p>Minn. R. 7019.1000, subp. 1</p>
<p>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.</p>	<p>Minn. R. 7019.1000, subp. 4</p>
<p>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.</p>	<p>Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

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
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. 7007.0800, subp. 1(H)
Record Keeping: Maintain records describing any insignificant modification (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 strip-chart 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)
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
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Inspections: The permittee shall comply with the inspection procedures and requirements as found at Minn. R. 7007.0800, subp 9(A).	Minn. R. 7007.0800, subp. 9(A)
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095
State Performance Standards: Opacity standards apply at all times except during periods of start-up, shutdown, and malfunction, and as otherwise provided in an applicable requirement or compliance document. The exemption for periods of start-up, shutdown and malfunction applies only if the conditions of Minn. R. 7011.0010, subp. 4(A), (B), and (C) are met.	Minn. R. 7011.0010, subp. 4
Federal Performance Standards: Opacity standards apply at all times except during periods of start-up, shutdown, and malfunction, and as otherwise provided in an applicable requirement or compliance document.	40 CFR Section 60.11(c); EPA Memo & Guidance on 'Affirmative Defense,' September 20, 1999.
Application for Permit Amendment: If you need a permit amendment, submit application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.15000. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: GP 001 East and West Lime Slakers

Associated Items: CE 014 Venturi Scrubber

EU 010 East Lime Slaker

EU 011 West Lime Slaker

SV 010

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 4.82 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Process Throughput: less than or equal to 21.9 tons/hour using 8-hour Block Average (lime rock throughput). This limit will be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the scrubber liquid flow rate, supply pressure and the gas pressure drop across the scrubber once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 5 inches of water column and less than or equal to 15 inches of water column	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Water flow rate: greater than or equal to 30 gallons/minute and less than or equal to 60 gallons/minute	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Water pressure: greater than or equal to 10 psi (gauge) and less than 60 psi (gauge)	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 11/15/2000 to measure PM10 emissions. The interval between performance tests shall not exceed 60 months. The next test is due on or before 11/15/2005.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 11/15/2000 to measure total particulate matter emissions. The interval between performance tests shall not exceed 60 months. The next test is due on or before 11/15/2005.	Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 1
Performance Test Plan: due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before each Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after each Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2035, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: GP 002 East and West Lime Kilns

Associated Items: CE 012 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

CE 013 Carbonation System

EU 008 East Lime Kiln

EU 009 West Lime Kiln

SV 009

SV 030 Carbonation Vent

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 4.36 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 27.0 lbs/hour during startup	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 34.1 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0610, subp. 1(A)(1)
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)
Sulfur Dioxide: less than or equal to 4 lbs/million Btu heat input	Minn. R. 7011.0610, subp. 2(B)
Sulfur Content of Fuel: less than or equal to 0.75 percent by weight for coke as received	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Fuels Allowed: industrial oven coke as the main fuel source and propane and wood fuels for initiating combustion of the coke.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
MONITORING REQUIREMENTS	hdr
Process Throughput: less than or equal to 20.6 tons/hour using 8-hour Block Average (lime rock throughput). This limit will be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
Fuel Usage: less than or equal to 1.5 tons/hour using 8-hour Block Average (coke throughput). This limit will be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the baghouse once each operating day. If the monitored parameter is found to be outside the range in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
<p>Fuel Sulfur Content: Determine the sulfur content of each delivery of coke by either of the following methods:</p> <p>1) obtain from the fuel supplier a signed certification of the sulfur content of the fuel for each shipment of fuel delivered, or</p> <p>2) according to the current American Society of Testing and Materials (ASTM) sampling and analysis methods.</p> <p>With either method, the weight represented by each separate sulfur content analysis shall be less than or equal to one train car. These records shall be maintained for a minimum of five years from the date the information was obtained.</p>	Minn. R. 7007.0800, subp. 4, Minn. R. 7007.0800, subp. 5
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 11/15/2000 to measure PM10 emissions. The interval between performance tests shall not exceed 60 months. The next test is due on or before 11/15/2005.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 11/15/2000 to measure total particulate matter emissions. The interval between performance tests shall not exceed 60 months. The next test is due on or before 11/15/2005.	Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Performance Test Plan: due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before each Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after each Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2035, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: GP 003 Sugar Handling System - Group A

- Associated Items:** CE 021 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 022 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 024 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 025 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 026 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 EU 020 Weibull Bin No. 1 Dust Control System
 EU 021 Weibull Bin No. 2 Dust Control System
 EU 023 8A Screening Tower Central Vacuum
 EU 024 Weibull Bin No. 3 Dust Control
 EU 025 Weibull Bin No. 3, Central Vacuum
 SV 019
 SV 020
 SV 022
 SV 023
 SV 024

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.86 lbs/hour (this limit applies individually to each emission unit listed above under Associated Items).	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (this limit applies individually to each emission unit listed above under Associated Items).	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity (this limit applies individually to each emission unit listed above under Associated Items).	Minn. R. 7011.0715, subp. 1(B)
POLLUTION CONTROL EQUIPMENT REQUIREMENTS	hdr
Operation and Maintenance of Fabric Filter: The Permittee shall operate and maintain each fabric filter listed above under Associated Items according to the operation and maintenance plan for the facility and the applicable control equipment manufacturer's specifications contained therein.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k)
Visible Emissions Monitoring: the Permittee shall perform a visible emission check on each stack/vent listed above under Associated Items once each day while its associated emission unit is in operation (during daylight hours). A visible emission check shall consist of viewing the exhaust gas exiting the stack and recording whether visible emissions are present or not.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4
Visible Emissions Corrective Actions: if visible emissions (VEs) are observed, determine the cause and take corrective actions within 24 hours of discovery to eliminate VEs.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2
Visible Emissions Recordkeeping: record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the time and date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: GP 004 Sugar Handling System - Group B

- Associated Items:** CE 027 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 029 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 030 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 031 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 EU 026 Remelt Conveyor Dust Control System
 EU 028 Sugar Bagger Dust Control System
 EU 029 Packer Dust Control System
 EU 030 Screening Tower Dust Control System
 SV 025
 SV 027
 SV 028
 SV 029

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.1 lbs/hour (this limit applies individually to each emission unit listed above under Associated Items).	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735 (this limit applies individually to each emission unit listed above under Associated Items).	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity (this limit applies individually to each emission unit listed above under Associated Items).	Minn. R. 7011.0715, subp. 1(B)
POLLUTION CONTROL EQUIPMENT REQUIREMENTS	hdr
Operation and Maintenance of Fabric Filter: The Permittee shall operate and maintain each fabric filter listed above under Associated Items according to the operation and maintenance plan for the facility and the applicable control equipment manufacturer's specifications contained therein.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k)
Visible Emissions Monitoring: the Permittee shall perform a visible emission check on each stack/vent listed above under Associated Items once each day while its associated emission unit is in operation (during daylight hours). A visible emission check shall consist of viewing the exhaust gas exiting the stack and recording whether visible emissions are present or not.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4
Visible Emissions Corrective Actions: if visible emissions (VEs) are observed, determine the cause and take corrective actions within 24 hours of discovery to eliminate VEs.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2
Visible Emissions Recordkeeping: record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the time and date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: GP 005 Pulp Pellet Loadout

Associated Items: CE 011 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 CE 032 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
 EU 007 Pulp Pellet Loadout
 EU 031 Pulp Pellet Loadout
 SV 008
 SV 031

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 1.89 lbs/hour from EU007 (SV008/CE011).	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 1.71 lbs/hour from EU0031 (SV031/CE032).	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735. This emission standard applies individually to each emission unit.	Minn. R. 7011.0715, subp. 1(A)
The Permittee shall clean up commodities spilled on the driveway and other facility property as required to minimize fugitive emissions to a level consistent with RACT (reasonably available control technology).	Minn. R. 7011.1005, subp. 1(A)
Opacity: less than or equal to 10 percent opacity for fugitive emissions from truck loading at EU007 and EU031.	Minn. R. 7011.1005, subp. 3(B)
Opacity: less than or equal to 10 percent opacity for emissions vented through SV008 and SV031.	Minn. R. 7011.1005, subp. 3(D)
Total Particulate Matter: greater than or equal to 80 percent collection efficiency for CE011 and CE032.	Minn. R. 7011.1005, subp. 3(E)
POLLUTION CONTROL EQUIPMENT REQUIREMENTS	hdr
Operation and Maintenance of Fabric Filter: The permittee shall operate and maintain the fabric filter according to the operation and maintenance plan for the facility and the applicable control equipment manufacturer's specifications contained therein.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k)
Visible Emissions Monitoring: the Permittee shall perform a visible emission check on SV008 and SV031 once each day while EU007 or EU031 is in operation (during daylight hours). A visible emission check shall consist of viewing the exhaust gas exiting the stack and recording whether visible emissions are present or not.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4
Visible Emissions Corrective Actions: if visible emissions (VEs) are observed, determine the cause and take corrective actions within 24 hours of discovery to eliminate VEs.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2
Visible Emissions Recordkeeping: record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the time and date the actions were taken.	Minn. R. 7007.0800, subp. 5
TESTING REQUIREMENTS	hdr
Performance Test: due 365 days after Permit Issuance to measure PM10 emissions from SV031 (EU031/CE032).	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before Performance Test	Minn. R. 7017.2030, subp. 1
Performance Test Plan: due 30 days before Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after Performance Test	Minn. R. 7017.2035, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 001 Boiler No. 1

Associated Items: CE 001 Electrostatic Precipitator - High Efficiency

MR 001

MR 002

MR 003

SV 001

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 25.0 lbs/hour using EPA Methods 201A and 202. If EPA Method 5 is used in place of Method 201A the sum of Methods 5 and 202 shall be considered to be the PM10 result. The Method 201A (or Method 5) result plus the organic condensible fraction of the Method 202 result shall not exceed the Total Particulate Matter limit for this emission unit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.10 lbs/million Btu heat input	40 CFR Section 60.42(a)(1); Minn. R. 7007.0555
Sulfur Dioxide: less than or equal to 427.2 lbs/hour using 3-hour Average	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 1.2 lbs/million Btu heat input using 3-hour Average	40 CFR Section 60.43(a)(2); Minn. R. 7007.0555
Nitrogen Oxides: less than or equal to 227.9 lbs/hour using 1-Hour Average	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.70 lbs/million Btu heat input using 3-hour Average	40 CFR Section 60.44(a)(3); Minn. R. 7007.0555
Opacity: less than or equal to 20 percent opacity except for one 6-minute period per hour of not more than 27% opacity.	40 CFR Section 60.42(a)(2); Minn. R. 7007.0555
Fuels Allowed: Subbituminous coal and less than 600 tons per year (total for both EU 001 and EU 002) of coke fines. The Permittee may also burn less than 15,000 gallons per year of on-site generated used oil and used oil sorbents. Both fuel limits are based on 12-month rolling sums.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Boiler Pollution Control Equipment Requirement: the Permittee shall operate CE 001 with no less than the minimum number of fields online during the most-recent performance test that measured PM10 emissions less than the applicable limit in table A of this permit.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 14
Boiler Pollution Control Equipment Monitoring/Recordkeeping: the Permittee shall record the minimum number of fields online in CE 001 once each day of operation of EU 001. If the minimum number of fields are found to not be online, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to return the minimum number of fields online. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 5
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 03/15/2001 to measure particulate matter less than 10 microns (PM10) emissions. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 03/15/2001 to measure total particulate matter. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 1
Performance Test Plan: due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before each Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after each Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2035, subp. 2
MONITORING REQUIREMENTS	hdr
Fuel Usage: By the 15th day of each calendar month calculate the total amount of coke fines and used oil/sorbents combusted in EU 001 and EU002 for the previous month. At this time also calculate the new 12-month rolling sum.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Steam Flow: less than or equal to 260920 lbs/hour using 8-hour Block Average . This limit will be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
Emissions Monitoring: the owner or operator shall use CEMS to measure SO2 and NOx emissions from SV 001 (EU 001).	Title I Condition: monitoring of emissions subject to a limit based on 40 CFR Section 52.21(k); 40 CFR Section 60.45(a); Minn. R. 7007.0555; Minn. R. 7017.1006
CEMS/COMS Continuous Operation: CEMS/COMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS/COMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090, subp. 1
CEMS Daily Calibration Drift (CD) Test: the CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS.	40 CFR pt. 60, Appendix F, section 4.1; 40 CFR Section 60.13(d)(1); Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit: due before end of each calendar half-year following Permit Issuance . Conduct CGA at least 3 months apart and not greater than 8 months apart. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 4
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following Permit Issuance . If the relative accuracy is 15% or less the next CEMS RATA is not due for 24 months. Follow the procedures in 40 CFR pt. 60, Appendix B and Appendix F. The reference method shall be conducted in a location that is at least 2 duct diameters downstream and one-half duct diameter upstream from the nearest flow disturbance.	Minn. R. 7017.1170, subp. 5
Emissions Monitoring: the owner or operator shall use a COMS to measure opacity emissions from SV 001 (EU 001).	40 CFR Section 60.45(a); Minn. R. 7007.0555; Minn. R. 7017.1006
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.	40CFR Section 60.13(d); Minn. R. 7017.1210, subp. 2
COMS Calibration Error Audit: due before end of each calendar half-year following Permit Issuance . Conduct audits at least 3 months apart but no greater than 8 months apart.	Minn. R. 7017.1210, subp. 3
COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to 6 minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points in the 6 minute averaging period.	40 CFR Section 60.13(h); Minn. R. 7017.1200, subp. 1, 2, & 3
QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR 60, App. F, Section 3.	Minn. R. 7017.1170, subp. 2
QA Plan: Develop and implement a written quality assurance plan that 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
Recordkeeping: the owner or operator must retain records of all CEMS 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; Minn. R. 7007.0800, subp. 5
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; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 002 Boiler No. 2

Associated Items: CE 002 Electrostatic Precipitator - High Efficiency

MR 004

MR 005

MR 006

SV 002

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 25.0 lbs/hour using EPA Methods 201A and 202. If EPA Method 5 is used in place of Method 201A the sum of Methods 5 and 202 shall be considered to be the PM10 result. The Method 201A (or Method 5) result plus the organic condensable fraction of the Method 202 result shall not exceed the Total Particulate Matter limit for this emission unit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.10 lbs/million Btu heat input	40 CFR Section 60.42(a)(1); Minn. R. 7007.0555
Sulfur Dioxide: less than or equal to 427.2 lbs/hour using 3-hour Average	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 1.2 lbs/million Btu heat input using 3-hour Average	40 CFR Section 60.43(a)(2); Minn. R. 7007.0555
Nitrogen Oxides: less than or equal to 227.9 lbs/hour using 1-Hour Average	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.70 lbs/million Btu heat input using 3-hour Average	40 CFR Section 60.44(a)(3); Minn. R. 7007.0555
Opacity: less than or equal to 20 percent opacity except for one 6-minute period per hour of not more than 27% opacity.	40 CFR Section 60.42(a)(2); Minn. R. 7007.0555
Fuels Allowed: Subbituminous coal and less than 600 tons per year (total for both EU 001 and EU 002) of coke fines. The Permittee may also burn less than 15,000 gallons per year of on-site generated used oil and used oil sorbents. Both fuel limits are based on 12-month rolling sums.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
CONTROL EQUIPMENT OPERATING REQUIREMENTS	hdr
Boiler Pollution Control Equipment Requirement: the Permittee shall operate CE 002 with no less than the minimum number of fields online during the most-recent performance test that measured PM10 emissions less than the applicable limit in table A of this permit.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 14
Boiler Pollution Control Equipment Monitoring/Recordkeeping: the Permittee shall record the minimum number of fields online in CE 002 once each day of operation of EU 002. If the minimum number of fields are found to not be online, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to return the minimum number of fields online. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 5
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 03/15/2001 to measure particulate matter less than 10 microns (PM10) emissions. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 03/15/2001 to measure total particulate matter. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 1
Performance Test Plan: due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before each Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after each Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2035, subp. 2
MONITORING REQUIREMENTS	hdr
Fuel Usage: By the 15th day of each calendar month calculate the total amount of coke fines and used oil/sorbents combusted in EU 001 and EU002 for the previous month. At this time also calculate the new 12-month rolling sum.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Steam Flow: less than or equal to 263120 lbs/hour using 8-hour Block Average . This limit will be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
Emissions Monitoring: the owner or operator shall use CEMS to measure SO2 and NOx emissions from SV 002 (EU 002).	Title I Condition: monitoring of emissions subject to a limit based on 40 CFR Section 52.21(k); 40 CFR Section 60.45(a); Minn. R. 7007.0555; Minn. R. 7017.1006
CEMS/COMS Continuous Operation: CEMS/COMS must be operated and data recorded during all periods of emission unit operation including periods of emission unit start-up, shutdown, or malfunction except for periods of acceptable monitor downtime. This requirement applies whether or not a numerical emission limit applies during these periods. A CEMS/COMS must not be bypassed except in emergencies where failure to bypass would endanger human health, safety, or plant equipment.	Minn. R. 7017.1090, subp. 1
CEMS Daily Calibration Drift (CD) Test: the CD shall be quantified and recorded at zero (low-level) and upscale (high-level) gas concentrations at least once daily. The CEMS shall be adjusted whenever the CD exceeds twice the specification of 40 CFR pt. 60, Appendix B. 40 CFR pt. 60, Appendix F, shall be used to determine out-of-control periods for CEMS.	40 CFR pt. 60, Appendix F, section 4.1; 40 CFR Section 60.13(d)(1); Minn. R. 7017.1170, subp. 3
Cylinder Gas Audit: due before end of each calendar half-year following Permit Issuance . Conduct CGA at least 3 months apart and not greater than 8 months apart. Follow the procedures in 40 CFR pt. 60, Appendix F.	Minn. R. 7017.1170, subp. 4
CEMS Relative Accuracy Test Audit (RATA): due before end of each calendar year following Permit Issuance . If the relative accuracy is 15% or less the next CEMS RATA is not due for 24 months. Follow the procedures in 40 CFR pt. 60, Appendix B and Appendix F. The reference method shall be conducted in a location that is at least 2 duct diameters downstream and one-half duct diameter upstream from the nearest flow disturbance.	Minn. R. 7017.1170, subp. 5
Emissions Monitoring: the owner or operator shall use a COMS to measure opacity emissions from SV 001 (EU 001).	40 CFR Section 60.45(a); Minn. R. 7007.0555; Minn. R. 7017.1006
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.	40CFR Section 60.13(d); Minn. R. 7017.1210, subp. 2
COMS Calibration Error Audit: due before end of each calendar half-year following Permit Issuance . Conduct audits at least 3 months apart but no greater than 8 months apart.	Minn. R. 7017.1210, subp. 3
COMS Monitoring Data: Owners or operators of all COMS shall reduce all data to 6 minute averages. Opacity averages shall be calculated from all equally spaced consecutive 10-second (or shorter) data points in the 6 minute averaging period.	40 CFR Section 60.13(h); Minn. R. 7017.1200, subp. 1, 2, & 3
QA Plan: Develop and implement a written quality assurance plan that covers each CEMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain all of the information required by 40 CFR 60, App. F, Section 3.	Minn. R. 7017.1170, subp. 2
QA Plan: Develop and implement a written quality assurance plan that 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
Recordkeeping: the owner or operator must retain records of all CEMS 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; Minn. R. 7007.0800, subp. 5
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; Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 003 Pulp Dryer A

Associated Items: CE 003 Multiple Cyclone w/Fly Ash Reinjection-Common w/Coal Boilers

CE 004 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

SV 003

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 45.0 lbs/hour using EPA Methods 201A and 202. If EPA Method 5 is used in place of Method 201A the sum of Methods 5 and 202 shall be considered to be the PM10 result. The Method 201A (or Method 5) result plus the organic condensable fraction of the Method 202 result shall not exceed the Total Particulate Matter limit for this emission unit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0610, subp. 1(A)(1)
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)
Fuels Allowed: natural gas and biogas (methane generated at the wastewater treatment system) only.	Minn. R. 7007.0800, subp. 2
MONITORING REQUIREMENTS	hdr
Process Throughput: less than or equal to 7.28 tons/hour using 8-hour Block Average (pressed pulp feed rate on a bone dry basis). This limit will be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the multiclone and the baghouse once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 2 inches of water column and less than or equal to 6 inches of water column across the multiclone	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Pressure Drop: greater than or equal to 3 inches of water column and less than or equal to 6 inches of water column across the baghouse	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 03/15/2001 to measure particulate matter less than 10 microns (PM10) emissions. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 03/15/2001 to measure total particulate matter. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 1
Performance Test Plan: due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before each Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after each Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2035, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 004 Pulp Dryer B

Associated Items: CE 005 Multiple Cyclone w/Fly Ash Reinjection-Common w/Coal Boilers

CE 006 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

SV 004

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 45.0 lbs/hour using EPA Methods 201A and 202. If EPA Method 5 is used in place of Method 201A the sum of Methods 5 and 202 shall be considered to be the PM10 result. The Method 201A (or Method 5) result plus the organic condensable fraction of the Method 202 result shall not exceed the Total Particulate Matter limit for this emission unit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0610, subp. 1(A)(1)
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)
Fuels Allowed: natural gas and biogas (methane generated from the wastewater treatment system) only.	Minn. R. 7007.0800, subp. 2
MONITORING REQUIREMENTS	hdr
Process Throughput: less than or equal to 9.46 tons/hour using 8-hour Block Average (pressed pulp feed rate on a bone dry basis). This limit will be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the multiclone and the baghouse once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 2 inches of water column and less than or equal to 6 inches of water column across the multiclone	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Pressure Drop: greater than or equal to 3 inches of water column and less than or equal to 6 inches of water column across the baghouse	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 03/15/2001 to measure particulate matter less than 10 microns (PM10) emissions. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 03/15/2001 to measure total particulate matter. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 1
Performance Test Plan: due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before each Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after each Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2035, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 005 Pulp Dryer C

Associated Items: CE 007 Multiple Cyclone w/Fly Ash Reinjection-Common w/Coal Boilers

CE 008 Fabric Filter - Medium Temperature i.e., 180 F<T<250 F

SV 005

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 45.0 lbs/hour using EPA Methods 201A and 202. If EPA Method 5 is used in place of Method 201A the sum of Methods 5 and 202 shall be considered to be the PM10 result. The Method 201A (or Method 5) result plus the organic condensable fraction of the Method 202 result shall not exceed the Total Particulate Matter limit for this emission unit.	Title I Condition: 40 CFR Section 52.21(j) (BACT) and Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 17.40 lbs/hour using EPA Method 5 as amended by Minn. R. 7011.0725, subp. 2	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0610, subp. 1(A)(1)
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)
Fuels Allowed: natural gas and biogas (methane generated from the wastewater treatment system) only.	Minn. R. 7007.0800, subp. 2
MONITORING REQUIREMENTS	hdr
Process Throughput: less than or equal to 7.30 tons/hour using 8-hour Block Average (pressed pulp feed rate on a bone dry basis). This limit will be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the multiclone and the baghouse once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 2 inches of water column and less than or equal to 6 inches of water column across the multiclone	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Pressure Drop: greater than or equal to 3 inches of water column and less than or equal to 6 inches of water column across the baghouse	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 03/15/2001 to measure particulate matter less than 10 microns (PM10) emissions. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 03/15/2001 to measure total particulate matter. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 1
Performance Test Plan: due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before each Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after each Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2035, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 006 Pellet Cooler

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

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

SV 006

SV 007

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.25 lbs/hour for each stack (SV 006 and SV 007)	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across each baghouse once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column for each baghouse	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 60 months starting 11/19/1997 to measure PM10 emissions from both SV006 and SV007. The interval between performance tests shall not exceed 60 months. The next test is due on or before 11/19/2002.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 11/19/1997 to measure total particulate matter and opacity emissions. The interval between performance tests shall not exceed 60 months. The next test is due on or before 11/19/2002.	Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 1
Performance Test Plan: due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before each Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after each Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2035, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 012 A-Side Sugar Dryer

Associated Items: CE 015 Dynamic Separator (Wet)
SV 011

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 1.0 lbs/hour using EPA Methods 201A and 202. If EPA Method 5 is used in place of Method 201A the sum of Methods 5 and 202 shall be considered to be the PM10 result. The Method 201A (or Method 5) result plus the organic condensable fraction of the Method 202 result shall not exceed the Total Particulate Matter limit for this emission unit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Process Throughput: less than or equal to 27.5 tons/hour using 8-hour Block Average (sugar throughput). This limit will be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the liquid supply pressure and liquid flow rate once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Water flow rate: greater than or equal to 2 gallons/minute and less than or equal to 5 gallons/minute	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Water pressure: greater than or equal to 20 psi (gauge) and less than or equal to 60 psi (gauge)	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 03/15/2001 to measure particulate matter less than 10 microns (PM10) emissions. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 36 months starting 03/15/2001 to measure total particulate matter. The interval between performance tests shall not exceed 36 months. The next test is due on or before 03/15/2004.	Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 1
Performance Test Plan: due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before each Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after each Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2035, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 013 A-Side Sugar Cooler

Associated Items: CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 012

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.11 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the baghouse once each operating day. If the pressure drop is found to be outside the range in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column across the multiclone	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 014 B-Side Sugar Dryer

Associated Items: CE 017 Dynamic Separator (Wet)
SV 013

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 1.20 lbs/hour using EPA Methods 201A and 202. If EPA Method 5 is used in place of Method 201A the sum of Methods 5 and 202 shall be considered to be the PM10 result. The Method 201A (or Method 5) result plus the organic condensable fraction of the Method 202 result shall not exceed the Total Particulate Matter limit for this emission unit.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Process Throughput: less than or equal to 48.1 tons/hour using 8-hour Block Average (sugar throughput). This limit will be amended as specified in Minn. R. 7017.2025 upon completion of each subsequent performance test.	Minn. R. 7017.2025, subp. 3
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the liquid supply pressure and liquid flow rate once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Water flow rate: greater than or equal to 2 gallons/minute and less than or equal to 8 gallons/minute	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Water pressure: greater than or equal to 20 psi (gauge) and less than or equal to 60 psi (gauge)	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
TESTING REQUIREMENTS	hdr
Performance Test: due before end of each 36 months starting 11/15/2000 to measure particulate matter less than 10 microns (PM10) emissions. The interval between performance tests shall not exceed 36 months. The next test is due on or before 11/15/2003.	Title I Condition: testing of emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7017.2020, subp. 1
Performance Test: due before end of each 60 months starting 11/15/2000 to measure total particulate matter. The interval between performance tests shall not exceed 60 months. The next test is due on or before 11/15/2005.	Minn. R. 7017.2020, subp. 1
Performance Test Notification (written): due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 1
Performance Test Plan: due 30 days before each Performance Test	Minn. R. 7017.2030, subp. 2 and 3
Performance Test Pre-Test Meeting: due 7 days before each Performance Test	Minn. R. 7017.2030, subp. 4
Performance Test Report: due 45 days after each Performance Test	Minn. R. 7017.2035, subp. 1
Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2035, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 015 B-Side Sugar Cooler

Associated Items: CE 018 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 014

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 0.59 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the pressure drop across the baghouse once each operating day. If the pressure drop is found to be outside the range in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 8 inches of water column across the multiclone	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 016 B-Side Dust Control System

Associated Items: CE 019 Dynamic Separator (Wet)

SV 015

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 1.14 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Monitoring of Pollution Control Equipment: the Permittee shall monitor and record the liquid supply pressure and liquid flow rate once each operating day. If any of the monitored parameters are found to be outside the ranges in the permit, take corrective action (as outlined in the operation and maintenance plan for the facility) within 24-hours of discovery to restore the parameter(s) to the proper range. Make a record of all corrective actions taken.	Title I Condition: control equipment requirement for emissions subject to a limit based on 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4; Minn. R. 7007.0800, subp. 5; Minn. R. 7007.0800, subp. 15
Water flow rate: greater than or equal to 1 gallons/minute and less than or equal to 3 gallons/minute	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4
Water pressure: greater than or equal to 20 psi (gauge) and less than or equal to 60 psi (gauge)	Minn. R. 7007.0800, subp.2; Minn. R. 7007.0800, subp.4

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 017 Boiler No. 3 (Ion Exclusion)

Associated Items: SV 016

What to do	Why to do it
EMISSION LIMITS	hdr
Nitrogen Oxides: less than or equal to 0.075 lbs/million Btu heat input using 1-Hour Average . This limit does not apply during startup or shutdown (as defined under EU017 of Table A of this permit) of EU017.	Title I Condition: 40 CFR Section 52.21(j)(3) BACT
Nitrogen Oxides: less than or equal to 0.1 lbs/million Btu heat input using 30-day Rolling Average . This limit applies at all times.	40 CFR Section 60.44b(a)(1); Minn. R. 7011.0565
Fuel Use: restricted to natural gas only	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
MONITORING REQUIREMENTS	hdr
PEMS Monitoring Plan for Nitrogen Oxides Emissions. The PEMS Monitoring Plan shall include the required items identified in 60.49b(c)(1), (2), and (3). If at any time the Permittee discovers that the approved PEMS Monitoring Plan no longer provides valid emissions data, the Permittee shall make corrections and revise the PEMS Monitoring Plan within 30 days of discovery.	40 CFR Section 60.49b(c); Minn. R. 7011.0565; Minn. R. 7007.0800, subp. 2
Startup Period: Defined as the initial 120 minutes of operation of EU017 after any time during which operation of EU017 ceased for more than 60 consecutive minutes. Shutdown Period: Defined as the final 60 minutes of operation of EU017 immediately preceding the time that fuel flow is shut off to EU017. Operation of EU017: Defined as whenever there is any fuel flow to EU017.	Minn. R. 7007.0800, subp. 2
PEMS Relative Accuracy Test Audit (RATA): due before end of each 24 months following PEMS Certification Test. Each RATA shall be conducted at an interval not to exceed 24 months. PEMS Certification was completed 3/5/1998.	Minn. R. 7007.0800, subp. 2
PEMS Monitoring Data: The owner or operator shall obtain a minimum of one data point in each 15-minute period while EU017 is operating. The owner or operator shall calculate hourly averages from a minimum of four equally spaced data points in each 60 minute period. If EU017 is operated for less than 60-minutes, the hourly average shall be calculated from at least one data point in a 15-minute period.	Minn. R. 7007.0800, subp. 2
Continuous Operation: Except for system breakdowns, repairs, and calibration checks, the PEMS shall be in continuous operation.	Title I Condition: monitoring of emissions subject to a limit based on 40 CFR Section 52.21(k); 40 CFR Section 60.48b(g)(2); Minn. R. 7007.0800, subp.2
RECORDKEEPING	hdr
Recordkeeping: The owner or operator must retain records of all PEMS 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 and include predicted NOx emission rates and the monitored operating conditions, including steam generating unit load, identified in the PEMS Monitoring Plan.	40 CFR Sections 60.7(f) and 60.49b(c)(3); Minn. R. 7011.0565; Minn. R. 7007.0800, subp. 5
Records of Startup, Shutdown, or Malfunction: Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.	40 CFR Section 60.7(b)

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 018 Waste Water Ground Flare**Associated Items: SV 017**

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0110
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to meet the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: EU 022 Conveying Dust System

Associated Items: CE 023 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
SV 021

What to do	Why to do it
EMISSION LIMITS	hdr
Particulate Matter < 10 micron: less than or equal to 2.57 lbs/hour	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011.0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING REQUIREMENTS	hdr
Operation and Maintenance of Fabric Filter: The permittee shall operate and maintain the fabric filter according to the operation and maintenance plan for the facility and the applicable control equipment manufacturer's specifications contained therein.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k)
Visible Emissions Monitoring: the Permittee shall perform a visible emission check on SV 021 once each day while EU 022 is in operation (during daylight hours). A visible emission check shall consist of viewing the exhaust gas exiting the stack and recording whether visible emissions are present or not.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 4
Visible Emissions Corrective Actions: if visible emissions (VEs) are observed, determine the cause and take corrective actions within 24 hours of discovery to eliminate VEs.	Title I Condition: to meet increment and NAAQS standards under 40 CFR Section 52.21(k); Minn. R. 7007.0800, subp. 2
Visible Emissions Recordkeeping: record the time and date of each VE inspection, and whether or not any VEs were observed. If VEs were observed, also record a brief description of the type of corrective actions taken, and the time and date the actions were taken.	Minn. R. 7007.0800, subp. 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

Subject Item: FS 030 Vehicle Traffic

What to do	Why to do it
All trucks delivering beets shall drive on paved roads except that beet delivery trucks may drive on unpaved areas around the paved beet pad storage areas to the extent necessary for unloading to occur.	Title I Condition: 40 CFR 52.21(k); Minn. R. 7007.3000
<p>Dust Control for Paved Roads:</p> <p>(1) The permittee shall water flush and vacuum sweep the paved roads once at the beginning of the dust control season (about April 15) during non-freezing weather, and at the beginning of the beet slicing campaign (about September 1), and as described below.</p> <p>(2) During the part of the beet slicing campaign which also falls during non-freezing weather of the dust control season (about April 15 to May 15, and September 1 to November 1), the permittee shall water flush and vacuum sweep the paved roads at least one time per day.</p> <p>(3) During the beet delivery period between September 1 and October 15 the permittee shall water flush and vacuum sweep the paved beet pad storage areas at least four times per day.</p> <p>(4) The permittee shall water flush and vacuum sweep the paved portion of the route traveled by limerock delivery trucks at least twice per day.</p>	Title I Condition: 40 CFR 52.21(k); Minn. R. 7007.3000
<p>During periods of the dust control season that do not fall in the beet slicing campaign (about May 15 through September 1), the permittee shall vacuum sweep the paved roads one time each week.</p> <p>The permittee shall maintain records indicating the date of the sweeping, operator's initials, start and stop times, and weather conditions.</p>	Title I Condition, continued from above
<p>Dust Control For Paved Parking Areas: parking areas shall be cleaned with pressurized water at the beginning of the dust control season during non-freezing weather (about April 15). The paved parking areas shall be cleaned with pressurized water once each month after the initial cleaning, during non-freezing weather, throughout the dust control season (about April 15 to November 15). The permittee shall maintain records indicating the date of cleaning, crew supervisor initials, start and stop times, and weather conditions.</p>	Title I Condition: 40 CFR 52.21(k); Minn. R. 7007.3000
<p>Dust Control For Unpaved Roads:</p> <p>(1) During normal campaign operations the permittee shall water flush all unpaved road areas at least once per day except for road areas that are not used on a daily basis, which shall be subject to the schedule in Item (3).</p> <p>(2) During the beet delivery period between September 1 and October 15 the permittee shall water flush the unpaved areas surrounding the paved beet pad storage areas at least four times per day.</p> <p>(3) In general, unpaved roads shall be inspected regularly, and whenever dusty conditions occur during non-freezing conditions, the roads will be watered with a truck equipped with a water tank and spray nozzles. The Permittee will provide a map as part of its Fugitive Control Plan which will show the unpaved roads subject to dust control measures.</p>	Title I Condition: 40 CFR 52.21(k); Minn. R. 7007.3000

TABLE B: SUBMITTALS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks
Permit Number: 11900002 - 002

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.

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 any application for a permit or permit amendment to:

Permit Technical Advisor
Permit Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

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.

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

Supervisor
Compliance Determination Unit
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

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

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: ONE TIME SUBMITTALS OR NOTIFICATIONS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Fugitive Control Plan	due 60 days after Permit Issuance for review and approval by Commissioner. This plan shall be an update to the plan required by Air Emission Permit No. 11900002-001 in order to include the additional paved roads dust control required at FS030. The plan shall identify all fugitive emission sources, primary and contingent control measures, and records kept. The Permittee shall follow the actions and record keeping specified in the control plan. The plan may be amended by the Permittee with the Commissioner's approval.	Total Facility
Relative Accuracy Test Audit (RATA) Notification	due 30 days before CEMS Relative Accuracy Test Audit (RATA)	EU001, EU002
Relative Accuracy Test Audit (RATA) Notification	due 30 days before PEMS Relative Accuracy Test Audit (RATA) .	EU017

TABLE B: RECURRENT SUBMITTALS

09/28/01

Facility Name: American Crystal Sugar - E Grand Forks

Permit Number: 11900002 - 002

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 following Permit Issuance (Submit Deviations Reporting Form DRF-1 as amended). The EER must contain all of the information requested in 40 CFR60.7(c). The EER shall indicate all periods of exceedances of the limit.	EU017
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Permit Issuance . The EER must contain all of the information requested in 40 CFR 60.7(c). 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.	EU001, EU002
COMS Calibration Error Audit Results Summary	due 30 days after end of each calendar half-year following COMS Calibration Error Audit .	EU001, EU002
Cylinder Gas Audit (CGA) Results Summary	due 30 days after end of each calendar half-year following Cylinder Gas Audit.	EU001
Cylinder Gas Audit (CGA) Results Summary	due 30 days after end of each calendar half-year following Cylinder Gas Audit.	EU002
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance . The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31.	Total Facility
Compliance Certification	due 30 days after end of each calendar year following Permit Issuance. To be submitted to the Commissioner on a form approved by the Commissioner. The report covers all deviations experienced during the calendar year. A copy of this report shall also be submitted to the U.S. EPA Regional Office.	Total Facility
Emissions Inventory Report	due 91 days after end of each calendar year following Permit Issuance (April 1). To be submitted on a form approved by the Commissioner.	Total Facility
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar year following CEMS Relative Accuracy Test Audit (RATA).	EU001
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each calendar year following CEMS Relative Accuracy Test Audit (RATA).	EU002
Relative Accuracy Test Audit (RATA) Results Summary	due 30 days after end of each 24 months following PEMS Relative Accuracy Test Audit (RATA).	EU017

APPENDIX MATERIAL**Facility Name: American Crystal Sugar – East Grand Forks****Permit Number: 11900002-002**

*Note: This data updates the data used in Permit Number 11900002-001. The original data has been amended to reflect the PM₁₀ modeling submittal of August 14, 2001, associated with Air Emission Permit 11900002-002. The amended parameters are shown in **bold** text in Tables 1 and 2:*

TABLE 1 - Modeled Emission Rates (lb/hr)

Stack #	PM₁₀	SO₂	NO_x	CO
001	25.0	427.2	227.9	182.5
002	25.0	427.2	227.9	182.5
003	45.0	0.03	6.57	NA*
004	45.0	0.03	7.44	NA*
005	45.0	0.03	6.57	NA*
006	0.25	-	-	-
007	0.25	-	-	-
008	1.89	-	-	-
009	4.36	27.0**	34.1	21.0
010	4.82	-	-	-
011	1.00	-	-	-
012	0.11	-	-	-
013	1.20	-	-	-

014	0.59	-	-	-
015	1.14	-	-	-
016	1.00	0.12	15.0	16.0
017	0.16	0.01	1.61	0.86
019	0.86	-	-	-
020	0.86	-	-	-
021	2.57	-	-	-
022	0.86	-	-	-
023	0.86	-	-	-
024	0.86	-	-	-
ID 024***	0.25	-	-	-
ID 025***	0.25	-	-	-
SV031	1.71	-	-	-

*CO modeling was conducted as a part of a backwards PSD application (dated July 29, 1994) submitted for the installation of the C Pulp Dryer. The pulp dryers were modeled burning coal so those limits are no longer applicable since they have since been switched to natural gas. See the attachments to the technical support document for Permit Numer 11900002-001 for an estimate of the current CO PTE of the pulp dryers.

**This is the emission rate for the lime kilns during startup when none of the flue gas goes to the carbonation process and the throughput is 0.9 ton of coke per hour for both kilns.

***ID 024 and 025 were used in the modeling to represent stacks SV 025-029. SV 025-029 each have an emission rate of 0.10 lb/hr which were represented by ID 024 and 024 (i.e., $5 * 0.1 = 0.5 = 0.25 + 0.25$)

Note: Fugitive sources were also included in the PM₁₀ modeling. The modeling assumed increased control activities on both paved and unpaved roads. These are detailed in the appendix material of the technical support document for Permit Number 11900002-002 and are reflected in the fugitive dust requirements at FS030.

TABLE 2 - Modeled Stack Parameters

Stack #	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)	Orientation
001	171	9.0	166,000	408	Vertical
002	171	9.0	144,000	394	Vertical
003	150	4.0	67,600	230	Vertical
004	150	5.0	67,100	245	Vertical
005	150	4.0	67,600	230	Vertical
006	54.5	2.0	15,000	95	Vertical
007	54.5	2.0	15,000	95	Vertical
008	27.5	2.0	10,900	70	Vertical
009	110	1.7	4,200	109	Vertical
010	110	2.7	6,200	120	Vertical
011	110	1.6	3,200	95	Vertical
012	110	1.6	2,700	75	Vertical
013	110	2.5	14,000	88	Vertical
014	110	2.5	15,600	184	Vertical
015	85.1	1.2	2,100	153	Vertical

016	140	5.0	65,600	350	Vertical
017	18.0	9.5	18,000	1340	Vertical
019	37.3	0.50	1,000	68	Vertical
020	36.8	0.50	1,000	68	Vertical
021	35.3	1.7	5,900	68	Vertical
022	39.6	0.46	1,000	68	Vertical
023	8.0	1.3	1,000	68	Vertical
024	8.8	1.3	1,000	68	Vertical
ID 024*	4.0	2.0	*0	70	Horizontal
ID 025*	4.0	2.0	*0	70	Horizontal
031	45.9	2.04	10,000	70	Vertical

* the combined airflow for the 5 units represented by ID 024 and 025 is 13,200 acfm

TECHNICAL SUPPORT DOCUMENT
For
AIR EMISSION PERMIT NO. 11900002-002

This technical support document is for all the interested parties of the permit and to meet the requirements that have been set forth by the federal regulations and Minn. R. (40 CFR, Section 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 preliminary determination to issue the draft permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Address	Stationary Source/Address (SIC Code: 2063)
American Crystal Sugar Company Corporate Headquarters 101 North Third Street Moorhead, Minnesota 56560	Highway US 2 E. East Grand Forks, Minnesota 56721 Polk County Contact: Mr. Joel Smith, (218) 236-4347

1.2. Description Of The Facility

American Crystal Sugar Company (ACS) owns and operates a sugar beet processing plant at Highway US 2 E., East Grand Forks, Polk County, Minnesota. In addition to this stationary source, the Company owns beet processing plants in both Moorhead and Crookston, Minnesota and also has a research center in Moorhead, Minnesota. The East Grand Forks plant consists of two coal-fired (sub-bituminous) boilers and one natural gas boiler which all produce process steam; three natural gas-fired pulp dryers; one pulp pellet cooler; pulp pellet handling, storage and loading equipment; two lime kilns; two lime slakers; two sugar dryers; two sugar coolers; ash removal systems and dry sugar storage, handling, and sacking equipment.

The general sugar making process can be divided into 4 steps: extraction, purification, evaporation and crystallization. In the extraction process beets are received, cleaned, sliced and then the sugar-containing liquid, called raw juice, is extracted by diffusion. The leftover material, called pulp, is dried and pressed to be sold as animal feed. During purification, milk of lime and carbon dioxide gas are all added to the raw juice in a series of carbonation tanks and non-sucrose impurities are removed by precipitation. The lime and carbon dioxide are produced in lime kilns and the lime is converted to milk of lime in a lime slaker. The evaporation process concentrates the juice in a series of evaporators. The concentrated liquid, now called thick juice, is crystallized, dried, cooled, screened, and stored or packaged for shipment. During the crystallization process, a liquid is centrifuged from the sugar crystals called molasses.

Sugar can be extracted from this liquid by repeated boilings and ion exchange. The remaining molasses can be used in the production of livestock feed.

The three boilers, pulp dryers, and lime kilns are sources of combustion emissions. Particulate matter (PM and PM₁₀) is emitted from the other sources at the facility due to product handling. Electrostatic precipitators (ESPs) control PM and PM₁₀ emissions from the two coal-fired boilers. Other pollution control equipment at the facility consists of: a multiclone with a hopper-aspirated fabric filter system for each pulp dryer, baghouses for the pellet cooler, fabric filters for sugar storage and conveying sources, baghouses for the lime kilns, and rotoclones for the sugar dryers and baghouses for the sugar coolers. Coal, coke and lime rock are received by rail and stored in uncovered storage piles. These can all be source of fugitive particulate emissions along with paved and unpaved roads at the facility

The entire facility operates only part of the year during a period of time referred to as the campaign. Harvest can begin as early as August and usually ends in November. During harvest, sugar beets are stockpiled at the factory and at remote stockpiling sites in the outlying areas. The goal is to have the beets stored in a frozen condition in the piles until they can be processed at the factory. The facility's beet slicing campaign will generally run from September until April or May, twenty-four hours per day. The East Grand Forks plant employs about 425 people at the height of the campaign.

1.3 Description of the Activities Allowed By This Permit Action

This modification authorizes an increase in the PM₁₀ emission limits for Boilers 1 and 2, Pulp Dryers A, B and C, the A-Side Sugar Dryer and the B-Side Sugar Dryer. The existing limits were established after the Permittee conducted air dispersion modeling for PM₁₀ in 1996. The emission factors used in the model were based on total particulate matter test data and therefore did not include all of the condensable particulate matter (CPM) that the MPCA has required for compliance demonstration (ref: Minn. R. 7017.2060, subp. 4; promulgated December 1993) since the early 1990's.

Performance testing conducted between March 2000 and March 2001 indicated that the above reference emission units could not consistently comply with the model-based PM₁₀ limits when CPM (as determined by U.S. EPA Method 202) was included in the results, particularly when the units were operated at high loads.

The Permittee has proposed new PM₁₀ limits that take into account the presence of CPM emissions from the affected units and has re-modeled the facility for PM₁₀ including the increased limits. The modeling indicates attainment with ambient air standards for PM₁₀. This permit corrects the cited limitation basis for Pulp Dryer C, which is subject to Best Available Control Technology (BACT) for PM and PM₁₀. The Permittee submitted a BACT analysis in 1994 as required by air emission permit 29B-92-OT-1. This analysis

concluded that control of CO, SO₂, NO_x and VOC was economically and/or technically unfeasible and that the existing controls for particulate matter were BACT.

The MPCA has determined that the emission increase for PM₁₀ on Pulp Dryer C does not conflict with BACT requirements as the increase parallels the inclusion of CPM in the modeling. The existing limit is more stringent than necessary due to the omission of CPM in the Permittee's 1996 modeling. In addition, the PM standard (which is established in state rule and is therefore not amendable through a permit action) places a restriction on the increase in PM₁₀ emissions, as recent testing has shown the Pulp Dryers to be close to the PM limits. A significant increase in filterable (non-CPM) PM₁₀ would likely cause an exceedence of the PM standard. This is consistent with the intent of the modification, which is to account for CPM emissions and in particular the aqueous fraction from Method 202, which is not included in PM testing.

It should also be noted that Pulp Dryer C itself has not been determined to be out of compliance with the PM₁₀ limit. Therefore the amendment is not being used as a means of resolving a noncompliance issue with a BACT limit. The need for amending this limit is based on recent test data from this unit and on test failures associated with Pulp Dryers A and B.

Throughout the permit, changes have been made to the test frequencies based on the most recent test data for individual units. These changes have been made consistent with MPCA internal guidance, a copy of which is available on request.

The permit modification includes installation of a new pulp pellet loadout system, as submitted in the January 2001 minor amendment permit application. The MPCA verified that the amendment is minor and does not trigger NSR review. The new system speeds up the loading process but does not increase overall operating capacity, which is still limited by pulp pellet production and storage capacity. There is an increase in potential hourly emissions but no increase in annual PTE because the worst case scenario is for the old system to operate alone. (See emission calculations attached, within January 26, 2001, letter from Joel Smith (ACS) to Trent Wickman (MPCA). Both the existing and new systems are grouped together as GP005 in the permit. The new system (EU031) will be tested once to verify the PM₁₀ emission factor and compare against the emission limit. EU031 was included in the PM₁₀ modeling with the major amendment application.

The PM₁₀ limit for the conveyor dust system (EU022) has been halved, to 2.57 lb/hr, based on ACS's re-evaluation of the controlled particulate concentration and conversion of this number to a pounds per hour basis.

At the request of ACS, the water flow rate range for the B-side sugar dryer (EU014) has been adjust from 3-8 to 2-8 gallons per minute, based on operational experience.

1.4. Description of previous permits issued to this facility

Permit Number and Issuance Date	Action Authorized
29B-75-I-2 January 15, 1975	Installation of boiler #1
29B-76-I-4 March 16, 1976	Installation of boiler #2
29B-77-O-1 May 3, 1977	Operating permit for the boilers
29B-92-OT-1 December 15, 1992	Permit to add boiler #3 and molasses processing. Permit was major for Oxides of Nitrogen (NO _x) and included a NO _x Best Available Control Technology (BACT) limit on boiler #3. Synthetic minor limits were established for the other criteria pollutants.
Amendment 1 to 29B-92-OT-1 February 14, 1994	Permit for performance test extensions, clarification on CEM requirements, approval to burn a limited amount of used oil
11900002-011 August 15, 1995	Permit to switch the 3 pulp dryers from coal to natural gas
11900002-012 June 23, 1997	Permit to modify previous synthetic minor limits and to increase throughput. New diffuser, cossette mixer, cutters, conveyors, heat exchangers and a new pulp press. Lime presses were installed to eliminate the lime pond. Major for all pollutants but Volatile Organic Compounds (VOC) and Lead (Pb). It was essentially a new total facility permit.
11900002-013 December 30, 1997	Permit to extend performance testing deadlines from AEP 11900002-012
11900002-014 April 14, 1999	Permit to remove non-Title I operational limits on boilers 1 and 2
11900002-001 June 2, 2000	Title V permit
11900002-002	Major modification to increase PM ₁₀ limits at Boilers 1 & 2, Pulp Dryers A, B & C, and A-Side Sugar Dryer. Incorporates minor modification to install new pulp pellet loadout system.

1.5. Facility Emissions:

Table 1. Total Facility Potential to Emit Summary for Point Sources:

SV#	Emission Unit Description	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x tpy	CO tpy	VOC tpy	Pb tpy	All HAPs tpy
1, 2	Boiler #1 & #2 (Coal)	124.4	219.0	3742	1996	1599	8.2	1.6	13.5
16	Boiler #3 (NG)	4.4	4.4	0.5	65.7	70.1	1.2	0	0.5
3,4,5	Pulp Dryers A, B, C	228.6	591.3	0.4	90.1	96.4	1.6	0	1
9	Lime Kilns East, West	19.1	19.1	118.3	149.2	98.1	0.9	0	1
6,7,8,31	Pellet Cooler/Loadout	10.5	10.5						
10	Lime Slaker	21.1	21.1						
11-15	Sugar Dryers/Coolers	14.2	17.7						
19-29	Sugar Handling	43.5	32.2						
17	WWTP Flare	0.2	0.2	<0.1	1.6	1.7	<0.1	0	

	PM tpy	PM ₁₀ tpy	SO ₂ tpy	NO _x tpy	CO tpy	VOC tpy	Pb tpy	All HAPs tpy
Total Facility Potential Emissions (from point sources only)	466	916.0	3862	2303	1865	11.9	1.6	16

Table 2. Emissions Associated With the Modification

Pollutant	Potential to Emit from the modification (lb/hr)	Potential to Emit from the modification (TPY)	Emission Increases Authorized with this Permit Action ⁽¹⁾	Emission Decreases Authorized with this Permit Action ⁽¹⁾	Other contemporaneous emission increases/decreases ⁽²⁾ (TPY)	Net Emission Change (TPY)	NSR/ 112(g) Threshold Level (TPY)	NSR/ MACT Review Required (Yes or No)
PM	1.7	0.0 ⁽³⁾	0.0	n/a	n/a	0.0	No	No
PM ₁₀	104.3	450.0 ^(3,4)	450.0	n/a	n/a	450.0	No	No

- (1) Emission increases allowed with the permit action include additions and subtractions associated with netting. If netting is done, this will be different from the potential to emit from the modification.
- (2) Other emission changes during the contemporaneous period as defined by 40 CFR 52.21, 40 CFR 52.24 or 40 CFR 51
- (3) Facility bottleneck restricts annual PTE increase for new pulp pellet loadout system
- (4) PM₁₀ emissions increase is the PTE as calculated from the new emission limits minus the PTE calculated from the existing emission limits, assuming 8760 hours of operation per year, for the six affected emission units.

Permit Action Number: 11900002-002

Date: 12/12/2003

Page: 5 of 7

Table 3. Permit Action Classification

Classification (put x in appropriate box)	Major	*Synthetic Minor	*Minor
PSD (this modification)	PM ₁₀		PM
NAAR (list pollutant) N/A			
Part 70 Permit Program (this modification)	PM ₁₀		PM

* Refers to potential emissions that are less than those specified as major by 40 CFR 52.21, 40 CFR pt. 51 Appendix S, and 40 CFR pt. 70.

2. Regulatory and/or Statutory Basis

Regulatory Overview of Units Affected by the Modification

Table 4. Regulatory Overview

*EU, GP, or SV #	Applicable Regulations	Comments
GP001, GP002, EU001–005, EU012, EU014	Minn. R. 7017.2025, subp. 3; Minn. R. 7017.2020, subp. 1	Permit incorporates operational limits established after recent performance tests. Limits will change if/when testing is done at alternate conditions. Test frequencies established per MPCA internal guidance.
EU005	40 CFR Section 52.21(j)	PM,PM ₁₀ BACT limit citations added for Pulp Dryer C
GP005	Minn. R. 7017.2020, subp. 1	PM ₁₀ test required for compliance and to verify emission factor used in modeling. Other requirements on EU031 mirror those for EU007.
FS030	40 CFR Section 52.21(m)	Paved and unpaved road watering and sweeping requirements based on modeling assumptions
FC	40 CFR Section 52.21(m)	This facility is a significant consumer of increment for PM ₁₀ and the modeling showed results very close to the 24-hour standard. The standard modeling parameter changes language has been amended to include remodeling for any changes that increase PM ₁₀ emissions, including modifications that would otherwise be minor or insignificant.

3. Technical Information

The PM₁₀ modeling included assumptions for improved control measures on both paved and unpaved roads. Certain operational periods and specific road areas were highlighted for special attention and these are reflected in the permit at FS030. Given the complexity of the new watering and sweeping requirements, the fugitive dust control plan will become an increasingly important supplement to the permit itself. ACS will be required to submit a map to help detail the control strategy and to submit an updated control plan.

The requirement to re-model for PM₁₀ following even minor or insignificant emissions increases is based on increment consumption and proximity to the 24-hour ambient standard. However, it should be noted that conservative estimates were used, particularly in the increment modeling analysis when comparing to a 1985 baseline, and that the modeling utilized an older modeling program, which tends to be more conservative. Therefore it may be possible for ACS to repeat the increment modeling analysis in the future with more accurate past actual emission data and updated modeling protocols to show a better margin of attainment. The summary pages from the HDR Engineering, Inc., modeling submittal is attached to this document.

The following information is appended to this document:

- Modeling summary
- Emission calculations associated with the minor permit modification (letter from Joel Smith to Trent Wickman, dated January 26, 2001).

4. Conclusion

Based on the information provided by American Crystal Sugar, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 11900002-002 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Stuart Arkley, Cary Hernandez, Dennis Becker
Peer Review: Hongming Jiang

Attachments: As specified in section 3