

**AIR EMISSION PERMIT NO. 03900028- 002  
IS ISSUED TO**

Al-Corn Clean Fuel  
West Highway 14  
Claremont, Dodge County, Minnesota 55924

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

Permit Type	Application Date
Total Facility Operating Permit	11/17/94
Major Amendment	12/21/95
Major Amendment	05/08/97

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 and with all general conditions listed in Minn. R. 7007.0800, subp. 16, which are incorporated by reference. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

**Permit Type:** State ; Syn Min PSD/NSR

**Issue Date:**

**Expiration:** Permit does not expire  
All Title I Conditions do not expire.

---

Michael J. Sandusky  
Acting Division Manager  
Air Quality Division

for Peder A. Larson  
Commissioner  
Minnesota Pollution Control Agency

TLV:yma

## **TABLE OF CONTENTS**

**Notice to the Permittee**

**Permit Shield**

**Facility Description**

**Table A: Limits and Other Requirements**

**Table B: Submittals**

**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 (612)296-6300

Outside Metro Area 1-800-657-3864

TTY (612)282-5332

The rule governing these programs are contained in Minn. R. 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. Any requirements which have been determined not to apply are listed in Table A of this permit.

The permit shield, however does not apply to: Minn. R. ch. 7030 (Noise Pollution Control).

**FACILITY DESCRIPTION:**

Al-Corn Clean Fuel is a fuel alcohol production plant located on West Highway 14, approximately one half mile west of Claremont, Dodge County, Minnesota. The plant is authorized to produce 14.5 million gallons of 200 proof ethanol to which a denaturant (unleaded gasoline) is added prior to shipment. A by-product of the ethanol process is Dry Distillers Grain with Solubles (DDGS) which is used as livestock feed.

This permit authorizes installation of a new beer well, and conversion of the existing beer well into a fourth fermentation tank.

The facility has accepted limits on the amounts of total particulate matter, particulate matter smaller than ten microns, and volatile organic compounds that can be emitted to the atmosphere, so that it is classified as a non-major source under both the Part 70 program (40 CFR § 70.2) and the federal Prevention of Significant Deterioration program (40 CFR § 52.21).

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel  
 Permit Number: 03900028 - 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
Process Throughput: less than or equal to 14500000 gallons/year using 12-month Rolling Sum of 200-proof ethanol (Production Limit).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification 40 CFR Section 70.2 and Minn. R. 7007.0200
Record keeping: By the 15th day of every month, record the gallons of ethanol produced during the previous month, and calculate and record the gallons of ethanol produced during the previous 12-month period.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Shutdowns: Notify the Commissioner at least 24 hours in advance of shutdown of any process or control equipment if the shutdown would cause an increase in the emission of air contaminants. At the time of notification, notify the Commissioner of the cause of the shutdown and the estimated duration. Notify the Commissioner again when the shutdown is over.	Minn. R. 7019.1000, subp. 1
Breakdowns: Notify the Commissioner immediately of a breakdown of more than one hour duration of any process or control equipment if the breakdown causes an increase in the emission of air contaminants. At the time of notification or as soon thereafter as possible, the Permittee shall also notify the Commissioner of the cause of the breakdown and the estimated duration. Notify the Commissioner again when the breakdown is over.	Minn. R. 7019.1000, subp. 2
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.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, such as for system breakdowns, repairs, calibration checks, and zero and span adjustments (as applicable). Monitoring records should reflect any such periods of process shutdown.	Minn. R. 7007.0800, subp. 4(D)
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Oral Notification of Deviations Endangering Human Health or the Environment: Within 24 hours of discovery, orally notify the Commissioner of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7007.0800, subp. 6(A)
Discovery of Deviations Endangering Human Health or the Environment Report (written): due two working days after discovery of deviation. Submit a written description of any deviation endangering human health or the environment to the Commissioner. Include the following information in this written description: cause of the deviation; exact dates of the period of the deviation; if the deviation has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7007.0800, subp. 6(A)
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. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Emission Fees: due 60 days after receipt of an MPCA bill	Minn. R. 7002.0005 through Minn. R. 7002.0095
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. Do not cause or permit a building or its appurtenances or an open area to be constructed, used, repaired, or demolished without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne.	Minn. R. 7011.0150

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

Inspections: Upon presentation of credentials and other documents as may be required by law, allow the Agency, or its representative, to enter the Permittee's premises, to have access to and copy any records required by this permit, to inspect at reasonable times (which include any time the source is operating) any facilities, equipment, practices or operations, and to sample or monitor any substances or parameters at any location.	Minn. R. 7007.0800, subp. 9(A)
Record keeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007.0800, subp. 5(B)
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original 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)
Extension Requests: The permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: SV 001**

- Associated Items:**
- EU 001 Corn Dump Pit
  - EU 002 Elevator
  - EU 003 Scalper
  - EU 004 Corn Bin
  - EU 005 Corn Bin
  - EU 006 Corn Bin
  - EU 007 Corn Bin
  - EU 014 DDGS Dump Pit
  - EU 015 DDGS Elevator
  - EU 016 DDGS Loadout (truck)
  - EU 033 DDGS Loadout (railcar)

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.02 grains/dry standard cubic foot (met by equipment capacity and production limitations)	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 [Also meets the requirements of Minn. R. 7011.1005, subp. 3(D)]
Particulate Matter < 10 micron: less than or equal to 0.02 grains/dry standard cubic foot (met by equipment capacity and production limitations)	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: SV 002****Associated Items:** EU 008 Hammermill

<b>What to do</b>	<b>Why to do it</b>
Total Particulate Matter: less than or equal to 0.02 grains/dry standard cubic foot (met by equipment capacity and production limitations)	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 [Also meets the requirements of Minn. R. 7011.1005, subp. 3(D)]
Particulate Matter < 10 micron: less than or equal to 0.02 grains/dry standard cubic foot (met by equipment capacity and production limitations)	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item:** SV 003

**Associated Items:** EU 009 Fermenter

EU 010 Fermenter

EU 011 Fermenter

EU 012 Fermenter

EU 032 Beer Well□□

GP 001 Non-combustion, non-fugitive VOC sources

<b>What to do</b>	<b>Why to do it</b>
Volatile Organic Compounds: less than or equal to 4.5 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due 180 days after Initial Startup of new beer well (EU032) to measure emissions of volatile organic compounds.	Title I Condition: Emissions testing to avoid major source classification under 40 CFR Section 52.21; emissions testing to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, Subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item:** SV 004

**Associated Items:** EU 013 Grain Dryer

GP 001 Non-combustion, non-fugitive VOC sources

What to do	Why to do it
Total Particulate Matter: less than or equal to 5.66 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 [Also meets the requirements of Minn. R. 7011.1005, subp. 3(D)]
Particulate Matter < 10 micron: less than or equal to 5.66 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Volatile Organic Compounds: less than or equal to 10.0 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due 180 days after Initial Startup of new beer well (EU032) to measure emissions of particulate matter < 10 microns.	Title I Condition: Emissions testing to avoid major source classification under 40 CFR Section 52.21; emissions testing to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup of the new beer well (EU032) to measure particulate matter emissions.	Title I Condition: Emissions testing to avoid major source classification under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup of new beer well (EU032) to measure emissions of volatile organic compounds.	Title I Condition: Emissions testing to avoid major source classification under 40 CFR Section 52.21; emissions testing to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, Subp. 1
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: SV 007**

- Associated Items:** EU 020 Slurry Tank  
 EU 021 Liquefaction Tank  
 EU 022 Liquefaction Tank  
 EU 023 Yeast Tank  
 EU 024 Beer Stripper  
 EU 025 Rectifier  
 EU 026 Side Stripper  
 EU 027 190 Proof Rundown Tank  
 EU 028 Molecular Sieve  
 EU 029 Evaporator  
 GP 001 Non-combustion, non-fugitive VOC sources

What to do	Why to do it
Volatile Organic Compounds: less than or equal to 1.46 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due 180 days after Initial Startup of new beer well (EU032) to measure emissions of volatile organic compounds.	Title I Condition: Emissions testing to avoid major source classification under 40 CFR Section 52.21; emissions testing to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7017.2020, Subp. 1
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: SV 008**

**Associated Items:** EU 018 Grain Cooler

What to do	Why to do it
Total Particulate Matter: less than or equal to 1.42 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21. [Also meets the requirements of Minn. R. 7011.1005, subp. 3(D)]
Particulate Matter < 10 micron: less than or equal to 1.42 lbs/hour	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Performance Test: due 180 days after Initial Startup of new beer well (EU032), to measure particulate matter emissions.	Title I Condition: Emissions testing to avoid major source classification under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Performance Test: due 180 days after Initial Startup of the new beer well (EU032), to measure emissions of particulate matter <10 micron.	Title I Condition: Emissions testing to avoid major source classification under 40 CFR Section 52.21; Minn. R. 7017.2020, subp. 1
Opacity: less than or equal to 10 percent opacity	Minn. R. 7011.1005, subp. 3(D)
Performance Test Pre-test Meeting: due 7 days before Performance Test	Minn. R. 7017.2030, subp. 4

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: Al-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item:** EU 013 Grain Dryer**Associated Items:** CE 004 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones  
SV 004

<b>What to do</b>	<b>Why to do it</b>
Fuel Burned: Natural gas and propane only	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item:** EU 017 Boiler**Associated Items:** SV 005

<b>What to do</b>	<b>Why to do it</b>
Fuel Burned: Limited to natural gas and propane only	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2
Recordkeeping: Record and maintain records of the amounts of each fuel combusted on a monthly basis for the previous calendar month. These records may consist of fuel meter readings or fuel bills/purchase receipts.	40 CFR Section 60.13(i) to comply with 40 CFR Section 60.48c(g) and (i); Minn. R. 7011.0570

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item:** EU 018 Grain Cooler

**Associated Items:** SV 008

What to do	Why to do it
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column or as determined once normal operation has begun.	Title I Condition: Equipment operating parameter to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14
Record pressure drop once each day of operation.	Title I Condition: Monitoring of equipment operating parameter to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: CE 001 Fabric Filter - Low Temperature, i.e., T<180 Degrees F**

- Associated Items:**
- EU 001 Corn Dump Pit
  - EU 002 Elevator
  - EU 003 Scalper
  - EU 004 Corn Bin
  - EU 005 Corn Bin
  - EU 006 Corn Bin
  - EU 007 Corn Bin
  - EU 014 DDGS Dump Pit
  - EU 015 DDGS Elevator
  - EU 016 DDGS Loadout (truck)
  - EU 033 DDGS Loadout (railcar)

What to do	Why to do it
Particulate Matter < 10 micron: greater than or equal to 99 percent collection efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Total Particulate Matter: greater than or equal to 99 percent collection efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Operation and Maintenance of Fabric Filter: The Permittee shall operate and maintain the fabric filter according to the control equipment manufacturer's specifications.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14
Visible Emissions: The Permittee shall check SV 001 (associated with CE 001) for any visible emissions during daylight hours, once each day of operation.	Minn. R. 7007.0800, subp. 4
Recordkeeping of Visible Emissions: The Permittee shall record the time and date of each visible emission inspection, and whether or not any visible emissions were observed.	Minn. R. 7007.0800, subp. 5
Recordkeeping of corrective actions: If visible emissions are observed, the Permittee shall follow the Operation and Maintenance plan for the fabric filter and take corrective actions as soon as possible to eliminate the visible emissions. The Permittee shall keep a record of the corrective actions taken.	Minn. R. 7007.0800, subp. 5

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: CE 002 Fabric Filter - Low Temperature, i.e., T<180 Degrees F****Associated Items: EU 008 Hammermill**

What to do	Why to do it
Particulate Matter < 10 micron: greater than or equal to 99 percent collection efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Total Particulate Matter: greater than or equal to 99 percent collection efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Operation and Maintenance of Fabric Filter: The Permittee shall operate and maintain the fabric filter according to the control equipment manufacturer's specifications.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14
Visible Emissions: The Permittee shall check SV 002 (associated with CE 002) for any visible emissions during daylight hours, once each day of operation.	Minn. R. 7007.0800, subp. 4
Recordkeeping of Visible Emissions: The Permittee shall record the time and date of each visible emission inspection, and whether or not any visible emissions were observed.	Minn. R. 7007.0800, subp. 5
Recordkeeping of corrective actions: If visible emissions are observed, the Permittee shall follow the Operation and Maintenance plan for the fabric filter and take corrective actions as soon as possible to eliminate the visible emissions. The Permittee shall keep a record of the corrective actions taken.	Minn. R. 7007.0800, subp. 5



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item:** CE 003 Packed-Gas Adsorption Column

**Associated Items:** EU 009 Fermenter

EU 010 Fermenter

EU 011 Fermenter

EU 012 Fermenter

EU 032 Beer Well□□

What to do	Why to do it
Volatile Organic Compounds: greater than or equal to 98 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Water flow rate: greater than or equal to 5 gallons/minute or as determined once normal operation has begun. (Inlet Water Flow Rate)	Title I Condition: Equipment operating parameter to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column or as determined once normal operation has begun.	Title I Condition: Equipment operating parameter to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14
Record the pressure drop and water flow rate once each day of operation.	Title I Condition: Monitoring of equipment operating parameters to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
If necessary, the Permittee shall apply for an amendment to update the pressure drop range or inlet water flow rate given for this control device once vendor data is available or after actual normal operating data has been obtained. If necessary, the Permittee shall apply for the amendment no later than 60 days after startup of the control device.	Minn. R. 7007.1400, subp. 1(C)
Calibrate the gauges annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and subp. 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: CE 004 Multiple Cyclone w/o Fly Ash Reinjection - Most Multiclones**

**Associated Items: EU 013 Grain Dryer**

What to do	Why to do it
Particulate Matter < 10 micron: greater than or equal to 99 percent collection efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Total Particulate Matter: greater than or equal to 99 percent collection efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column or as determined once normal operation has begun.	Title I Condition: Equipment operating parameter to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14
Record pressure drop once each day of operation.	Title I Condition: Monitoring of equipment operating parameter to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
If necessary, the Permittee shall apply for an amendment to update the pressure drop range given for this control device once vendor data is available or after actual normal operating data has been obtained. If necessary, the Permittee shall apply for the amendment no later than 60 days after startup of the control device.	Minn. R. 7007.1150
Calibrate the pressure gauge annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and subp. 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: CE 005 Packed-Gas Adsorption Column**

- Associated Items:** EU 020 Slurry Tank  
 EU 021 Liquefaction Tank  
 EU 022 Liquefaction Tank  
 EU 023 Yeast Tank  
 EU 024 Beer Stripper  
 EU 025 Rectifier  
 EU 026 Side Stripper  
 EU 027 190 Proof Rundown Tank  
 EU 028 Molecular Sieve  
 EU 029 Evaporator

What to do	Why to do it
Volatile Organic Compounds: greater than or equal to 98 percent control efficiency	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Water flow rate: greater than or equal to 5 gallons/minute or as determined once normal operation has begun. (Inlet Water Flow Rate)	Title I Condition: Equipment operating parameter to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 6 inches of water column or as determined once normal operation has begun.	Title I Condition: Equipment operating parameter to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200; Minn. R. 7007.0800, subp. 14
Record the pressure drop and water flow rate once each day of operation.	Title I Condition: Monitoring of equipment operating parameters to avoid major source classification under 40 CFR Section 52.21; to avoid major source classification under 40 CFR Section 70.2 and Minn. R. 7007.0200
Inspect quarterly, or as required by manufacturing specifications, all components that are not subject to wear or plugging, including structural components, housing, ducts, and hoods. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
Inspect monthly, or as required by manufacturing specifications, all components that are subject to wear or plugging. Maintain a written record of the inspection and any action resulting from the inspection.	Minn. R. 7007.0800, subp. 2 and subp. 14
If necessary, the Permittee shall apply for an amendment to update the pressure drop range or inlet water flow rate given for this control device once vendor data is available or after actual normal operating data has been obtained. If necessary, the Permittee shall apply for the amendment no later than 60 days after startup of the control device.	Minn. R. 7007.1400, subp. 1(C)
Calibrate the gauges annually, or as often as required by manufacturing specifications and maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 2 and subp. 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: Al-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: TK 001 190 proof ethanol**

<b>What to do</b>	<b>Why to do it</b>
Recordkeeping: Maintain records showing the dimensions of the tank and an analysis showing the tank capacity	40 CFR Section 60.116b (b); Minn. R. 7011.1520 (C)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: Al-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: TK 002 200 proof ethanol**

<b>What to do</b>	<b>Why to do it</b>
Recordkeeping: Maintain records showing the dimensions of the tank and an analysis showing the tank capacity	40 CFR Section 60.116b (b); Minn. R. 7011.1520 (C)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: Al-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: TK 003 denaturant**

<b>What to do</b>	<b>Why to do it</b>
Recordkeeping: Maintain records showing the dimensions of the tank and an analysis showing the tank capacity	40 CFR Section 60.116b (b); Minn. R. 7011.1520 (C)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: Al-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: TK 004 denatured ethanol**

<b>What to do</b>	<b>Why to do it</b>
Recordkeeping: Maintain records showing the dimensions of the tank and an analysis showing the tank capacity	40 CFR Section 60.116b (b); Minn. R. 7011.1520 (C)
Recordkeeping: Maintain records of the volatile organic liquid (VOL) stored, the period of storage, and the maximum true vapor pressure of the VOL during the respective storage period, calculated as described in 40 CFR Section 60.116b(e).	40 CFR Section 60.116b(c); Minn. R. 7011.1520 (C)
Notification: Notify the Administrator within 30 days when the maximum true vapor pressure exceeds 5.2 kPa.	40 CFR Section 60.116b(d); Minn. R. 7011.1520 (C)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: Al-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: TK 005 denatured ethanol**

<b>What to do</b>	<b>Why to do it</b>
Recordkeeping: Maintain records showing the dimensions of the tank and an analysis showing the tank capacity	40 CFR Section 60.116b (b); Minn. R. 7011.1520 (C)
Recordkeeping: Maintain records of the volatile organic liquid (VOL) stored, the period of storage, and the maximum true vapor pressure of the VOL during the respective storage period, calculated as described in 40 CFR Section 60.116b(e).	40 CFR Section 60.116b(c); Minn. R. 7011.1520 (C)
Notification: Notify the Administrator within 30 days when the maximum true vapor pressure exceeds 5.2 kPa.	40 CFR Section 60.116b(d); Minn. R. 7011.1520 (C)



**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: Al-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: FS 002 Truck traffic on unpaved roads**

<b>What to do</b>	<b>Why to do it</b>
Fugitive emissions: Do not cause or permit the transporting of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Do not cause or permit a road or a driveway to be constructed, used, repaired, or demolished without applying all such reasonable measures as may be required to prevent particulate matter from becoming airborne.	Minn. R. 7011.0150

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: Al-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: FS 003 Uncaptured grain emissions**

<b>What to do</b>	<b>Why to do it</b>
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 5 percent opacity for fugitive emissions from truck unloading of grain or grain handling activities	Minn. R. 7011.1005, subp. 3(A)

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

07/25/97

Facility Name: Al-Corn Clean Fuel

Permit Number: 03900028 - 002

**Subject Item: FS 004 Uncaptured DDGS emissions**

<b>What to do</b>	<b>Why to do it</b>
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 5 percent opacity for fugitive emission from DDGS handling activities, and from railcar DDGS loading.	Minn. R. 7011.1005, subp. 3(A)
Opacity: less than or equal to 10 percent opacity for fugitive emissions from DDGS truck loading.	Minn. R. 7011.1005, subp. 3(B)

**TABLE B: SUBMITTALS**

07/25/97

Facility Name: Al-Corn Clean Fuel

Permit Number: 03900028 - 002

Table B lists the submittals you must send to the Commissioner. Table B is divided into two sections, for source-specific submittal requirements and for submittals required of all permittees. Source-specific submittals are further organized as either one-time only or recurrent requirements. You may also be subject to additional reporting requirements contained in the compliance schedule located in Table C of this permit. All submittals must be postmarked or received by the date specified in the table, and certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Submittals which must be provided on standardized forms approved by the Commissioner are noted in Tables B and C.

Send any application for a permit or permit amendment to: Permit Information Coordinator, Permit Section, Air Quality Division, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4914. Also send the Permit Information Coordinator notices of: accumulated insignificant activities, installation of control equipment, replacement of an emissions unit, and changes that contravene a permit term.

Send all other submittals to: Compliance Tracking Coordinator, Compliance Determination Unit, Air Quality Division, Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

**TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

What to send	When to send	Portion of Facility Affected
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup	EU032
Performance Test Notification (written)	due 30 days before Performance Test	SV003, SV004, SV007, SV008
Performance Test Plan	due 30 days before Performance Test	SV003, SV004, SV007, SV008
Performance Test Report - Microfiche Copy	due 105 days after Performance Test	SV003, SV004, SV007, SV008
Performance Test Report	due 45 days after Performance Test	SV003, SV004, SV007, SV008
Testing Frequency Plan	due 60 days after Performance Test for particulate matter and particulate matter < 10 micron. The plan shall specify a testing frequency using the test data based on MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA.	SV008
Testing Frequency Plan	due 60 days after Performance Test for volatile organic compounds, particulate matter, and particulate matter <10 micron. The plan shall specify a testing frequency using the test data based on MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA	SV004
Testing Frequency Plan	due 60 days after Performance Test for volatile organic compounds. The plan shall specify a testing frequency using the test data based on MPCA guidance. Future performance tests based on year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required on written approval of MPCA	SV003, SV007

**TABLE B: RECURRENT SUBMITTALS**

07/25/97

Facility Name: AI-Corn Clean Fuel

Permit Number: 03900028 - 002

<b>What to send</b>	<b>When to send</b>	<b>Portion of Facility Affected</b>
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Initial Startup of the facility. The first report covers January 1st through June 30th. The second report covers July 1st through December 31st.	Total Facility
Compliance Certification	due 30 days after end of each calendar year following Initial Startup of the facility. The report covers all deviations experienced during the calendar year.	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

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 03900028-002**

This technical support document is for all parties interested in the draft permit. The purpose of this document is to set forth the legal and factual basis for the draft permit conditions, including references to the applicable statutory or regulatory provisions.

1. General Information

1.1. Applicant and Stationary Source Location:

Owner/Operator Address and Phone Number (list both if different)	Facility Address (SIC Code: 2869)
Al-Corn Clean Fuel P.O. Box 184 Claremont, Minnesota 55924  Randall J. Doyal, General Manager Phone: (507)528-2494 Fax: (507)528-2612	Al-Corn Clean Fuel Highway 14 West Claremont, Dodge County, MN

1.2. Description Of The Facility

This facility produces fuel-grade ethanol as a primary product, and distillers' dried grains with solubles (DDGS) as a by-product. Emission sources include receiving, storing, handling, and cleaning corn; steam production (boiler); drying, storage, handling, and shipping of DDGS; fermentation and distillation; storage of ethanol of varying purities at various points in the process; storage of gasoline (denaturant); and shipping of denatured ethanol. Primary pollutants include particulate matter, particulate matter smaller than 10 microns, and volatile organic compounds..

1.3 Description of the Activities Allowed By This Permit Action

A. This permit action allows the conversion of the existing beer well to a fermentation unit (tank), and the subsequent construction of a replacement beer well, to increase the capacity of the facility. No other physical modifications are authorized. Because of the increase in capacity, the production limit in the permit is being increased to 14,500,000 gallons per year from 10,000,000 gallons per year of 200-proof ethanol. (Because the increase is only 4.5 million gallons of alcohol, an EAW is not required. Expansion of an ethanol plant by 5 million gallons of alcohol per year or more triggers a mandatory EAW under Minn. R. 4410.4300, subp. 5(B).) Increases in VOC and PM/PM<sub>10</sub> emission limits are also authorized because of the increased ethanol production and corn handling requirements.

B. Requirements of New Source Performance Standards (NSPS) Subparts VV, NNN, and RRR are being removed from this permit, because they were never intended to apply to this type of facility (conversion of biomass to ethanol by fermentation). (They were originally included as applicable requirements, but further review has revealed that they do not apply.) This results in some existing limits being changed to "Title I Conditions."

C. The "GP001" limit was removed from the permit. It was determined during the issuance of subsequent permits for ethanol plants that such a limit is unnecessary. (This is not a result of a modification at the facility.)

D. Changes were made regarding the applicable requirements from NSPS Subpart Kb (Tanks 4 and 5). This is because the capacity of the tanks are greater than 151 m<sup>3</sup>, but the maximum vapor pressure is less than 5.2 kPa. (This is not a result of any modification at the facility, but an error in the original permit.)

#### 1.4 Changes Made Since the Public Notice

A. Control efficiencies were added for all control equipment. No additional monitoring, testing, or recordkeeping is required. This was added to make the permit more federally enforceable, per EPA comments made on the permit for Southeast Minnesota Ethanol Coop.

B. The VOC emissions from equipment leaks were initially done using outdated emission factors. The emission factors were corrected, and the resulting PTE is 11.24 tpy from the unit and 87.16 tpy from the facility (compared to 85.42 tpy initially public noticed).



1.5. Facility Emissions:

Table 1. 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	Emission Decreases Authorized with this Permit Action	*Other contemporaneous emission increases/decreases (TPY)	Overall Emission Change (TPY)	NSR/112(g) Threshold Level (TPY)	NSR/MACT Review Required (Yes or No)
PM	4.03	17.65	17.65	NA	NA	17.65	100	No
PM <sub>10</sub>	3.45	15.12	15.12	NA	NA	15.12	100	No
SO <sub>2</sub>	0.0	0.0	0.0	NA	NA	0.0	100	No
NO <sub>x</sub>	0.0	0.0	0.0	NA	NA	0.0	100	No
VOC	5.61	24.57	26.33	NA	NA	26.33	100	No
CO	0.0	0.0	0.0	NA	NA	0.0	100	No
Toluene	neg	0.0	0.0	NA	NA	0.0	10	No
Benzene	neg	0.016	0.016	NA	NA	0.016	10	No
Total HAPs	neg	0.016	0.016	NA	NA	0.016	25	No

\*Other emission changes during the contemporaneous period as defined by 40 CFR 52.21, 40 CFR 52.24 or 40 CFR 51

Table 2. Total Facility Potential to Emit Summary:  
(See GI-07 and attached calculations for details)

	PM	PM <sub>10</sub>	SO <sub>2</sub>	NO <sub>x</sub>	VOC	CO	Toluene	Benzene	Tot HAP
Total Facility Limited Potential Emissions*	79.6	56.55	0.23	28.8	87.16	9.76	0.09	0.106	0.106

Table 3. Permit Action Classification

Classification	Major/Affected Source	*Synthetic Minor	*Minor
<b>PSD</b>	NA	PM, PM <sub>10</sub> , VOC	NO <sub>x</sub> , SO <sub>2</sub> , CO, Pb
<b>NAAR</b>	NA	NA	NA
<b>Part 70</b>	N/A	PM, PM <sub>10</sub> , VOC	NO <sub>x</sub> , SO <sub>2</sub> , CO, Pb, HAPs

\* 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

Summary Regulatory and/or Statutory Basis of the Emission or operational Limit

### Regulatory Overview of Units Affected by the Modification

Table 4. Regulatory Overview

EU, GRP, or SV #	Applicable Regulations	Comments
SV003 SV004 SV007	40 CFR 52.21	New emission limits taken to keep the total potential emissions of VOC from the production of ethanol below levels defined as “major” by 40 CFR 52.21. (Replaces previous emission limits, which although kept emissions <100 tpy, were not Title I conditions because of applicability (we thought) of NSPS subparts NNN and RRR.)
SV004 SV008	40 CFR 52.21	New emission limits taken to keep the total potential emissions of PM and PM <sub>10</sub> from the handling of grain and DDGS below levels defined as “major” by 40 CFR 52.21.
SV001 SV002 SV004 FS003 FS004	Minn. R. 7007.1005, subp. 3(D)	Standards of Performance for Dry Bulk Agricultural Commodity facilities. These standards previously did not apply; but with the additional grain now handled, the facility comes within the applicability of this standard.
SV001 SV002	Title I Conditions	The baghouses installed to control emissions from grain handling, combined with the capacity of the equipment to generate particulate emissions, are accepted as adequate to meet the Title I emission limits. Therefore, testing is not required.
TK001 TK002	NSPS Subpart Kb	These tanks are exempt from most of the requirements of Kb, under 40 CFR Section 60.110b(c)
TK003	NSPS Subpart Kb	This tank is exempt from most of the requirements of Kb, under 40 CFR Section 60.110b(b)
CE001 CE002 CE003 CE004 CE005	40 CFR 52.21	Control efficiency required to maintain non-major status under PSD and Part 70

### 3. Conclusion

Based on the information provided by Al-Corn Clean Fuel, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 03900028-002 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: Toni Volkmeier, Cary Hernandez, Marshall Cole, Dave Vaaler

Attachments: Forms GI-04 through GI-07, calculations