

**AIR EMISSION PERMIT NO. 14500003- 006**

**IS ISSUED TO**

Land O' Lakes Inc.

**MELROSE DAIRY PROTEINS LLC**

1000 Kraft Drive East

Melrose, Stearns County, MN 56352

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	11/01/1994
Major Amendment	03/21/2000
Total Facility Oper. Permit - Reissuance	1/29/2003
Major Amendment	09/27/2006

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 are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

**Permit Type:** Federal; Pt 70/Limits to Avoid NSR

**Issue Date:** February 26, 2007

**Expiration:** 11/08/2011  
All Title I Conditions do not expire.

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Richard J. Sandberg, Manager  
Air Quality Permits Section  
Industrial Division

for Brad Moore  
Commissioner  
Minnesota Pollution Control Agency

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**NOTICE TO THE PERMITTEE:**

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

Metro Area	(651) 296-6300
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Outside Metro Area	1-800-657-3864
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TTY	(651) 282-5332
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The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

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

**PERMIT SHIELD:**

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

**FACILITY DESCRIPTION:**

Melrose Dairy Proteins LLC (MDP) operates a cheese manufacturing plant and ethanol production facility in Melrose, Minnesota. The primary capability of the plant consists of the manufacture of natural cheeses, including parmesan, Romano, and cheddar. A portion of the by-products from the cheese-making process are fermented and distilled to produce denatured ethanol.

This permit is a major modification of the Facility's Part 70 operating permit which was first issued on July 28, 1998 and reissued on November 8, 2006. MDP is increasing the facility's ethanol production capacity from 3.0 to 4.0 million gallons per year (MGY). This increased production is accomplished through process changes including altering operation of the evaporator and changing a beer well into a fermentation tank. The changes the company is making have the effect of debottlenecking the ethanol production process but since the facility is an existing minor source that is staying minor, the debottlenecking is not an issue.

The portion of the facility that produces ethanol is subject to federal Prevention of Significant Deterioration (PSD) regulations when potential emissions reach 100 tons per year of any criteria pollutant. The capacity of the ethanol production facility is such that potential controlled emissions of all criteria pollutants produced by the production of ethanol are less than 100 tons per year. The facility as a whole (ethanol production plus cheese production) is subject to PSD when potential emissions reach 250 tons per year of any criteria pollutant. The permit contains conditions such that potential emissions of all criteria pollutants are less than 250 tons per year. Since the potential emissions of the facility as a whole exceed 100 tons per year, the facility is subject to Part 70 permitting requirements.

**TABLE A: LIMITS AND OTHER REQUIREMENTS**

A-1

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**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**

<b>What to do</b>	<b>Why to do it</b>
<b>SOURCE-SPECIFIC REQUIREMENTS</b>	hdr
Production: less than or equal to 4000000 gallons/year using 12-month Rolling Sum of ethanol (prior to addition of denaturant).	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record and maintain the total quantity of ethanol produced (prior to addition of denaturant) at the facility.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Recordkeeping: By the 15th day of every month, record the gallons of ethanol produced during the previous month, and the gallons of ethanol produced during the previous 12 months (12-month rolling sum).	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
<b>OPERATIONAL REQUIREMENTS</b>	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Section 116.07, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 1, 2 & 4; Minn. R. 7009.0100-7009.0080.
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
Computer Dispersion Modeling Information: Melrose Dairy submitted modeling information on 1/23/03. Update the modeling data for any new or modified units within 180 days after Permit Issuance.	Minn. R. 7007.0800, subp. 2
<b>PERFORMANCE TESTING</b>	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A and/or 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****A-2**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

<b>MONITORING REQUIREMENTS</b>	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A and/or B, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
<b>RECORDKEEPING</b>	hdr
Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
Recordkeeping: 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)
<b>REPORTING/SUBMITTALS</b>	hdr
Shutdowns: Notify the Commissioner at least 24 hours in advance of a planned shutdown, or as soon as possible after an unplanned shutdown of any process or control equipment, if the shutdown would cause an increase in the emission of any regulated air pollutant. 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. 3
Breakdowns: Notify the Commissioner within 24 hours after a breakdown of more than one hour duration of any process or control equipment if the breakdown causes an increase in the emission of any regulated air pollutant. 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
Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.	Minn. R. 7019.1000, subp. 1
Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description: 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation.	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 through Minn. R. 7007.1500
Application for Permit Reissuance: due 180 days before expiration of existing permit.	Minn. R. 7007.0400, subp. 2
Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 through Minn. R. 7019.3010
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 through Minn. R. 7002.0095

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-3**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**Subject Item:** GP 004 Residual Oil Usage**Associated Items:** EU 001 Boiler No. 1

EU 002 Boiler No. 2

EU 003 Boiler No. 3

What to do	Why to do it
A. OPERATING LIMITS	hdr
Fuel Usage: less than or equal to 1845000 gallons/year using 12-month Rolling Sum of residual fuel oil combusted by the boilers in GP 004.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Sulfur Content of Fuel: less than or equal to 1.5 percent by weight	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
B. RECORDKEEPING REQUIREMENTS	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record and maintain the total quantity of residual fuel oil combusted by boilers in GP004. Records shall be based on the actual amount of fuel combusted, as measured using an in-line flow meter.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Recordkeeping: By the 15th day of each month, calculate and record the residual fuel oil use for the previous month and for the previous 12 months (12-month rolling sum). Records shall be based on the actual amount of fuel combusted, as measured using an in-line flow meter.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Recordkeeping: Maintain residual oil vendor certifications of the sulfur content (percent by weight) for all residual fuel oil combusted by the boilers in GP 004.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Melrose Dairy Proteins LLC  
Permit Number: 14500003 - 006

- Subject Item:** GP 005 Other Fuel Usage
- Associated Items:** EU 025 Maintenance Office Heating Unit  
EU 026 HTSH Control Room Space Heater  
EU 027 Separator Room Heater  
EU 028 Lab Heater  
EU 029 Waste Treatment Heater  
EU 030 Waste Treatment Heater  
EU 031 Waste Treatment Furnace  
EU 033 Emergency Generator

What to do	Why to do it
Fuel burned: Natural gas only.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-5**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**Subject Item:** SV 003 Automatic cheese salter (CE001)**Associated Items:** EU 004 Automatic Cheese Salter

What to do	Why to do it
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. (PTE: 1.68 lbs/hour)	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Pressure Drop: greater than or equal to 1 inches of water column and less than or equal to 5 inches of water column , unless a new range is required to be set pursuant to Minn. R. 7017.2025, subp. 3. If a new range is required to be set, it will be based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Title I Condition: Limit taken to avoid classification as a major source under 40 CFR Section 52.21;Minn. R. 7007.0800, subp. 2 and 14
Water flow rate: greater than or equal to 25 gallons/minute , unless a new limit is required to be set pursuant to Minn. R. 7017.2025, subp. 3. If a new limit is required to be set, it will be based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Title I Condition: Limit taken to avoid classification as a major source under 40 CFR Section 52.21;Minn. R. 7007.0800, subp. 2 and 14
Each emission unit shall be controlled by the scrubber (CE 001) while in production operation ("on-line"). Equipment may only be "offline" while not in production operation.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-6**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**Subject Item: SV 004 Fermentation scrubber (CE002)****Associated Items:** EU 005 Fermentor No. 1

EU 006 Fermentor No. 2

EU 007 Fermentor No. 3

EU 008 Fermentor No. 4

EU 009 Fermentor No. 5

EU 010 Fermentor No. 6

EU 011 Pre-Fermentor

EU 012 Pre-Fermentor

EU 013 Yeast Tank

EU 014 Beer Still Vent

EU 015 Stripper Flux Vent

EU 016 Mol. Sieve Vacuum Receiver Vent

EU 017 Fermentor No. 7

EU 018 Fermentor No. 8

EU 019 Beer Well

EU 037 TK001 (Ethanol)

EU 038 TK002 (Ethanol)

EU 039 TK003 (Ethanol)

What to do	Why to do it
<b>A. EMISSION LIMITS</b>	hdr
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)
Volatile Organic Compounds: less than or equal to 20.6 lbs/hour	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
<b>B. POLLUTION CONTROL REQUIREMENTS</b>	hdr
Volatile Organic Compounds: greater than or equal to 50 percent collection efficiency	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Pressure Drop: greater than or equal to 7 inches of water column and less than or equal to 16 inches of water column , unless a new range is required to be set pursuant to Minn. R. 7017.2025, subp. 3. If a new range is required to be set, it will be based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Title I Condition: Limit taken to avoid classification as a major source under 40 CFR Section 52.21;Minn. R. 7007.0800, subp. 2 and 14; also meets CAM requirements per 40 CFR Section 64.3
Water flow rate: greater than or equal to 9 gallons/minute , unless a new limit is required to be set pursuant to Minn. R. 7017.2025, subp. 3. If a new limit is required to be set, it will be based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated.	Title I Condition: Limit taken to avoid classification as a major source under 40 CFR Section 52.21;Minn. R. 7007.0800, subp. 2 and 14; also meets CAM requirements per 40 CFR Section 64.3
Each emission unit shall be controlled by the scrubber (CE 002) while in production operation ("on-line"). Equipment may only be "offline" while not in production operation.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; also meets CAM requirements per 40 CFR Section 64.3
<b>D. TESTING REQUIREMENTS</b>	hdr
Performance Test: due 180 days after permit issuance to measure emissions of volatile organic compounds (results reported as total mass of VOC).	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Melrose Dairy Proteins LLC  
Permit Number: 14500003 - 006

<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.</p> <p>Performance Test Notification (written): due 30 days before each Performance Test</p> <p>Performance Test Plan: due 30 days before each Performance Test</p> <p>Performance Test Pre-test Meeting: due 7 days before each Performance Test</p> <p>Performance Test Report: due 45 days after each Performance Test</p> <p>Performance Test Report - Microfiche Copy: due 105 days after each Performance Test</p>	<p>Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2</p>
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**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-8**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**Subject Item:** SV 006 Emergency generator**Associated Items:** EU 033 Emergency Generator

What to do	Why to do it
Opacity: less than or equal to 20 percent opacity once operating temperature has been attained.	Minn. R. 7011.2300, subp. 1
Sulfur Dioxide: less than or equal to 0.5 lbs/million Btu heat input (Compliance with this condition is demonstrated inherently, given potential emissions of 0.0006 lbs/million BTU heat input)	Minn. R. 7011.2300, subp. 2
Fuel type: Natural gas only	Minn. R. 7005.0100, subp. 35a

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-9**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**Subject Item:** EU 001 Boiler No. 1**Associated Items:** GP 004 Residual Oil Usage

SV 001 Boilers 1 and 2

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input (Compliance with this condition is demonstrated inherently, given potential emissions of 0.019 lbs/million Btu heat input)	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except as allowed in Minn. R. 7011.0510, subp. 2.	Minn. R. 7011.0510, subp. 2
Fuels Permitted: Natural gas or residual fuel oil only. (See GP 004 for additional limits on fuel oil usage.)	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-10**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**Subject Item:** EU 002 Boiler No. 2**Associated Items:** GP 004 Residual Oil Usage

SV 001 Boilers 1 and 2

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.6 lbs/million Btu heat input (Compliance with this condition is demonstrated inherently, given potential emissions of 0.019 lbs/million Btu heat input)	Minn. R. 7011.0510, subp. 1
Opacity: less than or equal to 20 percent opacity except as allowed in Minn. R. 7011.0510, subp. 2.	Minn. R. 7011.0510, subp. 2
Fuels Permitted: Natural gas or residual fuel oil only. (See GP 004 for additional limits on fuel oil usage.)	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-11**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**Subject Item:** EU 003 Boiler No. 3**Associated Items:** GP 004 Residual Oil Usage

SV 002 Boiler 3

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.4 lbs/million Btu heat input (Compliance with this condition is demonstrated inherently, given potential emissions of 0.023 lbs/million Btu heat input)	Minn. R. 7011.0515, subp. 1
Opacity: less than or equal to 20 percent opacity except as allowed by Minn. R. 7011.0515, subp. 2.	Minn. R. 7011.0515, subp. 2
Fuels Permitted: Natural gas or residual fuel oil only. (See GP 004 for additional limits on fuel oil usage.)	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Melrose Dairy Proteins LLC  
Permit Number: 14500003 - 006

Subject Item: EU 033 Emergency Generator

Associated Items: GP 005 Other Fuel Usage  
SV 006 Emergency generator

What to do	Why to do it
Fuel burned: Natural gas only.	Minn. Stat. Section 116.07, subd. 4a; Minn. R. 7007.0800, subp. 2



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-13**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**Subject Item:** EU 036 Syble Process Dust Collector**Associated Items:** CE 003 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

SV 008 Syble Process Dust Collector

What to do	Why to do it
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. Because EU036 is controlled by control equipment which has a collection efficiency of 99.7% by weight, EU036 is considered to be in compliance with this requirement. (PTE: 0.63 lbs/hour)	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
The Permittee shall operate and maintain the fabric filter in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-14**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**Subject Item:** CE 001 Gas Scrubber (General, Not Classified)**Associated Items:** EU 004 Automatic Cheese Salter

What to do	Why to do it
Record the pressure drop and water flow rate of each scrubber once each day of operation.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000
Corrective Action: if the pressure drop and/or water flow rate are not equal or greater than the minimum values specified in the Operation and Maintenance Plan, the Permittee shall take corrective action as soon as possible to achieve the required operating values. The Permittee shall keep a record of the type and date of all corrective actions taken.	Minn. R. 7007.0800, subp. 4, 5, and 14
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
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
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)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-15**

02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

**Subject Item: CE 002 Packed-Gas Adsorption Column****Associated Items:** EU 005 Fermentor No. 1

EU 006 Fermentor No. 2

EU 007 Fermentor No. 3

EU 008 Fermentor No. 4

EU 009 Fermentor No. 5

EU 010 Fermentor No. 6

EU 011 Pre-Fermentor

EU 012 Pre-Fermentor

EU 013 Yeast Tank

EU 014 Beer Still Vent

EU 015 Stripper Flux Vent

EU 016 Mol. Sieve Vacuum Receiver Vent

EU 017 Fermentor No. 7

EU 018 Fermentor No. 8

EU 037 TK001 (Ethanol)

EU 038 TK002 (Ethanol)

EU 039 TK003 (Ethanol)

TK 001 Ethanol (SV004)

TK 002 Ethanol (SV004)

TK 003 Ethanol (SV004)

<b>What to do</b>	<b>Why to do it</b>
Record the pressure drop and water flow rate of each scrubber once each day of operation.	Title I Condition: To avoid classification as a major source under 40 CFR Section 52.21 and Minn. R. 7007.3000; also meets CAM requirements per 40 CFR Section 64.3
Corrective Action: if the pressure drop and/or water flow rate are not equal or greater than the minimum values specified in the Operation and Maintenance Plan, the Permittee shall take corrective action as soon as possible to achieve the required operating values. The Permittee shall keep a record of the type and date of all corrective actions taken.	Minn. R. 7007.0800, subp. 4, 5, and 14; also meets CAM requirements per 40 CFR Section 64.3
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
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
Operation and Maintenance: The Permittee shall operate and maintain CE001 according to the control equipment manufacturers specifications and the facility operation and maintenance plan.	Minn. R. 7007.0800, subp. 2; also meets CAM requirements per 40 CFR Section 64.3

## TABLE B: SUBMITTALS

B-1 02/26/07

Facility Name: Melrose Dairy Proteins LLC  
Permit Number: 14500003 - 006

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:

AQ Permit Technical Advisor  
Industrial 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:

AQ Compliance Tracking Coordinator  
Industrial 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

Facility Name: Melrose Dairy Proteins LLC  
Permit Number: 14500003 - 006

What to send	When to send	Portion of Facility Affected
Testing Frequency Plan	due 60 days after Initial Performance Test for volatile organic compounds. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	SV004

**TABLE B: RECURRENT SUBMITTALS****B-3** 02/26/07

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003 - 006

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 07/28/1998 . The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, a report shall be submitted stating no deviations.	Total Facility
Compliance Certification	due 30 days after end of each calendar year starting 07/28/1998 (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner, and to the U.S. EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

## APPENDIX A: INSIGNIFICANT ACTIVITIES

Facility Name: Melrose Dairy Proteins LLC

Permit Number: 14500003-005

Fermentation Room Seed Tank (EU023)

Fermentation Room Pump Seals (EU024)

Maintenance Office Heating Unit (EU025)

Fuel Type: Natural Gas

Fuel Input: 135,000 btu/hr

HTST Control Room Space Heater (EU026)

Fuel Type: Natural Gas

Fuel Input: 100,000 btu/hr

Separator Room Heater (EU027)

Fuel Type: Natural Gas

Fuel Input: 175,000 btu/hr

Lab Heater (EU028)

Fuel Type: Natural Gas

Fuel Input: 231,000 btu/hr

Waste Treatment Heater (EU029)

Fuel Type: Natural Gas

Fuel Input: 75,000 btu/hr

Waste Treatment Heater (EU030)

Fuel Type: Natural Gas

Fuel Input: 350,000 btu/hr

Waste Treatment Furnace (EU031)

Fuel Type: Natural Gas

Fuel Input: 75,000 btu/hr

Emergency Generator (EU033)

Fuel Input: 1.1 MMbtu/hr

No. 5 Fuel Oil Tank (TK006)

No. 5 Fuel Oil Tank (TK007)

**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 14500003-006**

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

**1. General Information**

**1.1. Applicant and Stationary Source Location:**

Applicant/Address	Stationary Source/Address (SIC Code: <b>2022</b> )
Land O'Lakes, Inc. 4001 Lexington Avenue North Arden Hills, MN 55126	Melrose Dairy Proteins, LLC 1000 Kraft Drive East Melrose, MN Stearns County
Contact: <b>Mr. Eric Tiegen</b> Phone: <b>(651 ) 481-2164</b>	Contact: <b>Mr. Henry Braegelmann</b> Phone: <b>(320) 256-1933</b>

**1.2. Description of the Facility**

Melrose Dairy Proteins LLC (MDP) operates a cheese manufacturing plant and ethanol production facility in Melrose, Minnesota. The primary capability of the plant consists of the manufacture of natural cheeses. A portion of the by-products from the cheese-making process are fermented and distilled to produce denatured ethanol. The facility operates 24 hours per day, 365 days per year. This permit is a major modification of the Facility's Part 70 operating permit which was first issued on July 28, 1998 and reissued on November 8, 2006.

The portion of the facility that produces ethanol is subject to federal Prevention of Significant Deterioration (PSD) regulations when potential emissions reach 100 tons per year of any criteria pollutant. The capacity of the ethanol production facility is such that potential controlled emissions of all criteria pollutants produced by the production of ethanol are less than 100 tons per year. The facility as a whole (ethanol production plus cheese production) is subject to PSD when potential emissions reach 250 tons per year of any criteria pollutant. The permit contains conditions such that potential emissions of all criteria pollutants are less than 250 tons per year. Since the potential emissions of the facility as a whole exceed 100 tons per year, the facility is subject to Part 70 permitting requirements.



### **1.3 Description of the Activities Allowed by this Permit Action**

MDP is increasing the facility's ethanol production capacity from 3.0 to 4.0 million gallons per year (MGY). This increased production is accomplished through process changes including altering operation of the evaporator and changing a beer well into a fermentation tank. The changes the company is making have the effect of debottlenecking the ethanol production process but since the facility is an existing minor source that is staying minor, the debottlenecking is not an issue.

### **1.4 Facility Emissions:**

The limited potential to emit is shown below:

Table 1. Limited Potential to Emit from Ethanol Production Only:

	PM tpy	PM10 tpy	SO2 tpy	NOx tpy	CO tpy	VOC tpy	Pb tpy
Limited Potential Emissions Prior to Proposed Project	6.1	3.2	28.5	18.6	10.4	80.0	0.0002
Increase in Limited Potential Emissions	1.0	0.9	9.5	6.2	3.5	16.2	0.0001
Limited Potential Emissions After Proposed Project	7.0	4.1	38.0	24.8	13.9	96.2	0.0003

Table 2. Limited Potential to Emit from Entire Facility:

	PM tpy	PM10 tpy	SO2 tpy	NOx tpy	CO tpy	VOC tpy	Pb tpy
Limited Potential Emissions After Proposed Project	35.6	30.8	217.8	152.9	97.4	101.9	0.0018

## **2. Conclusion**

Based on the information provided by Melrose Dairy Proteins LLC, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 14500003-006, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team:      Greg Kvaal (permit writer/engineer)  
   Dave Crowell (enforcement)  
   Andy Place (stack testing)  
   Jim Robin (peer reviewer)