AIR QUALITY PERMIT

Issued To: General Mills Operations, Inc.
2500 9th Avenue North
Great Falls, MT 59401

Permit #2849-03
Modification Request Received: 10/31/02
Department Decision on Modification: 12/18/02
Permit Final: 1/03/03
AFS #: 013-0003

An air quality permit, with conditions, is hereby granted to General Mills Operations, Inc. (General Mills), pursuant to Section 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.701, *et seq*., as amended, for the following:

Section I: Permitted Facilities

A. Plant Location

The General Mills Flour Mill is located at 2500 9th Avenue North, in Great Falls, Montana. The facility produces various types of flour, wheat germ, bran and millfeed. A list of the permitted equipment is located in Section I of the permit analysis.

B. Current Permitting Action

The current permit action is a modification to Permit #2849-02. Bison Engineering, Inc. (Bison), on behalf of General Mills, submitted a request for the addition of two Kice Venturi-Jet Dust Collectors. Based on the information submitted, the Department of Environmental Quality (Department) determined that the addition of the equipment can be accomplished according to ARM 17.8.705 (l)(r) because the addition of the dust collectors result in less than 15 tons per year of any pollutants. In addition, the submittal requested that the annual opacity requirement for the Millfeed Loadout be eliminated. After reviewing past opacity tests, the Department determined the opacity testing requirement will be removed from Permit #2849-03. However, the Department may require opacity testing in the future. Furthermore, the permit language will be updated in the current permit action.

Section II: Conditions and Limitations

A. Conditions

1. General Mills shall install, operate, and maintain the truck loadout enclosure, loadout conveyor, hood, baghouse, and all other emission control equipment as specified in their permit application for Montana Air Quality Permit and all subsequent revisions (ARM 17.8.710).

2. General Mills shall not cause or authorize the use of any streets, roads, or parking lots without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

3. General Mills shall flush paved roads with water to maintain compliance with the reasonable precautions requirement in Section II.A.2 (ARM 17.8.308).

B. Emission Limitations

1. General Mills shall not cause or authorize the production, handling, transportation, or storage of any material unless reasonable precautions are taken to control emissions of airborne particulate matter. Such emissions shall not exhibit an opacity of 20% or greater averaged over 6 consecutive minutes, unless superseded by more stringent limitations in the permit (ARM 17.8.308).

2. General Mills may not cause or authorize to be discharged into the atmosphere from any source installed after November 23, 1968, emissions that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

3. General Mills may not cause or authorize to be discharged into the atmosphere from any source installed on or before November 23, 1968, emissions that exhibit an opacity of 40% or greater averaged over 6 consecutive minutes (ARM 17.8.304).

4. General Mills may not cause or authorize to be discharged into the atmosphere from portions of the grain elevator where the grain is transferred from a truck or railcar to a receiving hopper, which commence construction, modification, or reconstruction after August 3, 1978, any visible fugitive emissions which exhibit greater than 5% opacity averaged over 6 consecutive minutes (ARM 17.8.340 and 40 CFR 60, Subpart DD).

5. General Mills may not cause or authorize to be discharged into the atmosphere from portions of the grain elevator where the grain is transferred from the elevator to a truck or railcar, which commenced construction, modification, or reconstruction after August 3, 1978, any visible fugitive emissions which exhibit greater than 10% opacity averaged over 6 consecutive minutes (ARM 17.8.340 and 40 CFR 60, Subpart DD).

6. General Mills may not cause or authorize to be discharged into the atmosphere from bucket elevators, legs, scale hoppers, surge bins, turn heads, scalpers, cleaners, and trippers which commenced construction, modification, or reconstruction after August 3, 1978, any fugitive emissions which exhibit greater than 0% opacity averaged over 6 consecutive minutes (ARM 17.8.340 and 40 CFR 60, Subpart DD).

7. The production rate on the Durum Cleaning House may not exceed 176,076 tons/year on a rolling 12-month average (ARM 17.8.715).

8. The production rate on the Durum Mill may not exceed 54,750 tons/year on a rolling 12-month average (ARM 17.8.715).

9. General Mills shall comply with all applicable standards, limitations, and the reporting, record keeping, and notification requirements of 40 CFR 60, Subpart DD (ARM 17.8.340).

C. Testing Requirements

1. General Mills shall comply with the test methods and procedures requirements as specified in 40 CFR Part 60, NSPS, Subpart DD, Standards of Performance for Grain Elevators. To demonstrate compliance with this Subpart, an EPA Method

9 opacity test shall be performed on all affected facilities (ARM 17.8.340), 40 CFR 60, Subpart A General Conditions and Subpart DD, Standards of Performance for Grain Elevators).

2. All compliance source tests must be conducted in accordance with the Montana Source Test Protocol and Procedures Manual (ARM 17.8.105).

3. The Department may require further testing (ARM 17.8.105).

D. Operational Reporting Requirements

1. General Mills shall maintain on-site records showing daily hours of operation and daily production rates for the last 12 months. The records compiled in accordance with this permit shall be maintained by General Mills as a permanent business record for at least 5 years following the date of the measurement, shall be submitted to the Department upon request, and shall be available at the plant site for inspection by the Department (ARM 17.8.710).

2. General Mills shall supply the Department with annual production information for all emission points, as required by the Department, in the annual emission inventory request. The request will include, but is not limited to all sources of emissions identified in the equipment list contained in the permit analysis.

Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in units as required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

3. General Mills shall document, by month, the annual production rate of the Durum Cleaning House and the Durum Mill. By the 25th day of each month, General Mills shall total the monthly production rates of the cleaning house and mill during the previous 12 months to verify compliance with the limitations in Sections II.B.7 and 8. A written report of the compliance verification shall be submitted annually to the Department no later than March 15 and may be submitted along with the annual emissions inventory (ARM 17.8.710).

4. General Mills shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.705(1)(r) that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location, or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emissions unit. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.705 (l)(r)(iv) (ARM 17.8.708).

Section III: General Conditions

A. Inspection – General Mills shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections, surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if General Mills fails to appeal as indicated below.

C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving General Mills of the responsibility for complying with any applicable federal, or Montana statute, rule or standard, except as specifically provided in ARM 17.8.701, *et seq*. (ARM 17.8.717).

D. Enforcement - Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement as specified in Section 75-2-401 *et seq*., MCA.

E. Appeals - Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The Department's decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department's decision until the conclusion of the hearing and issuance of a final decision by the Board.

F. Permit Inspection - As required by ARM 17.8.716, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the permitted source.

G. Construction Commencement - Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked.

H. Permit Fees - Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay by the permittee of an annual operation fee may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

PERMIT ANALYSIS
General Mills Operations, Inc.
Permit Number 2849-03

I. Introduction/Process Description

A. Permitted Equipment and Facilities

The General Mills Operations, Inc. (General Mills) facility includes, but is not limited to the following equipment.

1. Grain Elevator and associated equipment:

a. Two truck and one railcar receiving pits
b. U-leg (installed in 1982, maximum of 450 bushels/hour (bph))
c. New receiving leg (installed in 1982, maximum of 450 bph)
d. Receiving leg (installed in 1982, maximum of 450 bph)
e. Old farmers leg (installed in 1962, maximum of 60 bph)
f. Mix leg (installed in 1962, maximum of 60 bph)
g. Seventy-five raw product storage bins (1,500,000 bushels maximum capacity)
h. Eleven mixing bins
i. Drag conveyor
j. Two Kice Venturi Dust Collectors
k. West filter head house baghouse
l. East filter head house baghouse
m. New train shed baghouse
n. Front train shed baghouse
o. Middle train shed baghouse
p. Between tanks baghouse

2. Mill and associated equipment and baghouses (maximum design capacity 260 tons/day):

a. Cleaning equipment (installed in 1992)
b. Pneumatic conveyor
c. Millfeed hammer mill
d. Eight sifters (installed in 1982)
e. Eight purifiers (installed in 1965)
f. Twenty-five roll stands (installed 1916)
g. Six flour storage bins
h. Five pack bins
i. Flour packaging equipment (installed in 1942, 1962, 1960, and 1962)
j. Two palletizers (installed in 1994 and 1995)
k. Wheat germ bagger
l. Bran truck or railcar loadout
m. Fifty-three cyclones
n. Barley malt feed in station baghouse
o. Barley malt bin baghouse
p. Roll and head baghouse
q. Prebreak baghouse
r. Purifier baghouse
s. Purifier/packing baghouse

t. 1-2-3 break house
u. Durum baghouse
v. Wheat house baghouse
w. Wheat house II baghouse
x. Spokane baghouse
y. Bulk car baghouse

3. Two Natural Gas-Fired Boilers.

4. Millfeed Loadout Equipment (maximum receiving capability 3.1 tons/hour).

5. Durum Cleaning House (670 bu/hr) and associated baghouse.

6. A Durum Mill (3000 cwt/day) that includes sifters, grinders, and purifiers and associated baghouses.

7. A Flour Storage Bulk House and associated baghouse.

8. A Product storage Warehouse and associated baghouse.

B. Process Description

The General Mills grain elevator is designed to receive various types of grain from farmers; clean the grain if necessary. The facility is also used to grind and store the product before shipping the grain to market.

C. Permit History

On July 2, 1995, Permit **#2849-00** was issued to General Mills, Inc., to install and operate a new feedmill loadout station at their existing flour mill. Permit #2849-00 also combined Permits #38-3474, 24-62573, 19-12373, 80-82577, and 81-82577 issued by the Cascade County Health Department.

On September 24, 1996, Permit **#2849-01** was issued to General Mills to reflect the fact that the business name had changed. The facility continued to operate at 2500 9th Avenue North, in Great Falls, Montana.

On November 7, 1997, Permit **#2849-02** was issued to General Mills to construct a Durum Mill consisting of a Durum Cleaning House and associated baghouse, a Durum Mill, including sifters grinders, and purifiers, and associated baghouse, a Flour Storage Bulk House and associated baghouse, and a Product storage warehouse and associated baghouse. Permit #2849-02 replaced Permit #2849-01.

D. Current Permit Action

The current permit action is a modification to Permit #2849-02. Bison Engineering, Inc. (Bison), on behalf of General Mills, submitted a request for the addition of two Kice Venturi-Jet Dust Collectors. Based on the information submitted, the Department of Environmental Quality (Department) determined that the addition of the equipment can be accomplished according to ARM 17.8.705 (l)(r) because the addition of the dust collectors result in less than 15 tons per year of any pollutants. In addition, the submittal requested that the annual opacity requirement for the Millfeed Loadout be eliminated. After reviewing past opacity tests, the Department determined the opacity testing

requirement will be removed from Permit #2849-03. However, the Department may require opacity testing in the future. Furthermore, the permit language will be updated in the current permit action. Permit #2849-03 will replace Permit #2849-02.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial quotations of some applicable rules and regulations, which apply to the facility. The complete rules are stated in the Administrative Rules of Montana (ARM) and are available upon request from the Department. Upon request, the Department will provide references for locations of complete copies of all applicable rules and regulations or copies, where appropriate.

A. ARM 17.8, Sub-Chapter 1, General Provisions, including, but not limited to:

1. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment, including instruments and sensing devices, and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

2. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   General Mills shall comply with all requirements contained in the Montana Source Test Protocol and Procedures Manual, including but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

3. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.

4. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Sub-Chapter 2, Ambient Air Quality, including, but not limited to:

1. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
2. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
3. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
4. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate
5. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

General Mills must comply with the applicable ambient air quality standards.

C. ARM 17.8, Sub-Chapter 3, Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged to an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. Under this rule, General Mills shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.340 Standard of Performance for New Stationary Sources. The owner or operator of any stationary source or modification, as defined and applied in 40 CFR Part 60, shall comply with the standards and provisions of 40 CFR Part 60. Based on the information submitted by General Mills, this facility does have the potential to store over 1 million bushels of grain; therefore, all affected facilities constructed, modified, or reconstructed after August 3, 1978, including, but not limited to, the receiving legs installed in 1995, are subject to the provisions of 40 CFR 60, Subpart DD (40 CFR Part 60, Subpart A General Provisions, and Subpart DD Grain Elevators).

D. ARM 17.8, Sub-Chapter 5, Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. General Mills shall submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. General Mills was not required to submit an application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. This operation fee is based on the actual or estimated amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, as described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions which pro-rate the required fee amount.

E. ARM 17.8, Sub-Chapter 7, Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.704 General Procedures for Air Quality Preconstruction Permitting. An air quality preconstruction permit shall contain requirements and conditions applicable to both construction and subsequent use.

2. ARM 17.8.705 When Permit Required--Exclusions. Permits are required for facilities that have the potential to emit greater than 25 tons/year of any pollutant. General Mills has the potential to emit more than 25 tons/year of particulate matter and PM_{10}; therefore, a permit is required.

3. ARM 17.8.706 New or Altered Sources and Stacks, Permit Application Requirements. This rule requires that an application for an air quality permit be submitted for a new or altered source or stack. General Mills was not required to submit an application for the current permit action because it is a de minimis modification.

4. ARM 17.8.710 Conditions for Issuance of Permit. This rule requires that the source demonstrate compliance with applicable rules and standards before a permit can be issued. Also, a permit may be issued with such conditions as are necessary to assure compliance with all applicable rules and standards. General Mills demonstrated compliance with applicable rules and standards as required for permit issuance.

5. ARM 17.8.715 Emission Control Requirements. General Mills is required to install, on a new or altered source, the maximum air pollution control capability, which is technically practicable and economically feasible, except that a BACT shall be utilized. A BACT review was not required for the current permit action.

6. ARM 17.8.716 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

7. ARM 17.8.717 Compliance with Other Statutes and Rules. This rule states that nothing in the permit shall be construed as relieving General Mills of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.701, *et seq*.

8. ARM 17.8.720 Public Review of Permit Applications. This rule requires that General Mills notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. General Mills was not required to submit a public notice for the current permit action.

9. ARM 17.8.731 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which, in no event, may be less than 1 year after the permit is issued.

10. ARM 17.8.733 Modification of Permit. An air quality permit may be modified for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack which do not result in an increase in emissions because of those changed conditions of operation. A source may not increase its emissions beyond those found in its permit unless the source applies for and receives another permit.

11. ARM 17.8.734 Transfer of Permit. An air quality permit may be transferred from one party to another if written notice of Intent to Transfer is sent to the Department.

F. ARM 17.8, Sub-Chapter 8, Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this sub-chapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modification--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 and ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the Federal Clean Air Act (FCAA) that it would emit, except as this subchapter would otherwise allow.

This facility is not a major stationary source because it is not listed and does not have the potential to emit more than 250 tons per year (excluding fugitive emissions) of any air pollutant.

G. ARM 17.8, Sub-Chapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

a. Potential to Emit (PTE) > 100 tons/year of any pollutant;

b. PTE > 10 ton/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

c. Sources with the PTE > 70 tons/year of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #2849-03 for General Mills, the following conclusions were made.

a. The facility's PTE is less than 100 tons/year for SO_2, NO_x, and CO.

b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year of all HAPs.

c. This source is not located in a serious PM_{10} nonattainment area.

d. This facility is subject to a current NSPS (Subpart DD).

e. This facility is not subject to any current NESHAP standards.

f. This source is not a Title IV affected source.

g. This source is not an EPA designated Title V source.

Based on these facts, the Department has determined that General Mills is not a major source of emissions as defined under Title V.

III. Emission Inventory

Tons/Year

Existing Sources	TSP	PM-10	NO_x	VOC	CO	SO_x
Natural Gas Boiler #1	0.17	0.17	1.44	0.04	0.3	0.01
Natural Gas Boiler #2	0.33	0.33	2.76	0.12	0.58	0.02
Grain Receiving		0.0256	0.0064			
Precleaning/Handling	0.6551	0.1591				
Cleaning House	0.085	0.0206				
Grinding	0.0328	0.0079				
Millfeed Bin	0.1108	0.0269				
Millfeed Truck Loadout	0.0033	0.0009				
Paved Roads	0.08	0.07				
Durum Mill						
Cleaning House	0.1453	0.0352				
Grinding	0.0452	0.011				
Precleaning/Handling						
(Sifting & Purifying)	0.0343	0.0083				
Product Storage (Bulkhouse)	0.0343	0.0083				
Warehouse Storage (Bagged)	0.0343	0.0083				
Total	1.786	0.8629	4.20	0.16	0.88	0.03

Natural Gas Boiler #1

Maximum Fuel Combustion: 3281000Btu/hr

Maximum Fuel Consumption: 3281000 Btu/hr * 0.001 scf/Btu * 1E-6 MMscf = 0.003281 MMscf/hr

Hours of Operation: 8760 hours/year

TSP Emissions:

Emission Factor: 12lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)

Control Efficiency: 0%

Calculations: 12.0 lb/MMscf * 0.003281 MMscf/hr = 0.04 lb/hr

0.04 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.2 ton/yr

PM-10 Emissions:

Emission Factor: 12 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)

Control Efficiency: 0%

Calculations: 12.0 lb/MMscf * 0.003281 MMscf/hr = 0.04 lb/hr

0.04 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.2 ton/yr

NO_x Emissions:

Emission Factor: 100 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)
Control Efficiency: 0%
Calculations: 100.0 lb/MMscf * 0.003281 MMscf/hr = 0.3281 lb/hr
0.3281 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 1.4371 ton/yr

VOC Emissions:

Emission Factor: 2.784 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)
Control Efficiency: 0%
Calculations: 2.784 lb/MMscf * 0.003281 MMscf/hr = 0.009 lb/hr
0.009 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.04 ton/yr

CO Emissions:
Emission Factor: 21 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)
Control Efficiency: 0%
Calculations: 21.0 lb/MMscf * 0.003281 MMscf/hr = 0.0689 lb/hr
0.0689 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.30 ton/yr

SO_x Emissions:
Emission Factor: 0.6 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)
Control Efficiency: 0%
Calculations: 0.60 lb/MMscf * 0.003281 MMscf/hr = 0.002 lb/hr
0.002 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.01 ton/yr

Natural Gas Boiler #2
Maximum Fuel Combustion: 6300000 Btu/hr
Maximum Fuel Consumption: 6300000 Btu/hr * 0.001 scf/Btu * 1E-6 MMscf = 0.0063 MMscf/hr
Hours of Operation: 8760 hours/year

TSP Emissions:
Emission Factor: 12 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)
Control Efficiency: 0%
Calculations: 12.0 lb/MMscf * 0.0063 MMscf/hr = 0.08 lb/hr
0.08 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.3 ton/yr

PM-10 Emissions:
Emission Factor: 12lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)
Control Efficiency: 0%
Calculations: 12.0 lb/MMscf * 0.0063 MMscf/hr = 0.08 lb/hr
0.08 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.3 ton/yr

NO_x Emissions:
Emission Factor: 100 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)
Control Efficiency: 0%
Calculations: 100.0 lb/MMscf * 0.0063 MMscf/hr = 0.63 lb/hr
0.63 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 2.76 ton/yr

VOC Emissions:
Emission Factor: 2.784 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)
Control Efficiency: 0%
Calculations: 2.784 lb/MMscf * 0.0063 MMscf/hr = 0.018 lb/hr
0.018 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.077 ton/yr

CO Emissions:
Emission Factor: 21 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)

Control Efficiency: 0%
Calculations: 21.0 lb/MMscf * 0.0063 MMscf/hr = 0.13 lb/hr
0.13 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.58 ton/yr

SO_x Emissions:
Emission Factor: 0.6 lb/MMscf (AP-42, p. 1.4-4, Table 1.4-1, 7/93)
Control Efficiency: 0%
Calculations: 0.60 lb/MMscf * 0.0063 MMscf/hr = 0.004 lb/hr
0.004 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 0.02 ton/yr

Grain Receiving
Amount of Grain Received Annually: 97,366.80 Tons/Year (Averaged from the previous five years Emissions Inventories
Adjustment Factor: 97,366.80 * 1.2 = 116,840.16 tons/year

TSP Emissions
Emission Factor: 0.06 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.5% (Baghouse Control)
Calculations: 0.06 lb/ton * 116,840.16 ton/yr = 7,010.41 lbs/year
7,010.41 lb/yr * 0.0005 ton/lb = 3.5 ton/yr
3.5 ton/yr * (1.00 - 0.995) = 0.0175 ton/yr

PM_{10} Emissions
Emission Factor: 0.015 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.5 % (Baghouse Control)
Calculations: 0.015 lb/ton * 116,840.16 ton/yr = 1,752.60 lbs/year
1,752.60 lb/yr * 0.0005 ton/lb = 0.8763 ton/yr
0.8763 ton/yr * (1.00 - 0.995) = 0.0044 ton/yr

Grain Receiving
Amount of Grain Received Annually: 44,844.80 Tons/Year (Averaged from the previous five years Emissions Inventories)
Adjustment Factor: 44,844.80 * 1.2 = 53,813.76 ton/yr

TSP Emissions
Emission Factor: 0.06 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.5% (Baghouse Control)
Calculations: 0.06 lb/ton * 53,813.76 ton/yr = 3,228.83 lbs/year
3,228.83 lb/yr * 0.0005 ton/lb = 1.6144 ton/yr
1.6144 ton/yr * (1.00 - 0.995) = 0.0081 ton/yr

PM_{10} Emissions
Emission Factor: 0.015 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.5% (Baghouse Control)
Calculations: 0.015 lb/ton * 53,813.76 ton/yr = 807.21 lbs/year
807.21 lb/yr * 0.0005 ton/lb = 0.4036 ton/yr
0.4036 ton/yr * (1.00 - 0.995) = 0.002 ton/yr

Precleaning/Handling (47 Raw Product Bins)
Amount of Grain Received Annually: 116,724.80 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 116,724.80 * 1.2 = 140,069.76 ton/yr

TSP Emissions

Emission Factor:	0.02 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.02 lb/ton * 140,069.76 ton/yr = 2,801.40 lbs/year
	2,801.40 lb/yr * 0.0005 ton/lb = 1.4 ton/yr
	1.40 ton/yr * (1.00 - 0.995) = 0.007 ton/yr

PM_{10} Emissions

Emission Factor:	0.005 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.005 lb/ton * 140,069.76 ton/yr = 700.35 lbs/year
	700.35 lb/yr * 0.0005 ton/lb = 0.3502 ton/yr
	0.3502 ton/yr * (1.00 - 0.995) = 0.0018 ton/yr

Precleaning/Handling (28 Raw Product Bins)

Amount of Grain Received Annually: 92,803.80 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 92,803.80 * 1.2 = 111,364.56 ton/yr

TSP Emissions

Emission Factor:	0.02 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.02 lb/ton * 111,364.56 ton/yr = 2,227.29 lbs/year
	2,229.29 lb/yr * 0.0005 tons/lb = 1.1136 ton/yr
	1.1136 ton/yr * (1.00 - 0.995) = 0.0056 ton/yr

PM_{10} Emissions

Emission Factor:	0.005 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.005 lb/ton * 111,364.56 ton/yr = 556.82 lbs/year
	556.82 lb/yr * 0.0005 ton/lb = 0.2784 ton/yr
	0.2784 ton/yr * (1.00 - 0.995) = 0.0014 ton/yr

Precleaning/Handling (2 Elevator Legs, 1 Conveyor)

Amount of Grain Received Annually: 114,456.80 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 114,456.80 * 1.2 = 137,348.16 ton/yr

TSP Emissions

Emission Factor:	0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.33 lb/ton * 137,348.16 ton/yr = 45,324.89 lbs/year
	45,324.89 lb/yr * 0.0005 ton/lb = 22.66 ton/yr
	22.66 ton/yr * (1.00 - 0.995) = 0.1133 ton/yr

PM_{10} Emissions

Emission Factor:	0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.08 lb/ton * 137,348.16 ton/yr = 10,987.85 lbs/year

10,987.85 lb/yr * 0.0005 ton/lb = 5.4939 ton/yr
5.4939 ton/yr * (1.00 - 0.995) = 0.0275 ton/yr

Precleaning/Handling (2 Conveyors, 23 Bin Discharges)

Amount of Grain Received Annually: 114,456.80 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 114,456.80 * 1.2 = 137,348.16 ton/yr

TSP Emissions

Emission Factor: 0.33lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.5% (Baghouse Control)
Calculations: 0.33 lb/ton * 137,348.16 ton/yr = 45,324.89 lbs/year
45,324.89 lb/yr * 0.0005 ton/lb = 22.66 ton/yr
22.66 ton/yr * (1.00 - 0.995) = 0.1133 ton/yr

PM_{10} Emissions

Emission Factor: 0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.5% (Baghouse Control)
Calculations: 0.08 lb/ton * 137,348.16 ton/yr = 10,987.85 lbs/year
10,987.85 lb/yr * 0.0005 ton/lb = 5.4939 ton/yr
5.4939 ton/yr * (1.00 - 0.995) = 0.0275 ton/yr

Cleaning House

Amount of Grain Received Annually: 114,456.80 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 114,456.80 * 1.2 = 137,348.16 ton/yr

TSP Emissions

Emission Factor: 0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.33 lb/ton * 137,348.16 ton/yr = 45,324.89 lbs/year
45,324.89 lb/yr * 0.0005 ton/lb = 22.66 ton/yr
22.66 ton/yr * (1.00 - 0.99625) = 0.085 ton/yr

PM_{10} Emissions

Emission Factor: 0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.08 lb/ton * 137,348.16 ton/yr = 10,987.85 lbs/year
10,987.85 lb/yr * 0.0005 ton/lb = 5.4939 ton/yr
5.4939 ton/yr * (1.00 - 0.99625) = 0.0206 ton/yr

Grinding (Mill Feed)

Amount of Grain Received Annually: 43,557.60 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 43,557.60 * 1.2 = 52,269.12 ton/yr

TSP Emissions

Emission Factor: 0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.33 lb/ton * 52,269.12 ton/yr = 17,248.81 lbs/year

17,248.81 lb/yr * 0.0005 ton/lb = 8.6244 ton/yr
8.6244 ton/yr * (1.00 - 0.99625) = 0.0328 ton/yr

PM_{10} Emissions

Emission Factor:	0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.625% (Baghouse Control)
Calculations:	0.08 lb/ton * 52,268.12 ton/yr = 4,181.53 lbs/year
	4,181.53 lb/yr * 0.0005 ton/lb = 2.0908 ton/yr
	2.0908 ton/yr * (1.00 - 0.99625) = 0.0079 ton/yr

Millfeed Bin

Amount of Grain Received Annually: 111,945.60 Tons/Year (Averaged from the previous five years Emissions Inventories)
Adjustment Factor: 111,945.60 * 1.2 = 134,334.72 ton/yr

TSP Emissions

Emission Factor:	0.33lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.33 lb/ton * 134,334.72 ton/yr = 44,330.46 lbs/year
	44,330.46 lb/yr * 0.0005 ton/lb = 22.17 ton/yr
	22.17 ton/yr * (1.00 - 0.995) = 0.1108 ton/yr

PM_{10} Emissions

Emission Factor:	0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.08 lb/ton * 134,334.72 ton/yr = 10,746.78 lbs/year
	10,746.78 lb/yr * 0.0005 ton/lb = 5.3734 ton/yr
	5.3734 ton/yr * (1.00 - 0.995) = 0.0269 ton/yr

Millfeed Truck Loadout

Amount of Grain Received Annually: 101,399.60 Tons/Year (Averaged from the previous five years Emissions Inventories)
Adjustment Factor: 101,399.60 * 1.2 = 121,679.52 ton/yr

TSP Emissions

Emission Factor:	0.011 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.011 lb/ton * 121,679.52 ton/yr = 1,338.47 lbs/year
	1,338.47 lb/yr * 0.0005 ton/lb = 0.6692 ton/yr
	0.6692 ton/yr * (1.00 - 0.995) = 0.0033 ton/yr

PM_{10} Emissions

Emission Factor:	0.003 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.003 lb/ton * 121,679.52 ton/yr = 365.04 lbs/year
	365.04 lb/yr * 0.0005 ton/lb = 0.1825 ton/yr
	0.1825 ton/yr * (1.00 - 0.995) = 0.0009 ton/yr

Precleaning/Handling (10 Tempering Bins)

Amount of Grain Received Annually: 111,945.60 Tons/Year (Averaged from the previous five years Emissions Inventories)
Adjustment Factor: 111,945.60 * 1.2 = 134,334.72 ton/yr

TSP Emissions

Emission Factor:	0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.625% (Baghouse Control)
Calculations:	0.33 lb/ton * 134,334.72 ton/yr = 44,330.46 lbs/year
	44,330.46 lb/yr * 0.0005 ton/lb = 22.17 ton/yr
	22.17 ton/yr * (1.00 - 0.99625) = 0.0842 ton/yr

PM_{10} Emissions

Emission Factor:	0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.625% (Baghouse Control)
Calculations:	0.08 lb/ton * 134,334.72 ton/yr = 10,746.78 lbs/year
	10,746.78 lb/yr * 0.0005 ton/lb = 5.3734 ton/yr
	5.3734 ton/yr * (1.00 - 0.99625) = 0.0204 ton/yr

Precleaning/Handling (Pneumatic Conveyors to Sifters)

Amount of Grain Received Annually: 74,747.20 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 74,747.20 * 1.2 = 89,696.64 ton/yr

TSP Emissions

Emission Factor:	0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.625% (Baghouse Control)
Calculations:	0.33 lb/ton * 89,696.64 ton/yr = 29,599.89 lbs/year
	29,599.89 lb/yr * 0.0005 ton/lb = 14.8 ton/yr
	14.80 ton/yr * (1.00 - 0.99625) = 0.056 ton/yr

PM_{10} Emissions

Emission Factor:	0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.625% (Baghouse Control)
Calculations:	0.08 lb/ton * 89696.64 ton/yr = 7,175.73 lbs/year
	7,175.73 lb/yr * 0.0005 ton/lb = 3.59 ton/yr
	3.59 ton/yr * (1.00 - 0.99625) = 0.0136 ton/yr

Precleaning/Handling (Sifters/Purifiers)

Amount of Grain Received Annually: 84,914.80 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 84,914.80 * 1.2 = 101,897.76 ton/yr

TSP Emissions

Emission Factor:	0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5%(Baghouse Control)
Calculations:	0.33 lb/ton * 101,897.76 ton/yr = 33,626.26 lbs/year
	33,626.26 lb/yr * 0.0005 ton/lb = 16.81 ton/yr
	16.81 ton/yr * (1.00 - 0.995) = 0.0841 ton/yr

PM_{10} Emissions

Emission Factor:	0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency:	99.5% (Baghouse Control)
Calculations:	0.08 lb/ton * 101,897.76 ton/yr = 8,151.82 lbs/year

8,151.82 lb/yr * 0.0005 ton/lb = 4.0759 ton/yr
4.0759 ton/yr * (1.00 - 0.995) = 0.0204 ton/yr

Precleaning/Handling (Wheat Germ Bagger)

Amount of Grain Received Annually: 101,971.60 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 101,971.60 * 1.2 = 122,365.92 ton/yr

TSP Emissions

Emission Factor: 0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control
Calculations: 0.33 lb/ton * 122,365.92 ton/yr = 40,380.75 lbs/year
40,380.75 lb/yr * 0.0005 ton/lb = 20.19 ton/yr
20.19 ton/yr * (1.00 - 0.99625) = 0.0767 ton/yr

PM_{10} Emissions

Emission Factor: 0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.08 lb/ton * 122,365.92 ton/yr = 9,789.27 lbs/year
9,789.27 lb/yr * 0.0005 ton/lb = 4.8946 ton/yr
4.8946 ton/yr * (1.00 - 0.99625) = 0.0186 ton/yr

Precleaning/Handling (25 Roll Stands)

Amount of Grain Received Annually: 77,780.80 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 77,780.80 * 1.2 = 93,336.96 ton/yr

TSP Emissions

Emission Factor: 0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.33 lb/ton * 93,336.96 ton/yr = 30,801.20 lbs/year
30,801.20 lb/yr * 0.0005 ton/lb = 15.4 ton/yr
15.40 ton/yr * (1.00 - 0.99625) = 0.0585 ton/yr

PM_{10} Emissions

Emission Factor: 0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.08 lb/ton * 93,336.96 ton/yr = 7,466.96 lbs/year
7,446.96 lb/yr * 0.0005 ton/lb = 3.73 ton/yr
3.73 ton/yr * (1.00 - 0.99625) = 0.0142 ton/yr

Precleaning/Handling (Flour Packer/Packaging/Pallet Loading)

Amount of Grain Received Annually: 74,996.00 Tons/Year (Averaged from the previous five years Emissions Inventories)

Adjustment Factor: 74,996.00 * 1.2 = 89,995.20 ton/yr

TSP Emissions

Emission Factor: 0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625%(Baghouse Control)
Calculations: 0.33 lb/ton * 89,995.20 ton/yr = 29,698.42 lbs/year
29,698.42 lb/yr * 0.0005 ton/lb = 14.85 ton/yr

14.85 ton/yr * (1.00 - 0.99625) = 0.0564 ton/yr

PM_{10} Emissions

Emission Factor: 0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.08 lb/ton * 89,995.20 ton/yr = 7,199.62 lbs/year
7,199.62 lb/yr * 0.0005 ton/lb = 3.6 ton/yr
3.60 ton/yr * (1.00 - 0.99625) = 0.0137 ton/yr

Paved Roads

Vehicle Miles Traveled: 2.27 Vehicle Miles Traveled (Estimate from Jeff Shapiro of General Mills Operations, Inc.)
Days of Operation: 247 days/yr (Estimate from Jeff Shapiro of General Mills Operations, Inc.)
Control Efficiency: 50% (Watering/Sweeping)

TSP Emissions:

(Assume a low silt loading & moderate dust loading for transporting grain products)
Number of Lanes (n): 2
Silt Loading (s): 6% (Estimate from AP-42, p. 11.2.6-3, 9/88)
Dust Loading (L): 1500lb/mile (Estimate from AP-42, p. 11.2.6-3, 9/88)
Vehicle Weight (W): 21 tons (Estimate from Jeff Shapiro)
Equation: 0.077 * (4/n)*(s/10)*(L/1000)*(W/3)^0.7 = lb/VMT (AP-42, p. 11.2.6-3, 9/88)
Calculation: 0.077 * (4 / 2) * (6 / 10) * (1500 / 1000) * (21 / 3)^0.7 = 0.5 lb/VMT
0.5 lb/VMT * 2.27 VMT/day * 247 day/yr * 0.0005 ton/lb = 0.2 ton/yr
0.1 ton/yr * (1 - 0.50) = 0.08 ton/yr

PM_{10} Emissions:

Silt Loading(s): 0.07 oz/yd^2 (Estimate from AP-42, p. 11.2.6-3, 9/88)
Equation: 0.22 * 3.5 *(s/0.35)^0.3 = lb/VMT (AP-42, 11.2.6-4, 9/88)
Calculation: 0.22 * 3.5 * (0.1 oz/yd^2 / 0.35)^0.3 = 0.5 lb/VMT
0.5 lb/VMT * 2.27 VMT/day * 247 day/yr *0.0005 ton/lb = 0.1 ton/yr
0.1 ton/yr * (1 - 0.50) = 0.07 ton/yr

Durum Cleaning House

Process Rate: 670 bu/hr (Maximum Design)
Conversion: 60 lb/bu (AP-42, Supplement F, p. A-24)
670 bu/hr * 60 lb/bu * 0.0005 ton/lb = 20.1 ton/hr
Hours of Operation: 8760 hr/yr

TSP Emissions

Emission Factor: 0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.5% (Baghouse Control)
Calculations: 0.33 lb/ton * 20.1 ton/hr = 6.63 lb/hr
6.63 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 29.05 ton/yr
29.05 ton/yr * (1.00 - 0.995) = 0.1453 ton/yr

PM_{10} Emissions

Emission Factor: 0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.5% (Baghouse Control)
Calculations: 0.08 lb/ton * 20.1 tons/hr = 1.61 lb/hr
1.61 lb/hr * 8760 hr/yr * 0.0005 ton/hr = 7.04 ton/yr

7.04 ton/yr * (1.00 - 0.995) = 0.0352 ton/yr

Grinding (Durum Mill)

Process Rate: 3,000.00 cwt/day
Conversion: 100.00 lb/cwt
3,000 cwt/day * 100 lb/cwt * 0.0005 ton/lb / 24 hours/day = 6.25 ton/hr
Hours of Operation: 8,760.00 hr/yr

TSP Emissions

Emission Factor: 0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.5% (Baghouse Control)

Calculations: 0.33 lb/ton * 6.25 ton/hr = 2.0625 lb/hr
2.0625 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 9.0338 ton/yr
9.0338 ton/yr * (1.00 - 0.995) = 0.0452 ton/yr

PM_{10} Emissions

Emission Factor: 0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.5% (Baghouse Control)
Calculations: 0.08 lb/ton * 6.25 ton/hr = 0.5 lb/hr
0.50 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 2.19 ton/yr
2.19 ton/yr * (1.00 - 0.995) = 0.011 ton/yr

Precleaning/Handling (Sifters/Purifiers)
Process Rate: 3,000.00 cwt/day
Conversion: 100.00 lb/cwt
3,000 cwt/day * 100 lb/cwt * 0.0005 ton/lb / 24 hours/day = 6.25 ton/hr
Hours of Operation: 8,760.00 hr/yr

TSP Emissions

Emission Factor: 0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.33 lb/ton * 6.25 ton/hr = 2.0625 lb/hr
2.0625 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 9.0338 ton/yr
9.0338 ton/yr * (1.00 - 0.99625) = 0.0343 ton/yr

PM_{10} Emissions

Emission Factor: 0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.08 lb/ton * 6.25 ton/hr = 0.5 lb/hr
0.50 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 2.19 ton/yr
2.19 ton/yr * (1.00 - 0.99625) = 0.0083 ton/yr

Product Storage (Bulkhouse)
Process Rate: 3,000.00 cwt/day
Conversion: 100.00 lb/cwt
3,000 cwt/day * 100 lb/cwt * 0.0005 ton/lb / 24 hours/day = 6.25 ton/hr
Hours of Operation: 8,760.00 hr/yr

TSP Emissions

Emission Factor: 0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.33 lb/ton * 6.25 ton/hr = 2.0625 lb/hr
2.0625 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 9.0338 ton/yr

9.0338 ton/yr * (1.00 - 0.99625) = 0.0343 ton/yr

PM_{10} Emissions

Emission Factor: 0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.08 lb/ton * 6.25 ton/hr = 0.5 lb/hr
0.50 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 2.19 ton/yr
2.19 ton/yr * (1.00 - 0.99625) = 0.0083 ton/yr

Warehouse (Product Storage)
Process Rate: 3,000.00 cwt/day
Conversion: 100.00 lb/cwt
3,000 cwt/day * 100 lb/cwt * 0.0005 ton/lb / 24 hours/day = 6.25 ton/hr
Hours of Operation: 8,760.00hr/yr

TSP Emissions

Emission Factor: 0.33 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.33 lb/ton * 6.25 ton/hr = 2.0625 lb/hr
2.0625 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 9.0338 ton/yr
9.0338 ton/yr * (1.00 - 0.99625) = 0.0343 ton/yr

PM_{10} Emissions

Emission Factor: 0.08 lb/ton (AP-42, Table 9.9.1-2, 11/95)
Control Efficiency: 99.625% (Baghouse Control)
Calculations: 0.08 lb/ton * 6.25 ton/hr = 0.5 lb/hr
0.50 lb/hr * 8760 hr/yr * 0.0005 ton/lb = 2.19 ton/yr
2.19 ton/yr * (1.00 - 0.99625) = 0.0083 ton/yr

IV. BACT Analysis

A BACT determination is required for any new or altered source. General Mills shall install on the new or altered source the maximum air pollution control capability, which is technologically practicable and economically feasible, except that Best Available Control Technology shall be used. A BACT analysis was not required for the current permit action.

V. Existing Air Quality

In the view of the Department, the amount of controlled emissions from this facility will cause minimal air quality impacts. There are no emissions of toxic air pollutants from the new sources at this facility. Therefore, the Department does not believe this source will cause or contribute to a violation of any ambient standard.

VI. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VII. Environmental Assessment

An environmental assessment was not required for the current permit action because the action is a minor modification.

Analysis prepared by: Julie Merkel
Date: November 21, 2002