



State of Idaho
Department of Environmental Quality
Air Quality Division

**AIR QUALITY PERMIT
STATEMENT OF BASIS**

Permit to Construct No. P-2008.0050

Final

High Desert Milk, Inc.

High Desert Milk Plant

Burley, Idaho

Facility ID No. 031-00034

June 3, 2008

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Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01 et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

Table of Contents

ACRONYMS, UNITS AND CHEMICAL NOMENCLATURE	3
1. FACILITY INFORMATION	4
2. APPLICATION SCOPE AND APPLICATION CHRONOLOGY	4
3. TECHNICAL ANALYSIS	5
4. REGULATORY REVIEW	8
5. PERMIT FEES	18
6. PUBLIC COMMENT	18
APPENDIX A – AIRS INFORMATION	
APPENDIX B – INCREASE IN EMISSIONS INVENTORY	
APPENDIX C – MODELING ANALYSIS	
APPENDIX D – FACILITY-WIDE EMISSIONS INVENTORY	

Acronyms, Units and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
ASTM	American Society for Testing and Materials
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
HAP	hazardous air pollutants
HP	horsepower
hr/yr	hours per consecutive 12-calendar month period
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometers
lb/hr	pounds per hour
m	meters
MACT	Maximum Achievable Control Technology
MMBtu/hr	million British thermal units per hour
NAICS	North American Industry Classification System
NMHC	nonmethane hydrocarbons
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO ₂	nitrogen dioxide
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PM	particulate matter
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	permit to construct
MMscf	million standard cubic feet
SIC	Standard Industrial Classification
SM	Synthetic Minor
SO ₂	sulfur dioxide
SO _x	sulfur oxides
TAP	toxic air pollutants
T/yr	tons per year
µg/m ³	micrograms per cubic meter
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. FACILITY INFORMATION

1.1 Facility Description

The facility produces sweet cream, skim milk, and dry milk from raw milk. The facility processes up to 2.5 million pounds of milk per day.

1.2 Permitting Action and Facility Permitting History

This permit to construct (PTC) is for a minor modification at an existing synthetic minor facility. The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

November 7, 2007 Permit to Construct No. P-2007.0100 was issued for a new milk processing facility. (S)

2. APPLICATION SCOPE AND APPLICATION CHRONOLOGY

2.1 Application Scope

This permit to construct is a modification for the replacement of the diesel-fired emergency generator and the natural gas-fired boilers with alternate equipment. The capacity of the emergency generator has been increased to 1,490 HP (from 755 HP), and the capacity of each boiler has been reduced to 33.48 MMBtu/hr (from 62.77 MMBtu/hr). No other modifications have been proposed.

2.2 Application Chronology

April 5, 2008	DEQ received a PTC application and \$1,000 application fee.
May 1, 2008	DEQ determined the application complete.
May 1 through May 15, 2008	Opportunity for a public comment period was held. No comment or request for a public comment period was received.
May 2, 2008	Draft permit and statement of basis was sent for peer and Boise Regional Office (BRO) review.
May 6, 2007	Draft permit and statement of basis were sent for facility review.
May 29, 2008	\$1,000 PTC processing fee was received.
June 3, 2008	Final permit and statement of basis were issued.

3. TECHNICAL ANALYSIS

3.1 Emission Units and Control Devices

Table 3.1 SUMMARY OF REGULATED SOURCES

Source Description	Emissions Controls
<p><u>Skim Milk Dryer</u> Emissions Unit Name: Skim Milk Dryer (P101) Manufacturer: Dryer: C/E/Rogers Burner: Maxon Model: Crossfire Low NO_x Line Burner Max Capacity: 32.5 MMBtu/hr Operation: 8,760 hr/yr</p>	<p>Baghouses (P101A & P101B)</p>
<p><u>Natural Gas Boilers</u> Emissions Unit Name: Boiler No. 1 (P104) Max Capacity: 33.48 MMBtu/hr Fuel: Natural Gas Operation: 8,760 hr/yr</p> <p>Emissions Unit name: Boiler No. 2 (P105) Max Capacity: 33.48 MMBtu/hr Fuel: Natural Gas Operation: 8,760 hr/yr</p>	<p>None</p>
<p><u>Fluid-bed and Powder Handling</u> <u>Fluid-bed</u> Manufacturer: C/E/Rogers Max Capacity: 9,000 lb/hr</p> <p><u>Powder Handling</u> Manufacturer: C/E/Rogers</p>	<p><u>Fluid-bed Baghouse (P102)</u> Manufacturer: C/E/Rogers Model: Fluid-bed Baghouse Control Efficiency: PM/PM₁₀: 99.93%</p> <p><u>Powder Handling Baghouse (P103A & P103B)</u> Manufacturer: C/E/Rogers Model: Powder Handling Baghouse Control Efficiency: PM/PM₁₀: 98.4 %</p>
<p><u>Emergency Generator</u> Manufacturer: Cummins Maximum Capacity: 1490 HP Maximum Operation: 500 hr/yr Displacement: 2.55 liters/cylinder Ignition: Compression</p>	<p>None</p>

3.2 Emissions Inventory

An increase in emissions inventory and a facility-wide emissions inventory of federally regulated hazardous air pollutants (HAP) and state regulated toxic air pollutants (TAP) were provided in the PTC application. The emissions inventories have been reviewed by DEQ and appear to accurately reflect the potential emissions from the facility.

A summary of the controlled emissions increase associated with the replacement boilers and emergency generator project is provided in Table 3.2.

Table 3.2 EMISSIONS ESTIMATES OF CRITERIA POLLUTANTS – INCREASE IN CONTROLLED EMISSIONS

Emissions Unit	PM ₁₀		SO ₂		NO _x		CO		VOC		LEAD
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/quarter
Boiler No. 1	-0.21	-0.90	-0.02	-0.07	-2.81	-12.30	-2.36	-10.32	-0.15	-0.70	-0.03
Boiler No. 2	-0.21	-0.90	-0.02	-0.07	-2.81	-12.30	-2.36	-10.32	-0.15	-0.70	-0.03
Emergency Generator ¹	0.11	0.03	0.02	0.01	5.31	1.33	-2.42	-0.61			
Total		-1.77		-0.13		-23.27		-21.25		-1.4	-0.06

¹The emission rate for SO_x from the emergency generator was calculated using an emission factor from AP-42 chapter 3.4 "Large Stationary Diesel and All Stationary Dual-Fuel Engines" assuming a fuel sulfur content of 500 ppm (0.05%). Emission rates for all other criteria pollutants are based on manufacturer's specifications for QST30-G5 Nonroad 2 engine with nameplate rating of 1490 HP. Emergency generator ton/yr values estimated based on 500 hours of operation.

Criteria pollutant emissions from the new and existing boilers were estimated using AP-42 Section 1.4 emission factors for natural gas combustion. Emissions from the new emergency generator were estimated using emission factors developed from information provided by the manufacturer, and emissions from the existing emergency generator were estimated using AP-42 Section 1.3 emission factors.

For the emergency generator, 500 hours of annual operation was assumed to be an appropriate default assumption for estimating potential to emit, assuming that the sole function of the emergency generator is to provide back-up power when electric power from the local utility is interrupted. For the purposes of estimating SO₂ emissions from the diesel-fired emergency generator, it was assumed that only diesel fuel with a sulfur content of 500 ppm would be used, as required by Permit Condition 5.8.

Emissions of HAP and TAP were estimated based on AP-42 Section 1.4 emission factors for the combustion of natural gas in the boilers and Section 3.4 for the combustion of diesel fuel in the emergency generator. The emission increases of all TAP were below the applicable screening emissions levels. TAP emissions are inherently limited based on the maximum capacity of the boilers and the emergency generator (and the operational restriction of the emergency generator to emergency use). Therefore no additional operational or TAP specific limits were required in accordance with IDAPA 58.01.01.210.08.c. The emissions inventory for this facility is included in Appendix B.

Facility-wide controlled emissions of criteria pollutants are provided in Table 3.3 .

Table 3.3 EMISSIONS ESTIMATES OF CRITERIA POLLUTANTS – CONTROLLED EMISSIONS

Emissions Unit	PM ₁₀		SO ₂		NO _x		CO		VOC		LEAD
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	Lb/quarter
Milk Dryer	10.56	46.22	0.02	0.08	1.46	6.42	11.90	52.20	0.18	0.76	0.01
Fluid-Bed	1.08	4.73									
Powder Storage	0.12	0.50									
Boiler No. 1	0.25	1.10	0.02	0.09	3.35	14.67	2.81	12.31	0.18	0.79	0.04
Boiler No. 2	0.25	1.10	0.02	0.09	3.35	14.67	2.81	12.31	0.18	0.79	0.04
Emergency Generator ¹	0.36	0.09	0.33	0.08	13.30	3.33	1.90	0.48			
Total		53.74		0.34		39.09		77.30		2.34	0.09

The emission rate for SO_x from the emergency generator was calculated using an emission factor from AP-42 chapter 3.4 "Large Stationary Diesel and All Stationary Dual-Fuel Engines" assuming a fuel sulfur content of 500 ppm (0.05%). Emission rates for all other criteria pollutants are based on manufacturer's specifications for QST30-G5 Nonroad 2 engine with nameplate rating of 1490 HP. Emergency generator ton/yr values estimated based on 500 hours of operation.

3.3 Ambient Air Quality Impact Analysis

Modeling analysis for this project was included in the application to demonstrate preconstruction compliance with ambient air quality standards resulting from the increase in criteria pollutant emissions (Table 3.2) above published DEQ modeling thresholds¹. A summary of the modeling analysis results is provided in Table 3.4. The emission increases of all TAP were below the applicable screening emissions levels in IDAPA 58.01.01.585-586.

Table 3.4 IMPACT ANALYSIS RESULTS FOR CRITERIA POLLUTANTS – INCREASE IN CONTROLLED EMISSIONS

Pollutant	Averaging Period	Maximum Predicted Ambient Impact (µg/m ³) ¹	Significant Contribution Level (µg/m ³)	Significant Contribution?
PM ₁₀	24-hour	4.94	5	No
	Annual	0.055	1	No
NO ₂	Annual	2.72	1	Yes

The estimated increase in the NO₂ ambient impact from the requested modifications was above the significance level for the annual standard. In accordance with DEQ modeling guidance, facility-wide modeling for NO₂ emissions was completed. Table 3.5 shows the impact analysis of the combined emissions from the dryer, boilers, and emergency generator for NO₂ and PM₁₀ emissions.

Table 3.5 FULL IMPACT ANALYSIS RESULTS FOR FACILITY-WIDE PM₁₀ and NO₂ EMISSIONS

Pollutant	Averaging Period	Facility Ambient Impact (µg/m ³)	Background Concentration (µg/m ³)	Total Ambient Concentration (µg/m ³)	NAAQS (µg/m ³)	Percent of NAAQS
PM ₁₀	24-hour	68.0	76	144	150	96.0%
	Annual	19.7	27	46.7	50	93.4%
NO ₂	Annual	29.2	32	61.2	100	61.2%

The facility has demonstrated compliance to DEQ's satisfaction that emissions from this modification will not cause or significantly contribute to a violation of any ambient air quality standard. The facility has also demonstrated compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any applicable screening emissions levels for any toxic air pollutants. A summary of the modeling analysis included in the application is provided in Appendix C.

¹ Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002.

4. REGULATORY REVIEW

4.1 Attainment Designation (40 CFR 81.313)

The facility is located in Bingham County, which is designated unclassifiable for PM₁₀, PM_{2.5}, CO, NO₂, SO_x, and Ozone.

Information regarding the geographical location of nonattainment areas in Idaho can be found at: http://www.deq.idaho.gov/air/data_reports/monitoring/overview.cfm#AttvNon

4.2 Permit to Construct (IDAPA 58.01.01.201)

The application was submitted as a modification to a permit to construct in accordance with IDAPA 58.01.01.202, and will be processed according to the procedures in IDAPA 58.01.01.200-228.

4.3 Tier II Operating Permit (IDAPA 58.01.01.401)

The procedures of IDAPA 58.01.01.400-410 are not applicable to this permitting action.

4.4 Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

The facility is classified as a synthetic minor facility because without limits on the potential to emit, it was determined that PM₁₀ emissions have the potential to exceed major source thresholds. The facility is not classified as a major facility for Tier I permitting purposes, as defined in IDAPA 58.01.01.008.10. The facility is not a designated facility, as defined in IDAPA 58.01.01.006.30.

The use of add-on baghouse control devices, process throughput limits, and PM₁₀ emissions limits are considered synthetic minor limits used to demonstrate compliance with the major source threshold of PM₁₀.

The maximum capacity of the boilers will be reduced from 62.77 MMBtu/hr to 33.48 MMBtu/hr as a result of this project. As a result, the facility will no longer be classified as synthetic minor for CO emissions and CO emission rate limits are no longer required in order to demonstrate compliance with the major source threshold for CO.

4.5 PSD Classification (40 CFR 52.21)

The facility is classified as a synthetic minor facility for the purposes of PSD, because without limits on the potential to emit, PM₁₀ emissions have the potential to exceed the PSD major source threshold. This was determined based upon the control device efficiencies included in the application for the Fluid-Bed Baghouse (99.93%), Powder Handling Baghouse (98.4%), and the Dryer Baghouses (92% each).

The proposed modifications do not exceed the major source threshold and are not applicable to PSD in accordance with 40 CFR 52.21(b)(1)(i)(c).

4.6 NSPS Applicability (40 CFR 60)

The replacement generator is subject to the requirements of 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, and the replacement boilers are subject to 40 CFR 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

Subpart Dc

40 CFR 60, Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

40 CFR 60.40c..... Applicability and delegation of authority

Boiler No. 1 and Boiler No. 2 are affected facilities in accordance with §60.40c(a), because construction of the boilers commenced after June 9, 1989, and because the maximum design heat input capacity for each boiler is between 10 and 100 MMBtu/hr (33.48 MMBtu/hr for each boiler).

40 CFR 60.41c..... Definitions

This section contains the definitions of this subpart.

40 CFR 60.42c..... Standard for sulfur dioxide (SO₂)

The boilers use natural gas, which is not identified in this section as a regulated fuel subject to SO₂ standards.

40 CFR 60.43c..... Standards for particulate matter (PM)

The boilers use natural gas, which is not identified in this section as a regulated fuel subject to PM or opacity standards.

40 CFR 60.44c..... Compliance and performance test methods and procedures for sulfur dioxide

The boilers use natural gas, which is not identified in this section as a regulated fuel subject to SO₂ standards.

40 CFR 60.45c..... Compliance and performance test methods and procedures for particulate matter

The boilers use natural gas, which is not identified in this section as a regulated fuel subject to PM or opacity standards.

40 CFR 60.46c..... Emission monitoring for sulfur dioxide

The boilers use natural gas, which is not identified in this section as a regulated fuel subject to SO₂ standards.

40 CFR 60.47c..... Emission monitoring for particulate matter

The boilers use natural gas, which is not identified in this section as a regulated fuel subject to PM or opacity standards.

40 CFR 60.48c..... Reporting and recordkeeping requirement

The boilers use natural gas, which is not identified in this section as a regulated fuel subject to SO₂, PM, or opacity standards. In accordance with §60.48c(a), the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by §60.7. Permit Condition 3.8 includes the requirements of this section.

In accordance with §60.48c(g)(3), as an alternative to meeting the requirements of (g)(1) of this section, the owner or operator of multiple affected facilities (both boilers) located on a contiguous property unit where the only fuels combusted at that property are natural gas not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month. Permit Condition 3.8

includes the requirements of this section. After review of the draft permit, the permittee requested the use of this recordkeeping and monitoring option.

In accordance with §60.48c(i), all records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. Permit Condition 3.8 includes the requirements of this section.

In accordance with 40 CFR 60.48c(j), the reporting period for any reports required pursuant to this subpart is each six-month period. Permit Condition 3.8 includes the requirements of this section.

Subpart III

40 CFR 60, Subpart III..... Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

40 CFR 60.4200 Am I subject to this subpart?

In accordance with §60.4200(a)(2)(i), the facility is subject to this subpart because the permittee will operate a stationary compression ignition (CI) internal combustion engine (ICE) that will commence construction after July 11, 2005 and was manufactured after April 1, 2006.

40 CFR 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?

The facility is not a stationary CI ICE manufacturer, so the requirements of §60.4201 are not applicable.

40 CFR 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?

The facility is not a stationary CI ICE manufacturer, so the requirements of §60.4202 are not applicable.

40 CFR 60.4203 How long must I meet the emission standards if I am a stationary CI internal combustion engine manufacturer?

The facility is not a stationary CI ICE manufacturer, so the requirements of §60.4203 are not applicable.

40 CFR 60.4204 What emission standards must I meet for non-emergency engines if I am an owner operator of a stationary CI internal combustion engine?

The permittee is not operating a non-emergency stationary CI ICE, so the requirements of §60.4204 are not applicable.

40 CFR 60.4205 What emission standards must I meet for emergency engines if I am an owner operator of a stationary CI internal combustion engine?

Because the emergency generator is model year 2007 or later with a displacement of less than 30 liters per cylinder (30.5 liters/12 cylinders=2.55 liters/cylinder), and is not a fire pump engine, the permittee shall comply with the emission standards for new nonroad CI engines in §60.4202 for all pollutants, in accordance with §60.4205(b).

The emission standards of §89.112 and §89.113 apply to an emergency generator with a maximum engine power between 50 HP and 3,000 HP, and a displacement of less than 10 liters per cylinder, in accordance with §60.4202(a)(2).

The exhaust emission standards in §89.112 for kW>560 (Tier 2) and the Cummins Exhaust Emission Compliance Statement provided in the application (refer to Appendix B) for the emergency generator are as follows:

Nonroad engines >750 HP (Tier 2)	NMHC+NO _x (g/HP-hr)	CO (g/HP-hr)	PM (g/HP-hr)
Table 1 of 40 CFR 89.112	4.77	2.61	0.15
Compliance Statement	4.77	2.61	0.15

The smoke emission standards in §89.113 include opacity limits for the emergency generator during acceleration and lugging modes, and the methods of measurement.

The exhaust and smoke emission standards are included in Permit Condition 5.4.

40 CFR 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

In accordance with §60.4206, the permittee shall operate and maintain stationary CI ICE that achieve the emission standards as required in §60.4205 according to the manufacturer's written instructions, over the life of the engine. Permit condition 5.4 includes the requirements of this section.

40 CFR 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

In accordance with §60.4207(a), the permittee shall use diesel fuel that meets the requirements of 40 CFR 80.510(a).

In accordance with §60.4207(b), beginning October 1, 2010, the permittee shall use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.

The diesel fuel requirements are included in Permit Condition 5.8.

40 CFR 60.4208 What is the deadline for importing or installing stationary CI ICE produced in the previous year?

In accordance with §60.4208 and the dates provided, the permittee shall not install or import an emergency generator that does not meet the applicable emission standards of Subpart III. Permit condition 5.7 includes the requirements of this section.

40 CFR 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

In accordance with §60.4209(a), the permittee shall install a non-resettable hour meter prior to startup of the engine. Permit condition 5.10 includes the requirements of this section.

40 CFR 60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?

The facility is not a stationary CI ICE manufacturer, so the requirements of §60.4210 are not applicable.

40 CFR 60.4211 What are my compliance requirements if I am an owner operator of a stationary CI internal combustion engine?

In accordance with 60.4211(a), the emergency generator shall be operated according to the manufacturer's written instructions. In addition, the permittee shall only change those settings that are permitted by the manufacturer. Permit condition 5.10 includes the requirements of this section.

In accordance with 60.4211(c), because the emergency generator is model year 2007 or later, and is subject to the emission standards specified in §60.4205(b), the permittee shall comply by purchasing an engine certified to the emission standards in §60.4205(b) and installing and configuring the engine according to the manufacturer's specifications. Permit condition 5.10 includes the requirements of this section.

In accordance with 60.4211(e), the emergency generator may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. Because the emergency generator is meeting the requirements of 40 CFR 60.4205 but not 60.4204, any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited. Permit condition 5.10 includes the requirements of this section.

40 CFR 60.4212 What test methods and other procedures must I use if I'm an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (d) of this section, in accordance with §60.4214. Permit condition 5.13 includes the requirements of this section.

40 CFR 60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder?

Because the emergency generator has a displacement of less than 30 liters per cylinder, the requirements of §60.4213 are not applicable.

40 CFR 60.4214 What are my notifications, reporting, and recordkeeping requirements if I am and owner or operator of a stationary CI internal combustion engine?

In accordance with 60.4214(b), because the stationary CI ICE is an emergency stationary ICE, the permittee is not required to submit an initial notification. Because the model year of the emergency generator is before 2011, additional recordkeeping requirements are not applicable.

40 CFR 60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?

These requirements do not apply to this facility because the facility is not located in the specified locations.

40 CFR 60.4216 What requirements must I meet for engines used in Alaska?

These requirements do not apply to this facility because the facility is not located in the specified location.

40 CFR 60.4217 What requirements must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?

These requirements do not apply to this facility because diesel fuel will be used in the emergency generator, and the use of special fuels has not been requested.

40 CFR 60.4218 What part of the general provisions apply to me?

General provisions apply to this facility as specified in 40 CFR 60, Subpart III.

40 CFR 60.4219 What definitions apply to this subpart?

This section contains the definitions and supporting tables for this subpart.

Table 8 to Subpart III of Part 60—Applicability of General Provisions to Subpart III identifies the requirements of Subpart A which are applicable to this facility.

4.7 NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP.

4.8 MACT Applicability (40 CFR 63)

The facility does not belong to any of the specific source categories regulated by 40 CFR 63, and was previously determined to be below the major source thresholds of 10 tons/yr for each HAP and 25 tons/yr for any combination of HAP. This modification results in an overall decrease in facility-wide HAP emissions. The facility is therefore not subject to MACT requirements.

4.9 CAM Applicability (40 CFR 64)

The facility is a synthetic minor facility for purposes of Title V, and is therefore not subject to CAM requirements. Refer to Section 4.4 for further discussion regarding the synthetic minor classification.

4.10 Permit Conditions Review

This section describes only those permit conditions that have been added, revised, modified, or deleted as a result of this permitting action. All other permit conditions remain unchanged.

Replaced Permit Condition 1.1 and added Permit Condition 1.2

This permit to construct is a modification to replace the diesel-fired emergency generator and the natural gas-fired boilers with alternate equipment.

This permit to construct replaces the following permit, the terms and conditions of which shall no longer apply:

- Permit to Construct No. P-2007.0100, issued November 7, 2007

Existing Permit Condition 1.2

Table 1.1 lists all sources of regulated emissions in this PTC.

Table 1.1 SUMMARY OF REGULATED SOURCES

Permit Section	Source Description	Emissions Controls
2	Skim Milk Dryer Emissions Unit Name: Skim Milk Dryer (P101) Manufacturer: Dryer: C/E/Rogers Burner: Maxon Model: Crossfire Low NO _x Line Burner Max Capacity: 32.5 MMBtu/hr Operation: 8,760 hrs/yr	Baghouses (P101A & P101B)
3	Natural Gas Boilers Emissions Unit Name: Boiler No. 1 (P104) Max Capacity: 62.77 MMBtu/hr Fuel: Natural Gas	None

	<p>Operation: 8, 760 hrs/yr Emissions Unit name: Boiler No. 2 (P105) Max Capacity: 62.77 MMBtu/hr Fuel: Natural Gas Operation: 8,760 hrs/yr</p>	
4	<p>Fluid-bed and Powder Handling <u>Fluid-bed</u> Manufacturer: C/E/Rogers Max Capacity: 9,000 lb/hr</p> <p><u>Powder Handling</u> Manufacturer: C/E/Rogers</p>	<p>- <u>Fluid-bed Baghouse</u> (P102) Manufacturer: C/E/Rogers Model: Fluid-bed Baghouse Control Efficiency: PM/PM₁₀: 99.93%</p> <p>- <u>Powder Handling Baghouse</u> (P103A & P103B) Manufacturer: C/E/Rogers Model: Powder Handling Baghouse Control Efficiency: PM/PM₁₀: 98.4 %</p>
5	<p>Emergency Generator Manufacturer: Cummins Max Capacity: 755 HP Max Operation: 500 hrs/yr Displacement: 2.5 liters/cylinder Ignition: Compression</p>	None

Modified and renumbered Permit Condition 1.3

Table 1.1 lists all sources of regulated emissions in this PTC.

Table 1.1 SUMMARY OF REGULATED SOURCES

Permit Section	Source Description	Emissions Controls
2	<p>Skim Milk Dryer Emissions Unit Name: Skim Milk Dryer (P101) Manufacturer: Dryer: C/E/Rogers Burner: Maxon Model: Crossfire Low NO_x Line Burner Max Capacity: 32.5 MMBtu/hr Operation: 8,760 hr/yr</p>	Baghouses (P101A & P101B)
3	<p>Natural Gas Boilers Emissions Unit Name: Boiler No. 1 (P104) Max Capacity: 33.48 MMBtu/hr Fuel: Natural Gas Operation: 8, 760 hr/yr</p> <p>Emissions Unit name: Boiler No. 2 (P105) Max Capacity: 33.48 MMBtu/hr Fuel: Natural Gas Operation: 8,760 hr/yr</p>	None
4	<p>Fluid-bed and Powder Handling <u>Fluid-bed</u> Manufacturer: C/E/Rogers Max Capacity: 9,000 lb/hr</p> <p><u>Powder Handling</u> Manufacturer: C/E/Rogers</p>	<p><u>Fluid-bed Baghouse</u> (P102) Manufacturer: C/E/Rogers Model: Fluid-bed Baghouse Control Efficiency: PM/PM₁₀: 99.93%</p> <p><u>Powder Handling Baghouse</u> (P103A & P103B) Manufacturer: C/E/Rogers Model: Powder Handling Baghouse Control Efficiency: PM/PM₁₀: 98.4 %</p>
5	<p>Emergency Generator Manufacturer: Cummins Max Capacity: 1490 HP Max Operation: 500 hr/yr Displacement: 2.55 liters/cylinder Ignition: Compression</p>	None

Deleted existing Permit Condition 3.3 and renumbered existing Permit Conditions 3.4 through 3.9

The CO emissions from the Natural Gas Boiler stacks shall not exceed 10.4 lb/hr and 45.2 T/yr cumulatively.

The maximum capacity of the boilers will be reduced from 62.77 MMBtu/hr to 33.48 MMBtu/hr as a result of this project. As a result, CO emission rate limits for the boilers are no longer required to demonstrate compliance with the major source threshold for CO. Subsequent permit conditions were renumbered as a result of this deletion.

Existing Permit Condition 3.7

The permittee shall not consume more than 61,535 standard cubic feet of natural gas per hour (scf/hr) and 539.1 MMscf/yr per boiler.

Modified Permit Condition 3.6

The permittee shall not consume more than 66,950 standard cubic feet of natural gas per hour (scf/hr) and 586.48 MMscf/yr in both boilers combined.

The fuel usage limits have been adjusted to reflect the maximum fuel usage rates for the replacement boilers, based on information included in the application.

Existing Permit Condition 3.9

The permittee shall comply with all applicable reporting and recordkeeping requirements of 40 CFR 60, Subpart Dc – New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units. The permittee shall refer to the following sections of the rule:

- The owner or operator of an affected facility that combusts only natural gas shall record and maintain records of the amount of fuel combusted during each calendar month in accordance with 40 CFR 60.48c(g)(2).
- All records shall be maintained by the owner or operator for a period of two years following the date of such record in accordance with 40 CFR 60.48c(i).
- The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the administrator and shall be postmarked by the 30th day following the end of the reporting period in accordance with 40 CFR 60.48c(j).

Reports shall be submitted to DEQ at the address listed in Permit Provision 2.11.

Modified Permit Condition 3.8

The permittee shall comply with all applicable reporting and recordkeeping requirements of 40 CFR 60, Subpart Dc – New Source Performance Standards for Small Industrial-Commercial-Institutional Steam Generating Units.

- The owner or operator of boilers that combust only natural gas shall record and maintain records of the total amount of boiler fuel delivered to that property during each calendar month in accordance with 40 CFR 60.48c(g)(3).
- All records shall be maintained by the owner or operator for a period of two years following the date of such record in accordance with 40 CFR 60.48c(i).
- The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the administrator and shall be postmarked by the 30th day following the end of the reporting period in accordance with 40 CFR 60.48c(j).

- The permittee shall submit notification of the date of construction or reconstruction of each boiler and actual startup for each boiler, in accordance with 40 CFR 60.48c(a) and 40 CFR 60.7. This notification shall include:
 - The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.
 - The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

Reports shall be submitted to DEQ at the address listed in Permit Provision 2.11.

These requirements have been updated with the notification requirements for construction and reconstruction in the NSPS General Provisions. Refer to Section 4.6 for additional information. After review of the draft permit, the permittee requested the use of the recordkeeping and monitoring option provided in 40 CFR 60.48c(g)(3).

Existing Permit Condition 5.4

The permittee shall comply with all applicable emissions and operating requirements of 40 CFR 60, Subpart III – New Source Performance Standards for Compression-ignition (CI) Internal Combustion Engines (ICE). The permittee shall refer to the following sections of the rule:

- The owner or operator shall not discharge exhaust opacity from the compression-ignition nonroad engine to exceed 20 percent during acceleration mode, 15 percent during lugging mode, and 50 percent during the peaks in either the acceleration mode or lugging mode: 40 CFR 89.113, 40 CFR 60.4202(a)(2) and 40 CFR 60.4205(b).
- The owner or operator shall operate the generators in accordance with manufacturer’s certification: 40 CFR 89.112 Table 2, 40 CFR 60.4202(a)(1) and 40 CFR 60.4205(b).

Modified Permit Condition 5.4

The permittee shall comply with the applicable emission standards of 40 CFR 60, Subpart III – New Source Performance Standards for Compression Ignition Internal Combustion Engines.

- The permittee shall operate and maintain the emergency generator according to the manufacturer's written instructions or procedures that are approved by the engine manufacturer, over the entire life of the engine, in accordance with 40 CFR 60.4206.
- The permittee shall comply with the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants, in accordance with 40 CFR 60.4205(b) and 40 CFR 60.4202(a)(2).
 - Exhaust emissions from the emergency generator shall not exceed the exhaust emission standards contained in Table 5.1, in accordance with 40 CFR 89.112.

Table 5.1 EMERGENCY GENERATOR EXHAUST EMISSIONS LIMITS¹

NMHC+NO _x (g/HP-hr)	CO (g/HP-hr)	PM (g/HP-hr)
4.77	2.61	0.15

1) Table 1 of 40 CFR 89.112, Tier 2 engines greater than 560 kW.

- Exhaust opacity from the emergency generator shall not exceed 20 percent during the acceleration mode, 15 percent during the lugging mode, and 50 percent during the peaks in either the acceleration or lugging modes, in accordance with 40 CFR 89.113. Opacity levels are to be measured and calculated as set forth in 40 CFR part 86, subpart I.

These requirements have been updated to include the emissions limits (in g/HP-hr) of Table 1 from 40 CFR 89.112.

Existing Permit Condition 5.5

No ASTM Grade 2 fuel oil containing sulfur in excess of 0.5% by weight shall be burned in the emergency generators in accordance with IDAPA 58.01.01.728.

Modified Permit Condition 5.5

The emergency generator shall combust only diesel fuel meeting the requirements of Permit Condition 5.8, and no ASTM Grade 2 fuel oil containing sulfur in excess of 0.5% by weight shall be burned in the emergency generators in accordance with IDAPA 58.01.01.728.

This condition was updated to clarify that only diesel fuel which meets the requirements of Subpart III shall be combusted in the emergency generator.

Added Permit Condition 5.11

The permittee shall record and maintain the operating hours of the emergency generator on a monthly and annual basis to demonstrate compliance with Permit Conditions 5.6 and 5.10. Records of this information shall be maintained in accordance with General Provision 7.

This condition was added to require monitoring of the operating hours of the emergency generator to demonstrate compliance with Permit Conditions 5.6 and 5.10, and to insure the generator is utilized for emergency purposes.

Added Permit Condition 5.13

The permittee shall comply with the applicable testing requirements of 40 CFR 60, Subpart III – New Source Performance Standards for Compression Ignition Internal Combustion Engines.

- Any required performance tests shall be conducted according to the paragraphs of 40 CFR 60.4214 (a) through (d).

Although the permit does not specifically require performance testing, Subpart III requirements have been included if performance testing is ever conducted or required.

5. PERMIT FEES

Table 5.1 lists the processing fee associated with this permitting action. The permittee is subject to a processing fee of \$1,000 in accordance with IDAPA 58.01.01.225 because the permitted emissions increase as a result of this modification is less than one ton per year. Refer to the chronology for fee receipt dates.

Table 5.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	1.33	24.60	-23.27
SO ₂	0.01	0.14	-0.13
CO	0.00	21.25	-21.25
PM ₁₀	0.03	1.80	-1.77
VOC	0.00	1.40	-1.40
HAP/TAP ¹	0.00	0.00	0.00
Total¹	1.37	49.19	-47.82
Fee Due	\$ 1,000.00		

¹ For the purposes of fee calculation, particulate and organic HAP/TAP from combustion sources are included in the PM₁₀ and VOC emissions total, and are therefore not included in the HAP emissions total.

6. PUBLIC COMMENT

An opportunity for public comment period on the permit to construct application was provided in accordance with IDAPA 58.01.01.209.01.c (refer to the chronology for comment period opportunity dates). During this time, there was no comment on the application and there was no request for a public comment period on DEQ's proposed action.

Appendix A – AIRS Information



AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

**Permittee/
 Facility Name:** High Desert Milk, Inc.
Facility Location: Burley, Idaho
AIRS Number: 031-00034

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION
								A-Attainment U-Unclassified N- Nonattainment
SO ₂	B		B					U
NO _x	B		B					U
CO	B		B					U
PM ₁₀	SM		SM				SM	U
PT (Particulate)	SM							---
VOC	B		B					U
THAP (Total HAPs)	B							---
				APPLICABLE SUBPART				
				Dc, IIII				

^a Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

^b AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAP only, class "A" is applied to each pollutant which is at or above the 10 T/yr threshold, or each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAP.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

Appendix B – Increase in Emissions Inventory



DEQ AIR QUALITY PROGRAM
 1410 N. Hilton, Boise, ID 83706
 For assistance, call the Air Permit
 Hotline - 1-877-5PERMIT

PERMIT TO CONSTRUCT APPLICATION

Revision 2
 2/14/2007

Please see instructions on next page before filling out the form.

Company Name: High Desert Milk

Facility Name:

Milk Processing Plant

Facility ID No.:

031-00034

Brief Project Description:

Construction of a new milk processing plant.

SUMMARY OF EMISSIONS INCREASE (PROPOSED PTE - PREVIOUSLY MODELED PTE) - POINT SOURCES

1. Emissions units	2. Stack ID	3.											
		PM ₁₀		SO ₂		NO _x		CO		VOC		Lead	
		lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Point Source(s)													
Skim Milk Dryer (P101)	P101A												
Skim Milk Dryer (P101)	P101B												
Fluid-Bed Baghouse (P102)	P102												
Powder Handling Baghouse(P103)	P103A												
Powder Handling Baghouse(P103)	P103B												
Boiler #1 (P104)	P104	(0.21)	(0.90)	(0.02)	(0.07)	(2.81)	(12.30)	(2.36)	(10.32)	(0.15)	(0.70)		(0.00)
Boiler #1 (P105)	P105	(0.21)	(0.90)	(0.02)	(0.07)	(2.81)	(12.30)	(2.36)	(10.32)	(0.15)	(0.70)		(0.00)
Emergency Generator (GEN)	GEN	0.11	0.03	0.02	0.01	5.31	1.33	(2.42)	(0.61)				
name of the emissions unit9													
name of the emissions unit10													
name of the emissions unit11													
name of the emissions unit12													
name of the emissions unit13													
name of the emissions unit14													
name of the emissions unit15													
name of the emissions unit16													
name of the emissions unit17													
name of the emissions unit18													
name of the emissions unit19													
name of the emissions unit20													
name of the emissions unit21													
(insert more rows as needed)													
Total		(0.31)	(1.77)	(0.01)	(0.13)	(0.31)	(23.27)	(7.13)	(21.25)	(0.31)	(1.40)		(0.00)



**Power
Generation**

**EPA Tier 2 Exhaust Emission
Compliance Statement
900DQFAC
60 Hz Diesel Generator Set**

Compliance Information:

The engine used in this generator set complies with U.S. EPA and California emission regulations under the provisions of 40 CFR 89, Nonroad (Mobile Off Highway) Tier 2 emissions limits when tested per ISO 8178 D2.

Engine Manufacturer: Cummins Inc
 EPA Certificate Number: CEX-NRCI-07-07
 Effective Date: 09/15/2006
 Date Issued: 09/18/2006
 EPA Nonroad Diesel Engine Family: 7CEXL030.AAD
 CARB Executive Order: U-R-002-0368

Engine Information:

Model:	Cummins Inc QST30-G5 NR2	Bore:	5.51 in. (140 mm)
Engine Nameplate HP:	1490	Stroke:	6.5 in. (165 mm)
Type:	4 Cycle, 50°V, 12 Cylinder Diesel	Displacement:	1860 cu. in. (30.5 liters)
Aspiration:	Turbocharged and Low Temperature Aftercooled (Air-to-Air)		
Compression Ratio:	14.7:1		
Emission Control Device:	Turbocharged and Low Temperature Aftercooled(Air-to-Air)		

U.S. Environmental Protection Agency Nonroad Tier 2 Limits

(All values are Grams per HP-Hour)

<u>COMPONENT</u>	
NOx + HC (Oxides of Nitrogen as NO2 + Total Unburned Hydrocarbons)	4.77
CO (Carbon Monoxide)	2.61
PM (Particulate Matter)	0.15

Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

Appendix C – Modeling Analysis



1.0 Ambient Impact Assessment

Air dispersion modeling was performed to demonstrate compliance with NAAQS for criteria pollutants in support of the application to modify the existing Permit to Construct (PTC) (P-2007.0100) for the High Desert Milk facility. Modeling was performed in substantial conformance with the Modeling Protocol submitted to the IDEQ on June 5, 2007.

1.1 Model Description / Justification

Air dispersion modeling was performed using the Environmental Protection Agency (EPA) AERMOD model. Building downwash was accounted for in the model. Building and tank dimensions were entered into the Building Parameter Input Program (version 04274) to calculate appropriate building profiles to import into AERMOD. Model input/output files are included as electronic files on an enclosed compact disc.

1.2 Receptor Network

A receptor network was established so that ambient concentrations could be evaluated. The first step in this process was to determine the location of the ambient air boundary and the second step was to assign receptor locations within the ambient air zone.

1.2.1 Ambient Air Boundary

The ambient air boundary was established as the facility's fenceline. See Figure 2 – Site Plan, for location of the fenceline.

1.2.2 Receptors

Receptors were established to determine maximum ambient air concentrations. A receptor grid with approximately 100 meter spacing was established across the entire evaluated area. Within 300 meters of the ambient air boundary, receptors were established every 25 meters. No receptors were established within the facility's controlled property boundary (ambient air boundary).

1.3 Elevation Data

Topography data for the site was obtained from the USGS as a 7.5 minute digital elevation model (DEM). AERMAP was used to pre-process this data for use in AERMOD.

1.4 Meteorological Data

Preprocessed meteorological data (surface and upper air) from the Boise airport was provided by the IDEQ. This data was processed by IDEQ using AERMET; the output files provided by the IDEQ were used as inputs to the AERMOD model for this site. Because this input data may not be representative of actual surface characteristics or meteorological conditions at the proposed plant location, an adjustment factor of twenty percent (20%) was applied to model results prior to adding in background concentrations.

1.5 Land Use Classification

The facility is industrial while the surrounding land is a mix of open space/agricultural and industrial land uses. The Air dispersion modeling was performed using a "rural" classification.

1.6 Surface Characteristics

Surface characteristics of the meteorological monitoring station were evaluated and incorporated into the AERMET processing performed by the IDEQ. These surface characteristics may not be representative for the High Desert Milk site but a safety factor of 20 percent was applied to model results to accommodate for the difference in surface and meteorological characteristics (as discussed in Section 1.4).

2.0 Preliminary Analysis

The first step in completion of an ambient impact assessment is to perform a Preliminary Analysis (PA). A PA involves modeling the incremental increase of emissions associated with the proposed modification and comparing the model predicted maximum ambient air concentrations to the Significant Contribution (SC) levels listed in IDAPA 58.01.01.006.102. If modeling of the proposed modification results in an ambient air concentration greater than the SC then a Full Impact Analysis (FIA) is necessary.

The proposed modification at the site involves reducing the size of the boilers to be installed at the facility and increasing the size of the emergency generator. A PA is not required for the boilers (P104 and P105) since the proposed boiler modification will decrease emissions below the values evaluated for the existing PTC (this modification is exempt from PTC requirements). Pollutant emission rates from the proposed emergency generator will be greater than the existing permitted generator for PM_{10} , NO_x , and SO_x . A PA is required for the PM_{10} and NO_x emissions increase associated with the proposed emergency generator upgrade. A PA is not required for the SO_x emissions increase since modeling for the existing PTC did not require SO_x modeling and because the proposed generator replacement will not substantially increase SO_x emissions. The results of the PA are summarized in Table 1.

As shown in Table 1, modeling results for PM_{10} were below the applicable SC and the modeling results for NO_x exceeded the SC. Since modeling of the proposed generator modification predicted ambient air concentrations that exceeded the SC for NO_x , a FIA was performed.



Table 1
Results of PA for Emergency Generator

Pollutant and Averaging Period	Emission Rate (g/s) ⁽¹⁾	Model Results (µg/m ³) ⁽²⁾	Multiplier	Adjusted Output (µg/m ³) ⁽³⁾	Significant Contribution (IDAPA 58.01.01.006.102) (µg/m ³)
PM ₁₀ - 24 hour	0.0139	4.12	1.2	4.94	5
PM ₁₀ - Annual	0.000794	0.046	1.2	0.055	1
NO _x - Annual	0.038	2.27	1.2	2.72	1

Notes:

- 1.) Emission rates are the incremental increase associated with the proposed generator modification. The emission rates for annual averaging periods were reduced by a factor of 500 hr / 8760 hr to account for limited hours of operation.
- 2.) Modeling was performed with the emergency generator as the only source.
- 3.) Output from the modeling was adjusted using a 1.2 factor to account for the lack of onsite meteorological data.

3.0 Full Impact Analysis

A FIA includes modeling of site-wide emissions and incorporates background concentrations to determine compliance with NAAQS. Only site-wide emissions of PM₁₀ and NO_x were remodeled since a PA was not required for any other pollutants.

3.1 Emission and Source Data

Eight point sources were modeled. The eight point sources included discharges from five baghouses, two boilers, and an emergency generator. The criteria pollutants PM₁₀ and NO_x were modeled from these sources. Table 2 summarizes the emission source characteristics used in the ambient impact analysis. All modeling was performed using the maximum potential to emit.

To be consistent with the original PTC application submitted for this site, PM₁₀ emissions from the dryer were split equally between the two baghouse discharge stacks. NO_x emissions from the dryer were not split between the two stacks, instead the maximum NO_x emission rate from the dryer was applied to be both discharge stacks. The annual average emission rates for pollutants from the emergency generator were reduced to account for limited hours of operation of 500 hours per year.



Table 2
Emission Source Characteristics

Emission Source	Stack ID	Stack Height (ft)	Stack Diam. (ft)	Exhaust Temp. (°F)	Stack Gas Vel. (m/s)	Emission Rates (g/s)	
						PM ₁₀	NO _x
Dryer Baghouse #1	P101A	114	4.08	190	17.08	0.665 ⁽²⁾	0.185
Dryer Baghouse #2	P101B	114	4.08	190	17.08	0.665 ⁽²⁾	0.185
Fluid-Bed Baghouse	P102	114	1.75	130	16.78	0.136	--
Powder Handling Baghouse #1	P103A	90	0.25 / 0.001m ⁽¹⁾	80	67.24 / 0.001 ⁽¹⁾	0.014	--
Powder Handling Baghouse #2	P103B	90	0.25 / 0.001m ⁽¹⁾	80	67.24 / 0.001 ⁽¹⁾	0.014	--
Boiler#1	P104	38	4	350	4.26	0.0315	0.422
Boiler #2	P105	38	4	350	4.26	0.0315	0.422
Emergency Generator ⁽⁴⁾	GEN	5.94	1	500	19.21	0.046 ⁽³⁾ (24-hr) 0.0026 ⁽³⁾ (Annual)	0.096

Notes:

- (1) Stack gas velocity set to 0.001 m/s and diameter set to 0.001 m for modeling purposes due to the stacks horizontal discharge orientation and vent cover.
- (2) Modeling for PM₁₀ was performed with the dryer emissions equally split between the two baghouse stacks.
- (3) Emergency Generator PM₁₀ modeling was performed for 24-hr and annual averaging periods at the different emission rates indicated.
- (4) Emergency Generator emission rates for pollutants with annual averaging periods were reduced by a factor of 500 hours / 8760 hours to account for limited hours of operation.

3.2 Background Concentrations

Table 3 summarizes the criteria pollutant background concentrations. Criteria pollutant background concentrations for small town/suburban areas were provided by Kevin Schilling of the IDEQ.

3.3 Evaluation of Compliance With Standards

As discussed in Section 1.4, a model output adjustment factor of 20% was applied to the modeling results to account for variations in surface characteristics between the meteorological monitoring station and the High Desert Milk site. To determine compliance with NAAQS, the applicable background concentrations were added to the adjusted maximum predicted ambient concentrations determined from air dispersion modeling to result in total ambient concentrations. These total ambient air concentrations were compared to the NAAQS. Table 3 summarizes the air dispersion modeling results and compares the total predicted ambient air concentration to the applicable NAAQS. Based on this evaluation, no NAAQS are predicted to be



exceeded by emissions from the sources, if operated and configured as proposed in this application.

Table 3
Results of Ambient Impact Assessment for Criteria Pollutants
 (All Concentrations in Units of $\mu\text{g}/\text{m}^3$)

Pollutant	Averaging Period	Maximum Air Dispersion Model Output	Output Adjustment Factor	Adjusted Output	Compliance Demonstration		
					Background	Total	NAAQS
PM10	24 hr, 2 nd high	56.70	1.2	68.0	76	144	150
	Annual	16.38	1.2	19.7	27	46.7	50
NOx	Annual	24.32	1.2	29.2	32	61.2	100

Appendix D – Facility-Wide Emissions Inventory

	DEQ AIR QUALITY PROGRAM 1410 N. Hilton, Boise, ID 83706 For assistance, call the Air Permit Hotline - 1-877-SPERMIT	PERMIT TO CONSTRUCT APPLICATION Revision 2 2/14/2007											
Company Name:		High Desert Milk											
Facility Name:		Milk Processing Plant											
Facility ID No.:		031-00034											
Brief Project Description:		Construction of a new milk processing plant.											
<i>Please see instructions on next page before filling out the form.</i>													
SUMMARY OF FACILITY WIDE EMISSION RATES FOR CRITERIA POLLUTANTS - POINT SOURCES													
		3.											
1. Emissions units	2. Stack ID	PM ₁₀		SO ₂		NO _x		CO		VOC		Lead	
		lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Point Source(s)													
Skim Milk Dryer (P101)	P101A	5.28	23.11	0.01	0.04	0.73	3.21	5.96	26.10	0.09	0.38	0.00	0.00
Skim Milk Dryer (P101)	P101B	5.28	23.11	0.01	0.04	0.73	3.21	5.96	26.10	0.09	0.38	0.00	0.00
Fluid-Bed Baghouse (P102)	P102	1.08	4.73										
Powder Handling Baghouse(P103)	P103A	0.06	0.25										
Powder Handling Baghouse(P103)	P103B	0.06	0.25										
Boiler #1 (P104)	P104	0.25	1.10	0.02	0.09	3.35	14.67	2.81	12.31	0.18	0.79	0.00	0.00
Boiler #1 (P105)	P105	0.25	1.10	0.02	0.09	3.35	14.67	2.81	12.31	0.18	0.79	0.00	0.00
Emergency Generator (GEN)	GEN	0.36	0.09	0.33	0.08	13.30	3.33	1.90	0.48				
name of the emissions unit9													
name of the emissions unit10													
name of the emissions unit11													
name of the emissions unit12													
name of the emissions unit13													
name of the emissions unit14													
name of the emissions unit15													
name of the emissions unit16													
name of the emissions unit17													
name of the emissions unit18													
name of the emissions unit19													
name of the emissions unit20													
name of the emissions unit21													
(insert more rows as needed)													
Total		12.61	53.73	0.39	0.34	21.46	39.08	19.44	77.30	0.53	2.33	0.00	0.00