



**Air Quality Permitting
Statement of Basis**

August 27, 2007

Permit to Construct No. P-2007.0092

Norsun Food Group, Inc., Sugar City, Idaho

Facility ID No. 065-00013

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FINAL

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Acronyms, Units, and Chemical Nomenclatures

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Btu/scf	British thermal unit per standard cubic feet
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EI	emissions inventory
EPA	U.S. Environmental Protection Agency
FR	federal register
HAPs	Hazardous Air Pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
kW	kilowatt
lb/day	pounds per day
lb/hr	pounds per hour
MACT	Maximum Achievable Control Technology
MMBtu/hr	million British thermal units per hour
NESHAP	National Emission Standards for Hazardous Air Pollutants
Norsun	Norsun Food Group, Inc.
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
Rules	Rules for the Control of Air Pollution in Idaho
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	Synthetic Minor
SO ₂	sulfur dioxide
TAP	toxic air pollutant
T/yr	tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, for issuing permits to construct.

2. FACILITY DESCRIPTION

Norsun Food Group, Inc. (Norsun) operates a cooked potato processing plant. The Norsun facility consists of three separate processing lines: Lines A, B, and C. A-line and B-line, which are nearly identical, process raw potatoes to various cut and cooked potato products. C-line processes raw potatoes to whole baked potatoes. C-line was destroyed over a year ago from a lightning-caused fire jumping across a circuit board. Norsun uses natural gas exclusively for its combustion sources (i.e. the boiler, ovens, steam peeler, and several space heaters located throughout the facility). In addition, Norsun utilizes two ammonia-cooled freezers and precoolers to store their processed potatoes from the A-line and B-line.

3. FACILITY / AREA CLASSIFICATION

This facility is classified as a minor facility because its potential to emit is less than all major source thresholds. The facility is not a designated facility as defined by IDAPA 58.01.01.006. The facility's natural gas-fired boiler is subject to NSPS requirements in accordance with 40 CFR 60, Subpart Dc, but only for initial notification and fuel recordkeeping and reporting. The facility is not subject to other NESHAP or MACT requirements. The SIC code defining the facility is 2037 and the AIRS facility classification is "B."

The facility is located within AQCR 61 and UTM zone 12. The facility is located in Madison County, which is designated as unclassifiable for all criteria pollutants (PM₁₀, CO, NO_x, SO₂, lead, and ozone).

The AIRS information provided in Appendix defines the classification for each regulated air pollutant at Norsun. This required information is entered into the EPA AIRS database.

4. APPLICATION SCOPE

This application is for increasing the facility's potato production capability. Norsun has requested to

- increase the heat input rate of the existing Clayton natural gas-fired steam boiler from 12.8 MMBtu/hr to 14.6 MMBtu/hr; and
- replace A-line oven's Eclipse burners from six burners to four burners and replace the APV A line oven with a new custom built in-place oven by Idaho Steel. As a result, the A-line oven heat input rate decreases from 12.0 MMBtu/hr to 9.8 MMBtu/hr.

4.1 Application Chronology

May 31, 2007	DEQ received the 15-day application.
June 7, 2007	Norsun requested to process the 15-Day Pre-Permit Construction application as a regular Permit to Construct (PTC) application through email.
June 22, 2007	DEQ declared the application complete.
July 25, 2007	DEQ emailed draft permit to the applicant for the facility review

5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this PTC action.

5.1 *Equipment Listing*

Natural gas-fired boiler:

Manufacturer:	Clayton Industries
Model:	not provided in the application
Rated heat input capacity:	14.645 MMBtu/hr (increased from original 12.8 MMBtu/hr)
Fuel heat content:	1020 Btu/scf
Burner fuel type:	Natural gas

Stack Information

Stack height:	9.94 meter/32.6 feet
Stack diameter:	0.72 meter/2.36 feet
Stack temperature:	341.5 K/155 °F

This stack has a rain cap. The emissions are uncontrolled.

A Line Oven:

Burner Manufacturer:	Eclipse Combustion
Oven Manufacturer:	Custom built in-place oven by Idaho Steel
Burner Model:	RM 200
Maximum heat input capacity:	9.8 MMBtu/hr (719 kW)
Fuel heat content:	1020 Btu/scf
Burner fuel type:	Natural Gas
Production limit:	180 Tons finished potato product/day (increase of 60 T/yr)

Stack Information

Stack height:	10.08 meter/33.08 feet
Stack diameter:	0.23 meter/8 inch x 8 inch
Stack temperature:	644.3 K/700 °F

This stack has a rain cap. The emissions are uncontrolled.

5.2 *Emissions Inventory*

A detailed emissions inventory (EI), including toxic air pollutant (TAP) emissions, was provided in the PTC application. The EI that affects this permitting action has been reviewed by DEQ and appears to accurately reflect emissions from the facility. Table 5.1 provides an emissions change (increase or decrease) due to this permitting action. Table 5.2 provides a summary of emissions from the modified emissions units (i.e., the Clayton steam boiler and A-line oven) after the modification. The PM₁₀ emission factor for the A-Line process oven is based on the December 2003 source test results. All other criteria air pollutant emission factors were obtained from AP-42, Section 1.4, Natural Gas Combustion (version 7/98). The potential to emit for each emissions source was calculated using the heat input capacity of each source, the emission factors as described, and an operating schedule of 8,760 hours per year.

Table 5.1 EMISSIONS CHANGES (INCREASE OR DECREASE) DUE TO THE MODIFICATION

Units	PM		SO ₂		NO _x		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Steam Boiler	0.013	0.059	0.0011	0.005	0.176	0.773	0.148	0.649	0.010	0.043
A-Line Oven	0.058	0.252	-0.0013	-0.006	-0.216	-0.945	-0.181	-0.794	-0.012	-0.052

Table 5.2 EMISSIONS FROM THE MODIFIED EMISSIONS UNITS AFTER MODIFICATION

Units	PM ¹		SO ₂		NO _x		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Steam Boiler	0.11	0.48	0.01	0.04	1.43	6.27	1.20	5.27	0.08	0.34
A-Line Oven ^{2,3}	0.173	0.76	0.01	0.03	0.96	4.21	0.81	3.53	0.05	0.23

¹ Assume PM is equal to PM₁₀.

² A-Line Oven PM emission rate of 0.085 lb/hr was obtained from December 10 and 11, 2003 source testing while the production rate was at 3.69 ton potatoes per hour. A linear relationship was assumed. The PM emission rate was then calculated at the proposed production rate of 7.5 tons potatoes per hour (180 tons per day).

³ Emission estimates represent the combined total of 4 new burners each rated at 2.45 MMBtu/hr.

5.3 Modeling

An air dispersion modeling protocol was prepared by CH2M HILL and submitted to DEQ on April 30, 2007. The source parameters and modeling assumptions were identified within the modeling protocol. PM₁₀ emission rates were below the modeling thresholds as stated in the *State of Idaho Air Quality Modeling Guideline*, Table 1, Modeling thresholds for criteria pollutants, dated 12/31/02.

Upon review of the modeling protocol, DEQ confirmed that the project emission increases were below applicable modeling thresholds and that a modeling analysis was not required to demonstrate compliance. The air dispersion modeling protocol and DEQ's email confirmation stating "*that an air quality modeling assessment is not required*" are included in Appendix F of the application.

5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC.

IDAPA 58.01.01.201..... Permit to Construct Required

The facility's proposed project does not meet the permit to construct exemption criteria contained in Sections 220 through 223 of the Rules. Therefore, a PTC is required.

IDAPA 58.01.01.203..... Permit Requirements for New and Modified Stationary Sources

The applicant has shown to the satisfaction of DEQ that the facility will comply with all applicable emissions standards, ambient air quality standards, and toxic increments.

IDAPA 58.01.01.210..... Demonstration of Preconstruction Compliance with Toxic Standards

The applicant has demonstrated preconstruction compliance for all TAPs identified in the permit application.

IDAPA 58.01.01 675..... Fuel Burning Equipment

This regulation is applicable to Clayton steam boiler. The calculated result in the application demonstrates that the boiler will be in compliance with the grain loading standard. As long as the boiler is fired by natural gas, no specific monitoring is required.

IDAPA 58.01.01.701..... New Equipment Process Weight Limitations

The purpose of Sections 701 is to establish particulate matter emission limitations for process equipment. The A-line oven is subject to IDAPA 58.01.01.701 because the process commenced operation after October 1, 1979. The A-line oven is in compliance with the process weight rate limitation. Detailed calculation can be found in the CD with spreadsheets coming with the application. No specific monitoring in the permit is required.

40 CFR 60 Subpart Dc New Source Performance Standards

The Clayton steam boiler was installed in 1998 and will be modified because of this project. It is subject to 40 CFR 60 Subpart Dc. Norsun is required to submit notification of the date of construction or reconstruction, and actual startup, for the Clayton steam boiler, provided by 40 CFR 60.7. Norsun is also required to record and maintain records of the amounts of natural gas combusted in the Clayton steam boiler during each calendar month which is allowed as an alternative in 40 CFR 60.48c(g)(2) (FR Vol.72, No. 113, June 13, 2007, P.32767)

40 CFR 61 and 63..... National Emission Standards for Hazardous Air Pollutants (NESHAP) and MACT

This facility is not subject to NESHAP or MACT.

5.5 Permit Conditions Review

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

- 5.5.1 Permit Condition 1.1 states the purpose of the permitting action.
- 5.5.2 Permit Condition 1.2 states that this permit replaces the previous permit.
- 5.5.3 Table 1.1 is revised to reflect the increase of the Clayton steam boiler heat input rate from 12.8 MMBtu/hr to 14.645 MMBtu/hr, and the removing of C-line Oven. C-line oven was destroyed over a year ago from a lightning-caused fire jumping across a circuit board. It is no longer in service.
- 5.5.4 Permit Condition 2.9 is reserved because its original content is now covered in General Provision 8.
- 5.5.5 Permit Condition 2.10 is revised to reflect the change of the Rules – replacing IDAPA 58.01.01.600-616 with IDAPA 58.01.01.600-617.
- 5.5.6 Permit Condition 2.11 is reserved because its original content is now covered in General Provision 7.
- 5.5.7 Permit Condition 3.1 is revised to reflect the increase of the Clayton steam boiler heat input rate. It will increase to 14.645 MMBtu/hr after this modification.
- 5.5.8 Permit Condition 3.5 is revised to reflect the change of the monitoring frequency – replacing “each calendar day” with “each calendar month”. Monthly monitoring is allowed as an alternative in 40 CFR 60.48c(g)(2). (FR Vol.72, No. 113, June 13, 2007, P.32767)

- 5.5.9 Permit Condition 4.1 is revised to reflect the change of the burners in A-line oven.
- 5.5.10 Permit Condition 4.3 and Table 4.1 are revised to increase the PM₁₀ emissions limit from 2.76 lb/day to 4.152 lb/day. The emissions increase is due to the increase of the potato production.
- 5.5.11 Permit Condition 4.4 is revised to reflect the throughput increase of the finished potato product from 120 tons per day to 180 tons per day.
- 5.5.12 Permit Condition 4.6 is revised. "...in accordance with Permit Condition 2.11" is replaced with "...in accordance with General Provision 7"
- 5.5.13 Section 5 Permit General Provision is replaced with the newest version taken from current PTC template.

6. PERMIT FEES

Norsun submitted a \$1,000 PTC application fee on May 31, 2007, in accordance with IDAPA 58.01.01.224. Norsun's emissions increase is less than one ton per year. In accordance with IDAPA 58.01.01.225, the PTC processing fee is \$1,000. The processing fee was received on August 7, 2007.

Table 6.1 PTC PROCESSING FEE TABLE

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO _x	0	-0.172	0.00
SO ₂	0	-0.001	0.00
CO	0	-0.145	0.00
PM ₁₀	0.311	0.000	0.00
VOC	0	-0.009	0.00
TAPS/HAPS	0	-1.760	0.00
Total:	0.311	-2.087	-1.78
Fee Due	\$1,000.00		

7. PERMIT REVIEW

7.1 Regional Review of Draft Permit

The draft permit was made available for Idaho Falls Regional Office review on July 23, 2007. The comments were received on July 23, 2007. The comments related to this permitting action were addressed in the permit.

7.2 Facility Review of Draft Permit

The draft permit was provided for facility review on July 25, 2007. The comments were received on August 7, 2007. The comments related to this permitting action were addressed in the permit.

7.3 Public Comment

An opportunity for public comment period on the PTC application was provided from July 6, 2007 to July 20, 2007 in accordance with IDAPA 58.01.01.209.01.c. During this time, there were not comments on the application and no requests for a public comment period on DEQ's proposed action.

8. RECOMMENDATION

Based on review of the application materials, and all applicable state and federal rules and regulations, staff recommend that Norsun Food Group, Inc. be issued a final PTC No. P-2007.0092 for the facility's potato production increase project. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

SYC/sd

Permit No. P-2007.0092

Appendix — AIRS Information

P-2007.0092

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

Facility Name: Norsun Food Group, Inc.
Facility Location: Sugar City, Idaho
AIRS Number: 065-00013

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							U
NO _x	B							U
CO	B							U
PM ₁₀	B		B					U
PT (Particulate)	B							
VOC	B							U
THAP (Total HAPs)	B							
			APPLICABLE SUBPART					
			Dc					

^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 HAPs 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 HAPs.
- 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)