Appendix C
Public Meeting Announcement

LEGAL NOTICE - PUBLIC MEETING ANNOUNCEMENT DICKINSON

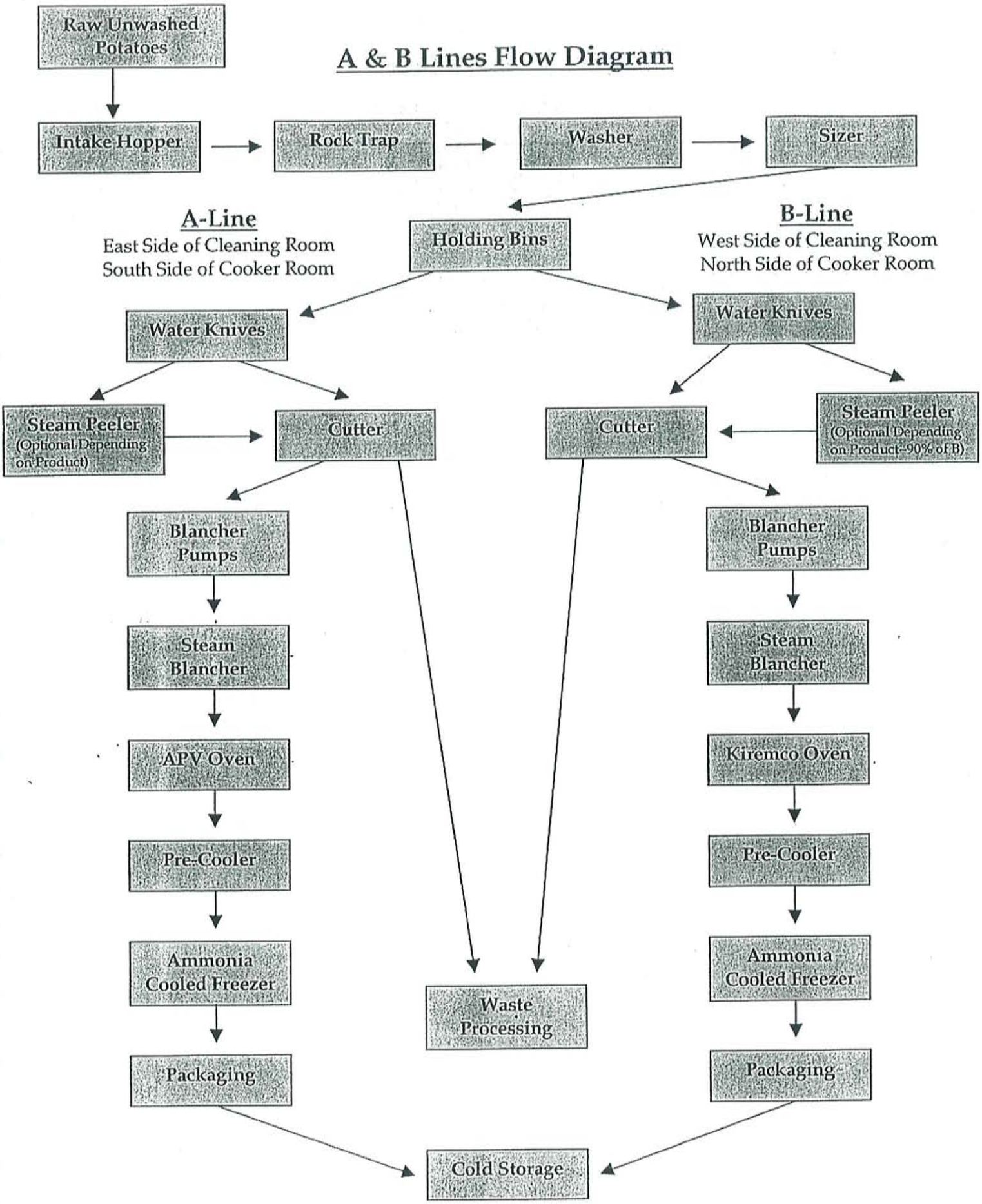
LEGAL NOTICE - Public Meeting Announcement Dickinson Foods, Inc. DBA Norsun Food Group, Inc. An informational meeting will be held at the Norsun facility located at 903 East 3000 North, Sugar City, Idaho 83448 from 2-3 PM on Thursday May 31, 2007 in accordance with the Rules for the Control of Air Pollution in Idaho, Idaho Administrative Code, *IDAPA 58.01.01.213.02 - Permit to Construct Procedures For Pre-Permit Construction.* The purpose of the meeting is to inform the general public of Norsun Foods proposed steam and potato production increase for the A-Process Line at their Sugar City facility. In addition, this meeting will serve to fulfill the air quality pre-permit construction requirement per IDAPA 58.01.01.213.02. The steam and potato production increase will result in a total particulate matter increase of approximately 0.31 tons per year. The result is a small increase in particulate matter emissions and the facility will maintain its classification as a minor source. Published: May 29, 2007

Appeared in: ***Post Register*** on Tuesday, 05/29/2007

Back

Appendix D
Process Flow Diagram

A & B Lines Flow Diagram



Appendix E
Emission Estimates/Manufacturer Data

Norsun
Emission Factors
Sugar City, Idaho

Pollutant	Emission Factor[1] ($lb/10^6$ scf)	Emission Factors[2] (lb/MMBtu)
PM[3]	7.60	0.007
SOx	0.60	0.0006
NOx	100.00	0.10
NOx[4]	50.00	0.05
CO	84.00	0.08
VOC	5.50	0.005

Notes:

1. Emission factors derived from AP-42, Section 1.4 Natural Gas Combustion, Tables 1.4-1 and 1.4-2.
2. Conversion from $lb/10^6$ scf to lb/MMBtu (divide by 1,020).
3. Assume PM is equal to PM_1, $PM_{2.5}$, or PM_{10}.
4. The Reyco Gas-Fired Heater uses a Low NOx burner.

Norsun
Existing Criteria Pollutant Emissions
Sugar City, Idaho

Units	Manufacturer	Rated Capacity (MMBTU/hr)	PM[1] Emissions (lb/hr)	PM Emissions (tpy)	SOx Emissions (lb/hr)	SOx Emissions (tpy)	NOx Emissions (lb/hr)	NOx Emissions (tpy)	CO Emissions (lb/hr)	CO Emissions (tpy)	VOC Emissions (lb/hr)	VOC Emissions (tpy)
Steam Boiler	Clayton	12.8	0.10	0.42	0.01	0.03	1.25	5.50	1.05	4.62	0.07	0.30
Steam Peeler	Pesco	0.120	0.001	0.004	0.0001	0.0003	0.01	0.05	0.01	0.04	0.001	0.003
Ovens:												
A-Line Oven[2]	Eclipse	12.0	**0.115**	**0.50**	0.01	0.03	1.18	5.15	0.99	4.33	0.06	0.28
B-Line Oven[2]	Eclipse	16.0	**0.115**	**0.50**	0.01	0.04	1.57	6.87	1.32	5.77	0.09	0.38
C-Line Oven	Maxon	2.0	0.01	0.07	0.001	0.01	0.20	0.86	0.16	0.72	0.01	0.05
R&D Oven	Middleby Marshall	0.175	0.001	0.01	0.0001	0.0005	0.02	0.08	0.01	0.06	0.001	0.004
Heaters:												
Line (roof mounted)[3]	Reyco	6.0	0.045	0.196	0.004	0.015	0.29	1.29	0.49	2.16	0.032	0.142
Office (pulse)	Lennox	0.132	0.001	0.004	0.0001	0.0003	0.01	0.06	0.01	0.05	0.001	0.003
(2) Office 9200*	Carrier Weathermaker	0.200	0.001	0.007	0.0001	0.001	0.02	0.09	0.02	0.07	0.001	0.005
Shop	Reznor	0.220	0.002	0.007	0.0001	0.001	0.02	0.09	0.02	0.08	0.001	0.005
Lab	Lennox	0.150	0.001	0.005	0.0001	0.0004	0.01	0.06	0.01	0.05	0.001	0.004
Boiler Room	Modine	0.075	0.001	0.002	0.00004	0.0002	0.01	0.03	0.01	0.03	0.0004	0.002
(2) C-Line Room*	Lennox	0.300	0.002	0.010	0.0002	0.001	0.03	0.13	0.02	0.11	0.002	0.007
(2) A&B Line Room*	Modine	0.350	0.003	0.011	0.0002	0.001	0.03	0.15	0.03	0.13	0.002	0.008
Facility Wide Totals			**0.39**	**1.69**	**0.03**	**0.13**	**4.66**	**20.41**	**4.16**	**18.22**	**0.27**	**1.19**
Presumptively Insignificant Emission Unit Totals			**0.39**	**1.73**	**0.03**	**0.13**	**4.61**	**20.18**	**4.12**	**18.03**	**0.27**	**1.18**

(excluding Steam Peeler and Office(pulse), (2) Office 9200, and Boiler Room heaters)

1. Assume PM is equal to PM_1, $PM_{2.5}$, or PM_{10}.
2. A-Line and B-Line Oven PM emission rate of 0.085 lb/hr based on production rated of 3.69 ton potatoes per hour - Source test, December 10 and 11, 2003.
PM emission factor estimated from production rate of 5 tons of potatoes per hour for A-Line and B-Line Ovens.
3. The Reyco Gas-Fired Heater uses a Low NOx burner.

Norsun
Emission Factors
Sugar City, Idaho

Pollutant	Emission Factor[1] ($lb/10^6$ scf)	Emission Factors[2] (lb/MMBtu)
PM[3]	7.60	0.007
SOx	0.60	0.0006
NOx	100.00	0.10
NOx[4]	50.00	0.05
CO	84.00	0.08
VOC	5.50	0.005

Notes:

1. Emission factors derived from AP-42, Section 1.4 Natural Gas Combustion, Tables 1.4-1 and 1.4-2.
2. Conversion from $lb/10^6$ scf to lb/MMBtu (divide by 1,020).
3. Assume PM is equal to PM_1, $PM_{2.5}$, or PM_{10}.
4. The Reyco Gas-Fired Heater uses a Low NOx burner.

Norsun
Modified Criteria Pollutant Emissions
Sugar City, Idaho

Units	Manufacturer	Rated Capacity (MMBTU/hr)	PM[1] Emissions (lb/hr)	PM[1] Emissions (tpy)	SOx Emissions (lb/hr)	SOx Emissions (tpy)	NOx Emissions (lb/hr)	NOx Emissions (tpy)	CO Emissions (lb/hr)	CO Emissions (tpy)	VOC Emissions (lb/hr)	VOC Emissions (tpy)
Steam Boiler	Clayton	14.6	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]	Eclipse	9.8	0.173	0.76	0.01	0.03	0.96	4.21	0.81	3.53	0.05	0.23
Facility Wide Totals			**0.28**	**1.23**	**0.01**	**0.06**	**2.39**	**10.48**	**2.01**	**8.80**	**0.13**	**0.58**

1. Assume PM is equal to PM_{10}.
2. A-Line Oven PM emission rate of 0.085 lb/hr is based on production rated of 3.69 ton potatoes per hour - Source test, December 10 and 11, 2003.
PM emission rate based on total production of 7.5 tons of potatoes per hour (180 tons per day) for A-Line oven.
3. Emission estimates represent the combined total of 4 new burners each rated at 2.45 MMBtu/hr.

Norsun
TAP Emission Factors
Sugar City, Idaho

Pollutant	CAS No.	Emission Factor[1] (lb/10^6 scf)	Emission Factor[2] (lb/MMBtu)
3-Methylchloranthrene	56-49-5	1.80E-06	1.76E-09
Benzene	71-43-2	2.10E-03	2.06E-06
Benzo(a)pyrene	50-32-8	1.20E-06	1.18E-09
Formaldehyde	50-00-0	7.50E-02	7.35E-05
Hexane	110-54-3	1.80E+00	1.76E-03
Naphthalene	91-20-3	6.10E-04	5.98E-07
Pentane	109-66-0	2.60E+00	2.55E-03
Toluene	108-88-3	3.40E-03	3.33E-06
Arsenic	7440-38-2	2.00E-04	1.96E-07
Barium	7440-39-3	4.40E-03	4.31E-06
Beryllium	7440-41-7	1.20E-05	1.18E-08
Cadmium	7440-43-9	1.10E-03	1.08E-06
Chromium (III)	7440-47-3	1.40E-03	1.37E-06
Cobalt	7440-48-4	8.40E-05	8.24E-08
Copper	7440-50-8	8.50E-04	8.33E-07
Manganese	7439-96-5	3.80E-04	3.73E-07
Mercury	7439-97-6	2.60E-04	2.55E-07
Molybdenum	7439-98-7	1.10E-03	1.08E-06
Nickel	7440-02-0	2.10E-03	2.06E-06
Selenium	7782-49-2	2.40E-05	2.35E-08
Vanadium	7440-62-2	2.30E-03	2.25E-06
Zinc	7440-66-6	2.90E-02	2.84E-05

Notes:

1. Emission factors derived from AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3.
2. Conversion from lb/10^6 scf to lb/MMBtu (divide by 1,020).

Norsun
Existing TAP Emissions
Sugar City, Idaho

orsun Equipment	Manufacturers	Manfacturer Rated Capacity (MMBtu/hr)	Date Installed	3-Methylchloranthrene Emissions (lb/hr)	Benzene Emissions (lb/hr)	Benzo(a)pyrene Emissions (lb/hr)	Formaldehyde Emissions (lb/hr)	Hexane Emissions (lb/hr)	Naphthalene Emissions (lb/hr)	Pentane Emissions (lb/hr)	Toluene Emissions (lb/hr)	Arsenic Emissions (lb/hr)	Barium Emissions (lb/hr)	Beryllium Emissions (lb/hr)	Cadmium Emissions (lb/hr)	Chromium (III) Emissions (lb/hr)	Cobalt Emissions (lb/hr)	Copper Emissions (lb/hr)	Manganese Emissions (lb/hr)	Mercury Emissions (lb/hr)	Molybdenum Emissions (lb/hr)	Nickel Emissions (lb/hr)	Selenium Emissions (lb/hr)	Vanadium Emissions (lb/hr)	Zinc Emissions (lb/hr)
eam Boiler	Clayton	12.8	1998	2.26E-08	2.64E-05	1.51E-08	9.41E-04	2.26E-02	7.65E-06	3.26E-02	4.27E-05	2.51E-06	5.52E-05	1.51E-07	1.38E-05	1.76E-05	1.05E-06	1.07E-05	4.77E-06	3.26E-06	1.38E-05	2.64E-05	3.01E-07	2.89E-05	3.64E-04
eam Peeler	Pesco	0.120	Sep-94	2.12E-10	2.47E-07	1.41E-10	8.82E-06	2.12E-04	7.18E-08	3.06E-04	4.00E-07	2.35E-08	5.18E-07	1.41E-09	1.29E-07	1.65E-07	9.88E-09	1.00E-07	4.47E-08	3.06E-08	1.29E-07	2.47E-07	2.82E-09	2.71E-07	3.41E-06
vens:																									
-Line Oven	Eclipse	12.0	1989	2.12E-08	2.47E-05	1.41E-08	8.82E-04	2.12E-02	7.18E-06	3.06E-02	4.00E-05	2.35E-06	5.18E-05	1.41E-07	1.29E-05	1.65E-05	9.88E-07	1.00E-05	4.47E-06	3.06E-06	1.29E-05	2.47E-05	2.82E-07	2.71E-05	3.41E-04
-Line Oven	Eclipse	16.0	2000	2.82E-08	3.29E-05	1.88E-08	1.18E-03	2.82E-02	9.57E-06	4.08E-02	5.33E-05	3.14E-06	6.90E-05	1.88E-07	1.73E-05	2.20E-05	1.32E-06	1.33E-05	5.96E-06	4.08E-06	1.73E-05	3.29E-05	3.76E-07	3.61E-05	4.55E-04
-Line Oven	Maxon	2.0	1981	3.53E-09	4.12E-06	2.35E-09	1.47E-04	3.53E-03	1.20E-06	5.10E-03	6.67E-06	3.92E-07	8.63E-06	2.35E-08	2.16E-06	2.75E-06	1.65E-07	1.67E-06	7.45E-07	5.10E-07	2.16E-06	4.12E-06	4.71E-08	4.51E-06	5.69E-05
&D Oven	Maddleby Marshall	0.175	1978	3.09E-10	3.60E-07	2.06E-10	1.29E-05	3.09E-04	1.05E-07	4.46E-04	5.83E-07	3.43E-08	7.55E-07	2.06E-09	1.89E-07	2.40E-07	1.44E-08	1.46E-07	6.52E-08	4.46E-08	1.89E-07	3.60E-07	4.12E-09	3.95E-07	4.98E-06
eaters:																									
ne (roof mounted)	Reyco	6.0	1998	1.06E-08	1.24E-05	7.06E-09	4.41E-04	1.06E-02	3.59E-06	1.53E-02	2.00E-05	1.18E-06	2.59E-05	7.06E-08	6.47E-06	8.24E-06	4.94E-07	5.00E-06	2.24E-06	1.53E-06	6.47E-06	1.24E-05	1.41E-07	1.35E-05	1.71E-04
ffice (pulse)	Lennox	0.132	1978	2.33E-10	2.72E-07	1.55E-10	9.71E-06	2.33E-04	7.89E-08	3.36E-04	4.40E-07	2.59E-08	5.69E-07	1.55E-09	1.42E-07	1.81E-07	1.09E-08	1.10E-07	4.92E-08	3.36E-08	1.42E-07	2.72E-07	3.11E-09	2.98E-07	3.75E-06
) Office 9200*	Carrier Weathermaker	0.200	1991	3.53E-10	4.12E-07	2.35E-10	1.47E-05	3.53E-04	1.20E-07	5.10E-04	6.67E-07	3.92E-08	8.63E-07	2.35E-09	2.16E-07	2.75E-07	1.65E-08	1.67E-07	7.45E-08	5.10E-08	2.16E-07	4.12E-07	4.71E-09	4.51E-07	5.69E-06
op	Reznor	0.220	1978	3.88E-10	4.53E-07	2.59E-10	1.62E-05	3.88E-04	1.32E-07	5.61E-04	7.33E-07	4.31E-08	9.49E-07	2.59E-09	2.37E-07	3.02E-07	1.81E-08	1.83E-07	8.20E-08	5.61E-08	2.37E-07	4.53E-07	5.18E-09	4.96E-07	6.25E-06
ah	Lennox	0.150	1978	2.65E-10	3.09E-07	1.76E-10	1.10E-05	2.65E-04	8.97E-08	3.82E-04	5.00E-07	2.94E-08	6.47E-07	1.76E-09	1.62E-07	2.06E-07	1.24E-08	1.25E-07	5.59E-08	3.82E-08	1.62E-07	3.09E-07	3.53E-09	3.38E-07	4.26E-06
oiler Room	Medine	0.075	1978	1.32E-10	1.54E-07	8.82E-11	5.51E-06	1.32E-04	4.49E-08	1.91E-04	2.50E-07	1.47E-08	3.24E-07	8.82E-10	8.09E-08	1.03E-07	6.18E-09	6.25E-08	2.79E-08	1.91E-08	8.09E-08	1.54E-07	1.76E-09	1.69E-07	2.13E-06
) C-Line Room*	Lennox	0.300	1978	5.29E-10	6.18E-07	3.53E-10	2.21E-05	5.29E-04	1.79E-07	7.65E-04	1.00E-06	5.88E-08	1.29E-06	3.53E-09	3.24E-07	4.12E-07	2.47E-08	2.50E-07	1.12E-07	7.65E-08	3.24E-07	6.18E-07	7.06E-09	6.76E-07	8.53E-06
) A&B Line Room*	Medine	0.350	1978	6.18E-10	7.21E-07	4.12E-10	2.57E-05	6.18E-04	2.09E-07	8.92E-04	1.17E-06	6.86E-08	1.51E-06	4.12E-09	3.77E-07	4.80E-07	2.88E-08	2.92E-07	1.30E-07	8.92E-08	3.77E-07	7.21E-07	8.24E-09	7.89E-07	9.95E-06
otals				**8.66E-08**	**1.01E-04**	**5.78E-08**	**3.61E-03**	**8.66E-02**	**2.94E-05**	**1.25E-01**	**1.64E-04**	**9.63E-06**	**2.12E-04**	**5.78E-07**	**5.29E-05**	**6.74E-05**	**4.04E-06**	**4.09E-05**	**1.83E-05**	**1.25E-05**	**5.29E-05**	**1.81E-04**	**1.16E-06**	**1.11E-04**	**1.40E-03**
DAPA 58.01.01.585/586 AP Screening Levels				2.50E-06	8.00E-04	2.00E-06	5.10E-04	1.20E+01	3.33E+00	1.18E+02	2.50E+01	1.50E-06	0.033	2.80E-05	3.70E-06	3.30E-02	0.0033	0.013	0.067	0.003	0.333	2.70E-05	0.013	0.003	0.667
missions Exceed TAP creening Levels (Yes/No)				No	No	No	Yes	No	No	No	No	Yes	No	No	Yes	No	No	No	No	No	No	Yes	No	No	No

Norsun
TAP Emission Factors
Sugar City, Idaho

Pollutant	CAS No.	Emission Factor[1] (lb/10^6 scf)	Emission Factor[2] (lb/MMBtu)
3-Methylchloranthrene	56-49-5	1.80E-06	1.76E-09
Benzene	71-43-2	2.10E-03	2.06E-06
Benzo(a)pyrene	50-32-8	1.20E-06	1.18E-09
Formaldehyde	50-00-0	7.50E-02	7.35E-05
Hexane	110-54-3	1.80E+00	1.76E-03
Naphthalene	91-20-3	6.10E-04	5.98E-07
Pentane	109-66-0	2.60E+00	2.55E-03
Toluene	108-88-3	3.40E-03	3.33E-06
Arsenic	7440-38-2	2.00E-04	1.96E-07
Barium	7440-39-3	4.40E-03	4.31E-06
Beryllium	7440-41-7	1.20E-05	1.18E-08
Cadmium	7440-43-9	1.10E-03	1.08E-06
Chromium (III)	7440-47-3	1.40E-03	1.37E-06
Cobalt	7440-48-4	8.40E-05	8.24E-08
Copper	7440-50-8	8.50E-04	8.33E-07
Manganese	7439-96-5	3.80E-04	3.73E-07
Mercury	7439-97-6	2.60E-04	2.55E-07
Molybdenum	7439-98-7	1.10E-03	1.08E-06
Nickel	7440-02-0	2.10E-03	2.06E-06
Selenium	7782-49-2	2.40E-05	2.35E-08
Vanadium	7440-62-2	2.30E-03	2.25E-06
Zinc	7440-66-6	2.90E-02	2.84E-05

Notes:

1. Emission factors derived from AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3.
2. Conversion from lb/10^6 scf to lb/MMBtu (divide by 1,020).

Norsun
Modified TAP Emissions
Sugar City, Idaho

Norsun Equipment	Manufacturers	Manufacturer Rated Capacity (MMBtu/hr)	Date Installed	3-Methylchloranthrene Emissions (lb/hr)	Benzene Emissions (lb/hr)	Benzo(a)pyrene Emissions (lb/hr)	Formaldehyde Emissions (lb/hr)	Hexane Emissions (lb/hr)	Naphthalene Emissions (lb/hr)	Pentane Emissions (lb/hr)	Toluene Emissions (lb/hr)	Arsenic Emissions (lb/hr)	Barium Emissions (lb/hr)	Beryllium Emissions (lb/hr)	Cadmium Emissions (lb/hr)	Chromium (III) Emissions (lb/hr)	Cobalt Emissions (lb/hr)	Copper Emissions (lb/hr)	Manganese Emissions (lb/hr)	Mercury Emissions (lb/hr)	Molybdenum Emissions (lb/hr)	Nickel Emissions (lb/hr)	Selenium Emissions (lb/hr)	Vanadium Emissions (lb/hr)	Zinc Emissions (lb/hr)
Steam Boiler	Clayton	14.6	Fall 2007	2.58E-08	3.01E-05	1.72E-08	1.07E-03	2.58E-02	8.73E-06	3.72E-02	4.87E-05	2.86E-06	6.30E-05	1.72E-07	1.57E-05	2.00E-05	1.20E-06	1.22E-05	5.44E-06	3.72E-06	1.57E-05	3.01E-05	3.44E-07	3.29E-05	4.15E-04
A-Line Oven	Eclipse	9.8	Fall 2007	1.73E-08	2.02E-05	1.15E-08	7.21E-04	1.73E-02	5.86E-06	2.50E-02	3.27E-05	1.92E-06	4.23E-05	1.15E-07	1.06E-05	1.35E-05	8.07E-07	8.17E-06	3.65E-06	2.50E-06	1.06E-05	2.02E-05	2.31E-07	2.21E-05	2.79E-04
Totals				4.31E-08	5.02E-05	2.87E-08	1.79E-03	4.31E-02	1.46E-05	6.22E-02	8.13E-05	4.78E-06	1.05E-04	2.87E-07	2.63E-05	3.35E-05	2.01E-06	2.03E-05	9.09E-06	6.22E-06	2.63E-05	5.02E-05	5.74E-07	5.50E-05	6.94E-04

Norsun
Net Change - Criteria Pollutant Emissions
Sugar City, Idaho

Units	Manufacturer	Net Increase Capacity (MMBTU/hr)	PM Emissions (lb/hr)	PM Emissions (tpy)	SOx Emissions (lb/hr)	SOx Emissions (tpy)	NOx Emissions (lb/hr)	NOx Emissions (tpy)	CO Emissions (lb/hr)	CO Emissions (tpy)	VOC Emissions (lb/hr)	VOC Emissions (tpy)
Steam Boiler	Clayton	1.800	0.013	0.059	0.0011	0.005	0.176	0.773	0.148	0.649	0.010	0.043
A-Line Oven	Eclipse	-2.200	0.058	0.252	-0.0013	-0.006	-0.216	-0.945	-0.181	-0.794	-0.012	-0.052
Facility Wide Net Change		-0.400	**0.071**	**0.311**	-0.0002	-0.001	-0.039	-0.172	-0.033	-0.144	-0.002	-0.009

Norsun
Net Change - TAPs Emissions
Sugar City, Idaho

Manufacturers	Manufacturer Rated Capacity (MMBtu/hr)	3-Methylchloranthrene Emissions (lb/hr)	Benzene Emissions (lb/hr)	Benzo(a)pyrene Emissions (lb/hr)	Formaldehyde Emissions (lb/hr)	Hexane Emissions (lb/hr)	Naphthalene Emissions (lb/hr)	Pentane Emissions (lb/hr)	Toluene Emissions (lb/hr)	Arsenic Emissions (lb/hr)	Barium Emissions (lb/hr)	Beryllium Emissions (lb/hr)	Cadmium Emissions (lb/hr)	Chromium (III) Emissions (lb/hr)	Cobalt Emissions (lb/hr)	Copper Emissions (lb/hr)	Manganese Emissions (lb/hr)	Mercury Emissions (lb/hr)	Molybdenum Emissions (lb/hr)	Nickel Emissions (lb/hr)	Selenium Emissions (lb/hr)	Vanadium Emissions (lb/hr)	Zinc Emissions (lb/hr)
Steam Boiler	1.8	3.18E-09	3.71E-06	2.12E-09	1.32E-04	3.18E-03	1.08E-06	4.59E-03	6.00E-06	3.53E-07	7.76E-06	2.12E-08	1.94E-06	2.47E-06	1.48E-07	1.50E-06	6.71E-07	4.59E-07	1.94E-06	3.71E-06	4.24E-08	4.06E-06	5.12E-05
A-Line Oven	-2.2	-3.88E-09	-4.53E-06	-2.59E-09	-1.62E-04	-3.88E-03	-1.32E-06	-5.61E-03	-7.33E-06	-4.31E-07	-9.49E-06	-2.59E-08	-2.37E-06	-3.02E-06	-1.81E-07	-1.83E-06	-8.20E-07	-5.61E-07	-2.37E-06	-4.53E-06	-5.18E-08	-4.96E-06	-6.25E-05
Facility Wide Net Change	-0.4	-7.06E-10	-8.24E-07	-4.71E-10	-2.94E-05	-7.06E-04	-2.39E-07	-1.02E-03	-1.33E-06	-7.84E-08	-1.73E-06	-4.71E-09	-4.31E-07	-5.49E-07	-3.29E-08	-3.33E-07	-1.49E-07	-1.02E-07	-4.31E-07	-8.24E-07	-9.41E-09	-9.02E-07	-1.14E-05
IDAPA 58.01.01.585/586 TAP Screening Levels		2.50E-06	8.00E-04	2.00E-06	5.10E-04	1.20E+01	3.33E+00	1.18E+02	2.50E+01	1.50E-06	0.033	2.80E-05	3.70E-06	0.033	0.0033	0.013	0.067	0.003	0.333	2.70E-05	0.013	0.003	0.667
Emissions Exceed TAP Screening Levels (Yes/No)		No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Norsun Foods, Inc., Sugar City, Idaho
PM Standard Calculations

Compliance with IDAPA Rule 677 PM Standard for Fuel Burning Equipment

Unit	Steam Boiler
Fuel	Natural Gas
Rated Heat Input (MM Btu/hr)	14.6
PM Emission Rate (lb/hr)	0.11
Exit/Flue Gas Flowrate Calculation	
F_d (Table 19-2, EPA Method 19) (dscf/MM Btu) [1,2]	8,710
Exit flowrate @ 0% O_2: (dscfm)	2,119
Exit flowrate @ 3% O_2 for Natural Gas: (dscfm) [3]	2,475
Calculated Grain Loading (gr/dscf @ 3% O_2) [4]	0.005
PM Loading Standard (IDAPA 58.01.01.677) (gr/dscf @ 3% 02)	0.015
Compliance w/ PM Loading Standard	Yes

[1] Appendix A-7 to 40 CFR part 60, Method 19—Determination of sulfur dioxide removal efficiency and particulate, sulfur dioxide and nitrogen oxides emission rates, Table 19-2 (F Factors for

[2] Fd, Volumes of combustion components per unit of heat content (scf/million Btu). Fd for natural gas is 8,710 dscf/106 Btu.

[3] $(\text{Flow}_{3\%}) = (\text{Flow}_{0\%}) \times (20.9/(20.9 - 3))$, where 20.9 = Oxygen concentration in ambient air

[4] (Flow (dscfm) x (7,000 gr/lb) x (PM lb/hr) x (60 min/ hr) = gr/dscf

Norsun Foods, Inc., Sugar City, Idaho
Process Weight Calculations

Compliance with IDAPA Rule 701 PM Standard for Process Weight

Unit	A-line Oven
Process Weight (lb/hr)	15,000
PM Emission Rate (lb/hr)	0.17
Compliance with Allowable Emission Calculation	
Calculated Allowable Emissions (E) (lb/hr) [1]	12.17
Compliance w/ PM Loading Standard	**Yes**

[1] **General Restrictions - New Equipment:**
If PW is less than 9,250 pounds per hour
$E = 0.045(PW)^{0.6}$
If PW is greater than 9,250 pounds per hour
$E = 1.10(PW)^{0.25}$

TYPICAL GENERATOR EMISSIONS : NATURAL GAS

	BOILER HORSE POWER		16	20	33	40	60	80	100	125
	TYP RATING	(MMBTU/HR)	0.670	0.837	1.381	1.674	2.511	3.348	4.184	5.230
	FLUE GAS RATE	(SCFM)	131	164	271	328	492	656	820	1025
	FLUE GAS RATE	(ACFM) 400 F	217	271	448	543	814	1085	1357	1696
	FLUE GAS RATE	(LBS/HR)	579	724	1194	1447	2171	2895	3619	4523
	EXH STACK DIA.	(IN)	8	8	12	15	15	18	18	18
	FLUE VELOCITY	(FT/S) 400 F	10.4	13.0	9.5	7.4	11.1	10.2	12.8	16.0
	NOx	PPMV	40		55		50		75	
	(corr @3% O2)	LBS/DAY	0.8		2.2		3.6		9.0	
	CO	PPMV	140		50		50		50	
		LBS/DAY	1.6		1.2		2.2		3.7	
see note 2	SO2 (est)	PPMV	0.390	0.390	0.390	0.390	0.390	0.390	0.390	0.390
		LBS/DAY	0.010	0.013	0.021	0.026	0.039	0.052	0.065	0.081
see note 4	PARTICULATES	LBS/DAY	0.05		0.10		0.18		0.30	
see note 4	VOC (est)	LBS/DAY	0.09		0.19		0.34		0.56	

	BOILER HORSE POWER		150	200	250	300	350	400	500	600
	TYP RATING	(MMBTU/HR)	6.277	8.369	10.461	12.553	14.645	16.738	20.922	25.106
	FLUE GAS RATE	(SCFM)	1231	1641	2051	2461	2871	3282	4102	4922
	FLUE GAS RATE	(ACFM) 400 F	2035	2714	3392	4070	4749	5427	6784	8141
	FLUE GAS RATE	(LBS/HR)	5428	7237	9047	10856	12665	14474	18093	21712
	EXH STACK DIA.	(IN)	22	22	28	28	28	31.75	31.75	31.75
	FLUE VELOCITY	(FT/S) 400 F	12.8	17.1	13.2	15.9	18.5	16.5	20.6	24.7
	NOx	PPMV	50	60	75	80	85	88	94	98
	(corr @3% O2)	LBS/DAY	9.0	14.3	22.4	28.7	35.6	42.1	56.2	70.3
	CO	PPMV	50	50	50	50	50	50	50	50
		LBS/DAY	5.5	7.3	9.2	11.0	12.8	14.7	18.3	22.0
see note 2	SO2 (est)	PPMV	0.390	0.390	0.390	0.390	0.390	0.390	0.390	0.390
		LBS/DAY	0.098	0.130	0.163	0.195	0.228	0.260	0.325	0.390
see note 4	PARTICULATES	LBS/DAY	0.45	0.60	0.75	0.90	1.05	1.21	1.51	1.81
see note 4	VOC (est)	LBS/DAY	0.84	1.12	1.41	1.69	1.97	2.25	2.81	3.37

NOTES :
1) EMISSION DATA GIVEN FOR MAXIMUM CONTINUOUS FIRING RATE. (15% EXCESS AIR)
2) VALUES FOR SULFUR DIOXIDE ASSUME 92.5% CONVERSION FROM SULFUR CONTENT IN FUEL.(8 PPMW ASSUMED)
3) DATA BASED ON 1028 BTU/CUFT NATURAL GAS.
4) ESTIMATED VALUES BASED ON TYPICAL INDUSTRY DATA.
5) INDICATED VALUES ARE TYPICAL ONLY. ACTUAL VALUES WILL VARY WITH ACTUAL OPERATING CONDITIONS.
6) CONSULT FACTORY FOR GUARANTEED VALUES.

EMISSION.WQ1 BG051697

Eclipse Combustion

RatioMatic Burners

Model RM200

Version 3.10

Main Specifications - RM200

PARAMETER			SPECIFICATIONS			
			English		Metric	
			Capacity @ Chamber Pressure			
			BTU/hr	@ "w.c.	kW	@ mbar
Maximum input	Motor frequency	60 Hz packaged blower	2,450,000	-5.0	718	-12,4
			2,350,000	-3.0	689	-7,5
			2,150,000	0.0	630	0,0
			2,050,000	1.0	601	2,5
			1,950,000	2.0	571	5,0
Note: Contact factory for varying chamber pressures or pressures outside the range: -5.0 to 2.0" w.c. (-12,4 to 5,0 mbar)		50 Hz packaged blower*	2,100,000	0.0	615	0,0
			2,000,000	1.0	586	2,5
			1,900,000	2.0	557	5,0
Minimum input			BTU/hr		kW	
			40,000		12	
Main gas inlet pressure • fuel pressure at ratio regulator inlet	Natural gas Propane or Butane		15 to 55 "w.c. 15 to 30 "w.c.		38 to 137 mbar 38 to 75 mbar	
High fire flame length • measured from the outlet end of the combustor	Natual gas Propane or Butane		50 in 60 in		1300 mm 1500 mm	
Maximum chamber temperature			°F		°C	
	Alloy tube SiC tube		1500 1900		815 1038	
Flame detection			Flame rod or UV scanner			
Fuel			Natural Gas, Propane or Butane. *For any other mixed gas, contact Eclipse Combustion for orifice sizing*			

* At negative chamber pressures, capacities must be reduced. Contact factory.

- All information is based on laboratory testing. Different chamber size and conditions will affect the data.
- Maximum inputs are given for the standard combustion air blower without an air filter.
- All inputs based upon gross calorific values and standard conditions; 1 atmosphere, 70° F (21°C).
- Eclipse reserves the right to change the construction and/or configuration of our products at any time without being obliged to adjust earlier supplies accordingly.

ECLIPSE™
Innovative Thermal Solutions