Statement of Basis

Permit to Construct No. P-2010.0012
Project ID 61562

Glanbia Foods, Inc. Gooding
Gooding, Idaho

Facility ID 047-00008

Final

July 12, 2016
Kelli Wetzel KW
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.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
Btu	British thermal units
CAA	Clean Air Act
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent emissions
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
gr	grains (1 lb = 7,000 grains)
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
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance
O_2	oxygen
PC	permit condition
PM	particulate matter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit
PW	process weight rate
Rules	*Rules for the Control of Air Pollution in Idaho*
scf	standard cubic feet
SIP	State Implementation Plan

SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
T2	Tier II operating permit
TAP	toxic air pollutants
ULSD	ultra-low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compounds
yd^3	cubic yards
$\mu g/m^3$	micrograms per cubic meter

FACILITY INFORMATION

Description

Glanbia Foods, Inc. (Glanbia) operates a cheese and whey manufacturing facility located at 1728 South 2300 East, in Gooding, Idaho. The facility covers approximately 500 acres of land located about 3.7 miles east of the city of Gooding. The facility currently has the following pieces of permitted equipment: An anaerobic digester, a flare, four full-time boilers (boiler No. 1, boiler No. 2, boiler No. 3, and boiler No. 4), an auxiliary boiler (boiler No. 5), a lactose production line including a lactose dryer and a lactose receiving baghouse, and a whey protein concentrate bagging line. The Glanbia facility produces whey powder on the lactose production line.

Lactose whey is produced through a multi-step process starting from evaporation of raw milk into crystallizers to a series of refiners before entering a drying cycle. A primary dryer utilizes steam heat to carry lactose particles to a cyclone. Lactose particles are then discharged from the cyclone to a fluidized bed dryer for final drying. Fine, lactose particles are carried in the airstreams from the primary and fluidized bed dryers to their corresponding baghouses and the mill receiving baghouse for product recovery. Most of the lactose particles are discharged from the fluidized bed to a conveying line for transport to lactose powder bins. Lactose whey is temporarily stored in the powder bins and eventually is transferred through surge hoppers to the lactose bagging line where the finished product is received for packaging into bags and totes.

Permitting History

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).

May 13, 2010	PTC permit P-2010.0012 (A, but will become S upon issuance of this permit) was issued which superseded PTC permit P-2008.0114 (S). This project allowed for a physical change to the Mill Receiving baghouse, the addition of a new Lactose Sifter Receiver and baghouse, and updated emission estimates on the Lactose Primary Dryer baghouse, the Lactose Mill Receiving baghouse, the Lactose Powder Bin baghouse, and the Lactose Surge Hoppers baghouse.
December 10, 2008	PTC permit P-2008.0114 was issued which superseded PTC permit P-2008.0065 (S). This project was for allowing an increase in biogas production from the anaerobic digester, allow biogas to be combusted in full-time Boilers No. 2 and No. 3 for steam generation, and to allow the combustion of biogas in auxiliary Boiler No.5 concurrently with the flare.
June 26, 2008	PTC permit P-2008.0065 was issued which superseded PTC permit P-2007.0052 (S). This project was to increase production on the lactose production line.
August 22, 2007	PTC permit P-2007.0052 was issued which superseded PTC permit P-060454 (S). This project was to increase production on the lactose production line.
March 23, 2007	PTC permit P-060454 was issued (S) which superseded PTC permit P-040404. This project was to remove the Continental boiler and install a new Cleaver-Brooks boiler (that was exempt from permitting).
September 6, 2005	PTC permit P-040404 was issued (S) which superseded PTC permit 047-00008 (issued May 7, 2000). This project was for the installation of an aerobic digester, a biogas/natural gas-fired hot water boiler (auxiliary boiler) and a biogas flare.
May 7, 2000	PTC permit 047-00008 was issued (S) for a facility name change from Avonmore West, Inc. to Glanbia Foods, Inc.
August 2, 1996	PTC permit 047-00008 was issued (S) for a facility expansion and facility-wide #2 distillate fuel oil combustion limit.

June 6, 1994	PTC permit 047-00008 was issued (S) for the installation of a 600 horsepower Cleaver Brooks boiler and added NSPS Subpart Dc emissions standards and removed performance testing requirements for the 600 horsepower Cleaver Brooks boiler.

Application Scope

This PTC is for a minor modification at an existing minor facility.

The applicant has proposed to construct a new whey powder agglomeration production line referred to as the new LUFT facility. The LUFT facility will be fed WPC (whey protein concentrate) powder and WPI (whey protein isolate) from an existing production line. There will be no new fuel burning equipment nor will there be an increase in boiler production or fuel use needed to power the new LUFT facility. There will be one new emission point for the facility, a baghouse that collects particles from the rewet chamber and the dryer. In addition, the distillate fuel oil combusting capability will be removed from Boilers 2 and 3.

Application Chronology

July 31, 2015	DEQ received an application and an application fee.
August 10 – August 25, 2015	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
August 12, 2015	DEQ approved pre-permit construction.
August 26, 2015	DEQ determined that the application was incomplete.
February 4, 2016	DEQ received supplemental information from the applicant.
March 4, 2016	DEQ determined that the application was incomplete.
March 31, 2016	DEQ received supplemental information from the applicant.
April 27, 2016	DEQ determined that the application was complete.
June 13, 2016	DEQ made available the draft permit and statement of basis for peer and regional office review.
June 24, 2016	DEQ made available the draft permit and statement of basis for applicant review.
July 8, 2016	DEQ received the permit processing fee.
July 12, 2016	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

Emissions Units and Control Equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION

Source ID	Source	Control Equipment
Anaerobic Digester	Biogas production: 505,000 standard cubic feet per day	Boilers 2, 3, and 5 and a flare
Biogas Flare/Flare	Manufacturer: Varec Biogas Model: No. 244 W Rated Heat Input: 13.68 MMBtu/hr Date of Installation: 2005	N/A (considered an emission control device when combusting biogas)
Full-time boiler 2/ Blr. 2	Rated Heat Input: 25.1 MMBtu/hr Manufacturer: Cleaver Brooks Model No.: CB600-600 Serial No.: L-90943 Fuels: Natural gas/biogas Date of Installation: July 1992	N/A
Full-time boiler 3/ Blr. 3	Rated Heat Input: 25.1 MMBtu/hr Manufacturer: Cleaver Brooks Model No.: CB600-600 Serial No.: L-79896 Fuels: Natural gas/biogas Date of Installation: December 1996	N/A
Auxiliary boiler 5/Blr.5	Manufacturer: Cleaver Brooks Model No.: CB700-400-30H Rated Heat Input: 16.73 MMBtu/hr Fuels: Natural gas/biogas Date of Installation: 2005	N/A
Full-time boiler 1/ Blr. 1	Rated Heat Input: 26.4 MMBtu/hr Manufacturer: Cleaver Brooks Model No.: CB200-800-150 Fuels: Natural gas Date of Installation: November 14, 2006	N/A
Full-time boiler 4/ Blr. 4	Rated Heat Input: 25.1 MMBtu/hr Manufacturer: Cleaver Brooks Model No.: CB600-600 Serial No.: L-79895 Fuels: Natural gas Date of Installation: December 1999	N/A
Lactose Production Line/Lactose Primary Dryer	Manufacturer: Relco Design Capacity: 11,500 lb/hr of total solids Max. Steam Usage Rate: 3,996 lb/hr	N/A
Lactose Production Line/Lactose Receiving Baghouse	Manufacturer: NIRO Model #: 96LRT80 Style III Type: Reverse pulse jet Number of Bags: 75 Bag Type: polyester Air to Cloth: 4.53 ft/min	N/A, the baghouse is process equipment

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION (continued)

Source ID	Source	Control Equipment
Lactose Primary Dryer Baghouse	Baghouse: LACRECBH Manufacturer: Relco Type: Reverse pulse jet Number of Bags: 230 Bag Type: polyester Air to Cloth: 6.24 ft/min Control Efficiency: 99.99% Grain Loading: 0.009 gr/scf	N/A, the baghouse is process equipment
Lactose Production Line/Lactose Secondary Fluidized Bed Dryer	Manufacturer: Relco Design Capacity: 11,500 lb/hr of total solids Max. Steam Usage Rate: 3,996 lb/hr	N/A, the baghouse is process equipment
Fluidized Bed Dryer Baghouse	Baghouse: FBEDBH Manufacturer: Relco Type: Reverse pulse jet Number of Bags: 180 Bag Type: polyester Air to Cloth: 6.17 ft/min Control Efficiency: 99.99% Grain Loading: 0.031 gr/scf	N/A, the baghouse is process equipment
Mill Process/Mill Receiving Baghouse	Baghouse: MRECBH Manufacturer: Relco Type: Reverse pulse jet Air to Cloth: 6.31 ft/min Control Efficiency: 99.99% Design Capacity: 11,500 lb/hr of total solids Grain Loading: 0.119 gr/scf	N/A, the baghouse is process equipment
Lactose Production Line/Powder Handling, Three Powder Bins	Bin 1 Mfg.: Niro Bin Capacity: 2,850 ft^3 Bin 2 Mfg.: Niro Bin Capacity: 2,850 ft^3 Bin 3 Mfg.: Niro Bin Capacity: 2,850 ft^3	Baghouse: PBINBH Manufacturer: Relco Type: Reverse pulse jet Bag Type: polyester Air to Cloth: 6.90 ft/min Control Efficiency: 99.99% Grain Loading: 0.093 gr/dscf (100 mesh), 0.139 gr/dscf (200 mesh)
Two Lactose Surge Hoppers	Two Lactose Surge Hopper Baghouses	Baghouse: WPCSCRBH Manufacturer: Relco Type: Reverse pulse jet Bag Type: polyester Air to Cloth: 6.89 ft/min Control Efficiency: 99.99% Grain Loading: 0.139 gr/dscf
Lactose Sifter Receiver	Lactose Sifter Receiver Baghouse	Baghouse: PDRYBH Manufacturer: Relco Type: Reverse pulse jet Bag Type: polyester Air to Cloth: 5.77 ft/min Grain Loading: 0.182 gr/dscf
WPC Bagging Line/WPC Surge Hopper	WPC Surge Hopper Baghouse	Baghouse: WPCSCRBH Manufacturer: Donaldson Co., Inc. Type: Reverse pulse jet Bag Type: polyester Air to Cloth: 7.7 ft/min Grain Loading: 0.0044 gr/dscf

Table 1 EMISSIONS UNIT AND CONTROL EQUIPMENT INFORMATION (continued)

Source ID	Source	Control Equipment
WPC Bagging Line/WPC Bagging Line	WPC Nuisance Baghouse	Baghouse: WPCNUSBH Manufacturer: Donaldson Co., Inc. Type: Reverse pulse jet Bag Type: polyester Air to Cloth: 7.7 ft/min Grain Loading: 0.0044 gr/dscf
Agglomeration Line/LUFT Facility	LUFT Facility Baghouse	Baghouse: LUFTBH Manufacturer: Custom Fabricating & Repair Type: pulse jet Bag Type: polyester micro denier Air to Cloth: 5.0 ft/min Grain Loading: 0.01 gr/dscf

Emissions Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit an emission inventory was developed for the cheese and whey processing plant. Emissions estimates were based on emission factors from AP-42, operational limits, operation of 8,760 hours per year, source tests and manufacturer's guarantees and process information specific to the facility for this proposed project.

Pre-Project Potential to Emit

The following table presents the pre-project potential to emit for all criteria and GHG pollutants from all emissions units at the facility as submitted by the Applicant and verified by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 2 PRE-PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM_{10}		$PM_{2.5}$		SO_2		NO_X		CO		VOC		CO_2e	
	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]	lb/hr[(a)]	T/yr[(b)]
Biogas Flare	0.10	0.43	0.10	0.43	5.57	24.4	0.93	4.07	5.06	22.2	0.86	3.77	1432	6272
Full-Time Boiler 1, (Natural Gas Combustion)	0.19	0.83	0.19	0.83	0.01	0.07	2.50	11.0	2.10	9.20	0.14	0.60	2805	12284
Full-Time Boiler 2 (Natural Gas Combustion)	0.17	0.76	0.17	0.76	0.03	0.13	2.02	8.87	0.62	2.73	0.07	0.30	2677	11725
Full-Time Boiler 2, (Biogas Combustion)	0.09	0.40	0.09	0.40	3.53	15.5	1.20	5.26	1.01	4.42	0.07	0.29		
Full-Time Boiler 2, (Distillate Fuel Oil Combustion)[(c)]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source	PM_{10}		$PM_{2.5}$		SO_2		NO_X		CO		VOC		CO_2e	
Full-Time Boiler 3, (Natural Gas Combustion)	0.17	0.76	0.17	0.76	0.03	0.13	2.02	8.87	0.62	2.73	0.07	0.30	2677	11725
Full-Time Boiler 3, (Biogas Combustion)	0.09	0.40	0.09	0.40	3.53	15.5	1.20	5.26	1.01	4.42	0.07	0.29		
Full-Time Boiler 3, (Distillate Fuel Oil Combustion)[c]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Full-Time Boiler 4, (Natural Gas Combustion)	0.18	0.79	0.18	0.79	0.01	0.06	2.38	10.4	2.00	8.74	0.13	0.57	2666	11679
Auxiliary Boiler 5, (Natural Gas and Biogas Combustion)	0.14	0.60	0.14	0.60	7.66	33.6	1.61	7.07	2.05	8.99	0.22	0.96	1784	7815
WPC Dryer	0.07	0.29	0.07	0.29	0.01	0.02	0.87	3.81	0.73	3.20	0.05	0.21	0.00	0.00
Backup Electrical Generator	0.57	0.06	0.57	0.06	2.88	0.29	18.2	1.82	4.84	0.48	0.51	0.05	20	88
Heater 1	0.01	0.05	0.01	0.05	0.001	0.004	0.14	0.62	0.12	0.52	0.01	0.03	903	3955
Heater 2	0.04	0.19	0.04	0.19	0.003	0.01	0.56	2.44	0.47	2.05	0.03	0.13		
Heater 3	0.01	0.04	0.01	0.04	0.001	0.003	0.13	0.57	0.11	0.48	0.01	0.03		
Lactose Receiving Baghouse	0.76	3.34	0.76	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lactose Primary Dryer Baghouse	1.21	5.29	1.21	5.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lactose Fluidized Bed Dryer Baghouse	1.70	7.45	1.70	7.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lactose Mill Receiving Baghouse	1.12	4.91	0.09	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lactose Powder Bin Baghouse	0.87	3.83	0.04	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lactose Surge Hoppers Baghouse	1.22	5.37	0.08	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WPC Surge Hopper Baghouse	0.03	0.13	0.03	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WPC Nuisance Baghouse	0.11	0.50	0.11	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Project Totals	**8.85**	**36.42**	**5.85**	**23.23**	**23.27**	**89.72**	**33.76**	**70.06**	**20.74**	**70.16**	**2.24**	**7.53**	**14,964**	**65,543**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.
c) Petroleum distillate fuel capability was removed from Boiler 2 and Boiler 3 after the issuance of P-2010.0012.

Post Project Potential to Emit

Post project Potential to Emit is used to establish the change in emissions at a facility and to determine the facility's classification as a result of this project. Post project Potential to Emit includes all permit limits resulting from this project.

The following table presents the post project Potential to Emit for criteria and GHG pollutants from all emissions units at the facility as determined by DEQ staff. See Appendix A for a detailed presentation of the calculations of these emissions for each emissions unit.

Table 3 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM_{10}		$PM_{2.5}$		SO_2		NO_X		CO		VOC		CO_2e	
	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]
Biogas Flare	0.10	0.43	0.10	0.43	5.57	24.4	0.93	4.07	5.06	22.2	0.86	3.77	1432	6272
Full-Time Boiler 1, (Natural Gas Combustion)	0.19	0.83	0.19	0.83	0.01	0.07	2.50	11.0	2.10	9.20	0.14	0.60	2805	12284
Full-Time Boiler 2 (Natural Gas Combustion)	0.17	0.76	0.17	0.76	0.03	0.13	2.02	8.87	0.62	2.73	0.07	0.30	2677	11725
Full-Time Boiler 2, (Biogas Combustion)	0.09	0.40	0.09	0.40	3.53	15.5	1.20	5.26	1.01	4.42	0.07	0.29		
Full-Time Boiler 2, (Distillate Fuel Oil Combustion)[c]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Full-Time Boiler 3, (Natural Gas Combustion)	0.17	0.76	0.17	0.76	0.03	0.13	2.02	8.87	0.62	2.73	0.07	0.30	2677	11725
Full-Time Boiler 3, (Biogas Combustion)	0.09	0.40	0.09	0.40	3.53	15.5	1.20	5.26	1.01	4.42	0.07	0.29		
Full-Time Boiler 3, (Distillate Fuel Oil Combustion)[c]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Full-Time Boiler 4, (Natural Gas Combustion)	0.18	0.79	0.18	0.79	0.01	0.06	2.38	10.4	2.00	8.74	0.13	0.57	2666	11679
Auxiliary Boiler 5, (Natural Gas and Biogas Combustion)	0.14	0.60	0.14	0.60	7.66	33.6	1.61	7.07	2.05	8.99	0.22	0.96	1784	7815
WPC Dryer	0.07	0.29	0.07	0.29	0.01	0.02	0.87	3.81	0.73	3.20	0.05	0.21	0.00	0.00
Backup Electrical Generator	0.57	0.06	0.57	0.06	2.88	0.29	18.2	1.82	4.84	0.48	0.51	0.05	20	88
Heater 1	0.01	0.05	0.01	0.05	0.001	0.004	0.14	0.62	0.12	0.52	0.01	0.03	903	3955
Heater 2	0.04	0.19	0.04	0.19	0.003	0.01	0.56	2.44	0.47	2.05	0.03	0.13		
Heater 3	0.01	0.04	0.01	0.04	0.001	0.003	0.13	0.57	0.11	0.48	0.01	0.03		
Lactose Receiving Baghouse	0.76	3.34	0.76	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source	PM_{10}		$PM_{2.5}$		SO_2		NO_X		CO		VOC		CO_2e	
Lactose Primary Dryer Baghouse	1.21	5.29	1.21	5.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lactose Fluidized Bed Dryer Baghouse	1.70	7.45	1.70	7.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lactose Mill Receiving Baghouse	1.12	4.91	0.09	0.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lactose Powder Bin Baghouse	0.87	3.83	0.04	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lactose Surge Hoppers Baghouse	1.22	5.37	0.08	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WPC Surge Hopper Baghouse	0.03	0.13	0.03	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WPC Nuisance Baghouse	0.11	0.50	0.11	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LUFT Facility Baghouse	0.76	3.32	0.76	3.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Post-Project Totals	**9.61**	**39.74**	**6.61**	**26.55**	**23.27**	**89.72**	**33.76**	**70.06**	**20.74**	**70.16**	**2.24**	**7.53**	**14,964**	**65,543**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.
c) Petroleum distillate fuel capability was removed from Boiler 2 and Boiler 3 after the issuance of P-2010.0012 and this fuel option will be removed with the issuance of this permit.

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 4 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Source	PM_{10}		$PM_{2.5}$		SO_2		NO_X		CO		VOC		CO_2e	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Pre-Project Potential to Emit	8.85	36.42	5.85	23.23	23.27	89.72	33.76	70.06	20.74	70.16	2.24	7.53	14964	65543
Post Project Potential to Emit	9.61	39.74	6.61	26.55	23.27	89.72	33.76	70.06	20.74	70.16	2.24	7.53	14964	65543
Changes in Potential to Emit	**0.76**	**3.32**	**0.76**	**3.32**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Non-Carcinogenic TAP Emissions

There was no increase in non-carcinogenic toxic air pollutants (TAPs) associated with this permit modification.

Carcinogenic TAP Emissions

There was no increase in carcinogenic toxic air pollutants (TAPs) associated with this permit modification.

Ambient Air Quality Impact Analyses

As presented in the Modeling Memo in Appendix B, the estimated emission rates of PM_{10} and $PM_{2.5}$ from this project exceeded applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline[1]. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

The applicant has demonstrated pre-construction compliance to DEQ's satisfaction that emissions from this facility will not cause or significantly contribute to a violation of any ambient air quality standard. The applicant has also demonstrated pre-construction compliance to DEQ's satisfaction that the emissions increase due to this permitting action will not exceed any acceptable ambient concentration (AAC) or acceptable ambient concentration for carcinogens (AACC) for toxic air pollutants (TAP). A summary of the Ambient Air Impact Analysis for TAP is provided in Appendix A.

An ambient air quality impact analyses document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix B).

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

The facility is located in Gooding County, which is designated as attainment or unclassifiable for $PM_{2.5}$, PM_{10}, SO_2, NO_2, CO, and Ozone. Refer to 40 CFR 81.313 for additional information.

Facility Classification

The AIRS/AFS facility classification codes are as follows:

For THAPs (Total Hazardous Air Pollutants) Only:

A = Use when any one HAP has actual or potential emissions $\geq$ 10 T/yr or if the aggregate of all HAPS (Total HAPs) has actual or potential emissions $\geq$ 25 T/yr.

SM80 = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the permit sets limits $\geq$ 8 T/yr of a single HAP or $\geq$ 20 T/yr of THAP.

SM = Use if a synthetic minor (potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable limitations) and the potential HAP emissions are limited to < 8 T/yr of a single HAP and/or < 20 T/yr of THAP.

B = Use when the potential to emit without permit restrictions is below the 10 and 25 T/yr major source threshold

UNK = Class is unknown

For All Other Pollutants:

A = Actual or potential emissions of a pollutant are $\geq$ 100 T/yr.

SM80 = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are $\geq$ 80 T/yr.

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[1] Criteria pollutant thresholds in Table 2, State of Idaho Guideline for Performing Air Quality Impact Analyses, Doc ID AQ-011, September 2013.

SM = Use if a synthetic minor for the applicable pollutant (potential emissions fall below 100 T/yr if and only if the source complies with federally enforceable limitations) and potential emissions of the pollutant are < 80 T/yr.

B = Actual and potential emissions are < 100 T/yr without permit restrictions.

UNK = Class is unknown.

Table 5 REGULATED AIR POLLUTANT FACILITY CLASSIFICATION

Pollutant	Uncontrolled PTE (T/yr)	Permitted PTE (T/yr)	Major Source Thresholds (T/yr)	AIRS/AFS Classification
PM/PM_{10}	344,300	39.74	**100**	SM
$PM_{2.5}$	214,200	26.73	**100**	SM
SO_2	89.58	89.58	**100**	B
NO_X	70.02	70.02	**100**	B
CO	70.12	70.12	**100**	B
VOC	7.53	7.53	**100**	B

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 .....Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for modified emissions source. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 .....Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625 .....Visible Emissions

The sources of PM_{10} emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 2.5, 3.5, 4.4, 5.4, and 6.4.

Standards for New Sources (IDAPA 58.01.01.676)

IDAPA 58.01.01.676 .....Standards for New Sources

Process Boilers 1, 2, 3, and 4 are subject to the particulate matter grain loading standard of 0.015 gr/dscf, corrected to 3% oxygen because all are allowed to combust gas. The auxiliary boiler 5 is also subject to this standard for both natural gas and biogas, which are both categorized as gaseous fuels. Based on the calculations submitted by the permittee, compliance with the grain loading standard has been demonstrated for boilers 2, 3, and 5 using the "F-factor" calculation method contained in 40 CFR 60, Appendix A, Method 19. It is assumed that process boilers 1 and 4 also comply with the grain loading standard for fuel burning equipment combusting natural gas.

This requirement is assured by PTC conditions 2.6 and 3.4.

Particulate Matter – New Equipment Process Weight Limitations (IDAPA 58.01.01.701)

IDAPA 58.01.01.701 ..... Particulate Matter – New Equipment Process Weight Limitations

IDAPA 58.01.01.700 through 703 set PM emission limits for process equipment based on when the piece of equipment commenced operation and the piece of equipment's process weight (PW) in pounds per hour (lb/hr). IDAPA 58.01.01.701 and IDAPA 58.01.01.702 establish PM emission limits for equipment that commenced operation on or after October 1, 1979 and for equipment operating prior to October 1, 1979, respectively.

For equipment that commenced operation on or after October 1, 1979, the PM allowable emission rate (E) is based on one of the following four equations:

IDAPA 58.01.01.701.01.a: If PW is $< 9{,}250$ lb/hr; $E = 0.045\ (PW)^{0.60}$

IDAPA 58.01.01.701.01.b: If PW is $\geq 9{,}250$ lb/hr; $E = 1.10\ (PW)^{0.25}$

For equipment that commenced prior to October 1, 1979, the PM allowable emission rate is based on one of the following equations:

IDAPA 58.01.01.702.01.a: If PW is $< 17{,}000$ lb/hr; $E = 0.045\ (PW)^{0.60}$

IDAPA 58.01.01.702.01.b: If PW is $\geq 17{,}000$ lb/hr; $E = 1.12\ (PW)^{0.27}$

For the five existing emissions units being modified as a result of this project that were installed on or after October 1, 1979, E is calculated as follows:

Lactose Primary Dryer Baghouse Calculation:

Proposed throughput = 1,725 lb/hr

Therefore, E is calculated as:

$E = 0.045\ (PW)^{0.60} = 0.045 \times (1{,}725\ \text{lb/hr})^{0.60} = 3.94$ lb-PM/hr

As presented previously in the Emissions Inventory Section of this evaluation the post project PTE for this emissions unit is 1.21 lb-PM_{10}/hr. Assuming 50% of PM is PM_{10}, means that the PM emissions rate for this unit is 2.42 lb-PM/hr (2 x 1.21 lb-PM_{10}/hr). Therefore, compliance with this requirement has been demonstrated.

Lactose Fluidized Bed Dryer Baghouse Calculation:

Proposed throughput = 4,600 lb/hr

Therefore, E is calculated as:

$E = 0.045\ (PW)^{0.60} = 0.045 \times (4{,}600\ \text{lb/hr})^{0.60} = 7.09$ lb-PM/hr

As presented previously in the Emissions Inventory Section of this evaluation the post project PTE for this emissions unit is 1.70 lb-PM_{10}/hr. Assuming 50% of PM is PM_{10}, means that the PM emissions rate for this unit is 3.40 lb-PM/hr (2 x 1.70 lb-PM_{10}/hr). Therefore, compliance with this requirement has been demonstrated.

Lactose Mill Receiving Baghouse Calculation:

Proposed throughput = 1,600 lb/hr

Therefore, E is calculated as:

$E = 0.045\ (PW)^{0.60} = 0.045 \times (1{,}600\ \text{lb/hr})^{0.60} = 3.76$ lb-PM/hr

As presented previously in the Emissions Inventory Section of this evaluation the post project PTE for this emissions unit is 1.12 lb-PM_{10}/hr. Assuming 50% of PM is PM_{10}, means that the PM emissions rate for this unit is 2.24 lb-PM/hr (2 x 1.12 lb-PM_{10}/hr). Therefore, compliance with this requirement has been demonstrated.

Lactose Powder Bin Baghouse Calculation:

Proposed throughput = 1,250 lb/hr

Therefore, E is calculated as:

$E = 0.045\ (PW)^{0.60} = 0.045 \times (1{,}250\ lb/hr)^{0.60} = 3.25\ lb\text{-}PM/hr$

As presented previously in the Emissions Inventory Section of this evaluation the post project PTE for this emissions unit is 0.87 lb-PM_{10}/hr. Assuming 50% of PM is PM_{10}, means that the PM emissions rate for this unit is 1.74 lb-PM/hr (2 x 0.87 lb-PM_{10}/hr). Therefore, compliance with this requirement has been demonstrated.

Lactose Surge Hoppers Baghouse and Lactose Sifter Receiver Baghouse Calculation:

Proposed throughput = 1,750 lb/hr

Therefore, E is calculated as:

$E = 0.045\ (PW)^{0.60} = 0.045 \times (1{,}750\ lb/hr)^{0.60} = 3.97\ lb\text{-}PM/hr$

As presented previously in the Emissions Inventory Section of this evaluation the post project PTE for this emissions unit is 1.22 lb-PM_{10}/hr. Assuming 50% of PM is PM_{10}, means that the PM emissions rate for this unit is 2.44 lb-PM/hr (2 x 1.22 lb-PM_{10}/hr). Therefore, compliance with this requirement has been demonstrated.

LUFT Baghouse Calculation:

Proposed throughput = 3,000 lb/hr

Therefore, E is calculated as:

$E = 0.045\ (PW)^{0.60} = 0.045 \times (3{,}000\ lb/hr)^{0.60} = 5.49\ lb\text{-}PM/hr$

As presented previously in the Emissions Inventory Section of this evaluation the post project PTE for this emissions unit is 0.76 lb-PM_{10}/hr. Assuming 50% of PM is PM_{10}, means that the PM emissions rate for this unit is 1.52 lb-PM/hr (2 x 0.76 lb-PM_{10}/hr). Therefore, compliance with this requirement has been demonstrated.

Rules for Control of Odors (IDAPA 58.01.01.775-776)

IDAPA 58.01.01.775-776 Rules for the Control of Odors

The facility is subject to the general restrictions for the control of odors from this facility. This requirement is assured by PTC condition 2.7.

Rules for Control of Incinerators – Emissions Limits (IDAPA 58.01.01.785)

IDAPA 58.01.01.785 Rules for Control of Incinerators – Emissions Limits

The flares may be subject to the particulate matter emission rate standard for refuse incinerators. This is because an incinerator is defined by IDAPA 58.01.01.006.58, which reads in part:

> "Any source consisting of a furnace and all appurtenances thereto designed for the destruction of refuse by burning. For purposes of these rules, the destruction of any combustible liquid or gaseous material by burning in a flare stack shall be considered incineration."

However, the intent of this Rule is to limit particulate matter emissions from the combustion of refuse. Refuse is not defined in IDAPA 58.01.01.006; therefore, the common definition is applied as follows.

> "Refuse: Something that is discarded as worthless or useless; rubbish; trash; garbage."

Since the flares at this facility combust landfill gas exclusively and do not combust "refuse," it was determined that this Rule does not apply.

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

IDAPA 58.01.01.301 ..... Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for PM_{10}, SO_2, NO_X, CO, and VOC or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 ..... Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr, the applicable PSD major source threshold.

NSPS Applicability (40 CFR 60)

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

On July 13, 2005, EPA Region 10 made a determination on the permittee's alternative monitoring, recordkeeping, and reporting requirements for boilers 1 through 5, for NSPS Subpart Dc. EPA Region 10 determined that the existing process boilers 2, 3, and 4 are subject to 40 CFR 60.4-Subpart Dc due to the construction dates and rated heat input capacities of each boiler. The installation date of boiler 1 pre-dates NSPS-Subpart Dc applicability, and this emissions unit is not subject to any NSPS requirements. DEQ has been delegated this Subpart.

Boiler 4 is permitted to combust natural gas only. Boilers 2 and 3 are permitted to combust natural gas or biogas. Initial notification requirements apply to each of these boilers as an affected facility under 40 CFR 60-Subpart Dc, although initial notification should have been provided to EPA when the emissions units were originally constructed.

The permittee previously obtained a formal written determination of the monitoring and recordkeeping requirements for all five boilers at the Gooding facility, and this previous determination will be followed.

NSPS Subpart Dc monitoring and recordkeeping applies to the process boilers as follows:

Boiler 1 is not subject to NSPS Subpart Dc because it was constructed prior to the applicability date of the NSPS. Boiler 1 is fired exclusively by natural gas. Monitoring and recordkeeping established by the State of Idaho will follow the guidelines set for the rest of the boilers.

Boilers 2 and 3 operate on natural gas or biogas. EPA previously approved monthly recordkeeping of natural gas but not biogas.

Boilers 2 and 3 will each have a biogas meter. Daily monitoring and recordkeeping frequency is required for biogas.

Boiler 4 operates on natural gas exclusively and EPA has approved monthly recordkeeping of fuel usage.

Boilers 2, 3, and 4 were previously approved to share a single natural gas usage meter and the fuel usage will be monitored and recorded on a monthly basis. If more than one boiler is fired on natural gas during the monthly period, the permittee may prorate natural gas usage by dividing the heat input capacity of each boiler by the aggregated design heat input capacities of the boilers operated during that monthly period.

Boiler 5 is fired primarily on biogas generated by the anaerobic digester, and by natural gas as a backup fuel. Natural gas is also combusted at the same time as the biogas. EPA Region 10 denied approval of an alternative monitoring and recordkeeping of fuel consumption by boiler 5 pending a determination that the biogas contains less than 0.5 wt % of sulfur with little variability in sulfur content. Monitoring and recordkeeping is required to be conducted daily in accordance with 40 CFR 60.48c(g).

Therefore, boilers 2 and 3 will each have a biogas meter. Monthly monitoring and recordkeeping frequency is required for natural gas. Daily monitoring and recordkeeping frequency is required for biogas usage. These requirements are assured by PTC condition 2.13.

§ 60.41c Definitions

The definitions of this section apply to the facility.

§ 60.42c Standard for sulfur dioxide (SO_2) emissions

Boilers 2 , 3, 4 and 5 have rated heat input capacities of less than 30 MMBtu/hr and are operated on natural gas and/or biogas. These boilers are not subject to the sulfur dioxide emission standards specified by 40 CFR 60.42c.

§ 60.43c Standard for particulate matter (PM) emissions

This section applies to units that combusts coal or combusts mixtures of coal with other fuels and that have a heat input capacity of 8.7 MW (30 MMBtu/hr) or greater. All four of the boilers located at this facility subject to this subpart do not combust coal. This requirement is assured by PTC condition 2.10. Therefore, this section does not apply and no further discussion is required.

§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide emissions

This section applies to units that have proposed to meet the 0.05 lb-SO_2/MMBtu limit of this subpart. Because the distillate fuel oil capability has been removed from Boilers 2 and 3, this section no longer applies.

§ 60.45c Compliance and Performance Test Methods and Procedures for Particulate Matter

The requirements of 40 CFR 60.45c do not apply because the requirements of 40 CFR 60.43c do not apply.

§ 60.48c Reporting and recordkeeping requirements

Section (e) requires that the owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under §60.42c shall keep records and submit reports as required under paragraph (d) of this section. Because the distillate fuel oil capability has been removed from Boilers 2 and 3, this section no longer applies.

Section (g)(1) requires that except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.

As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in §60.48c(f) to demonstrate compliance with the SO_2 standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in §60.42C to use fuel certification to demonstrate compliance with the SO_2 standard, and/or fuels, excluding coal and residual oil, 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.

48g(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.

These requirements are assured by PTC conditions 2.12.

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT Applicability (40 CFR 63)

The facility is not subject to any MACT standards in 40 CFR Part 63.

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.

Permit Condition 1.1 was revised to explain what modifications were being performed as a result of this project.

Permit Condition 1.3 was revised to explain which PTC is being replaced as a result of this project.

Table 1.1 was revised to include the new agglomeration line and LUFT facility baghouse being installed as a result of this project.

Permit Condition 2.3 and Table 2.2 were revised to remove the emission limits for boilers 2 and 3 when combusting distillate fuel oil.

Old Permit Condition 8 was removed because distillate fuel oil has been removed as a fuel option for boilers 2 and 3.

Permit Condition 2.6 (Old permit condition 11) has been revised to remove the reference to boilers 2 and 3 burning distillate fuel oil.

Permit Condition 2.10 was revised to remove distillate fuel oil as an option to fuel boilers 2 and 3.

Old Permit Conditions 16, 17, 19, and 20 were removed because distillate fuel oil has been removed as a fuel option for boilers 2 and 3.

Permit Condition 2.14 was revised to update the physical address of the Twin Falls Regional Office.

Permit Conditions 4.6 and 5.6 were revised to update the General Provision numbers referenced in the permit conditions and to update the physical address of the Twin Falls Regional Office.

Permit Condition 6.1 was added to provide a process description of the new LUFT facility.

Permit Condition 6.2 was added to include the new LUFT facility baghouse.

Permit Condition 6.3 was added to set an emission limit for the new LUFT facility baghouse per the emission inventory information provided by the Applicant.

Permit Condition 6.4 was added to include the new LUFT facility baghouse to the 20% opacity limit requirements.

Permit Condition 6.5 was added to ensure that a baghouse is installed on the new whey powder agglomeration line to control PM emissions.

Permit Condition 6.6 was added to ensure that the new LUFT facility baghouse has a baghouse/filter system procedures document that will be maintained by the permittee.

Permit Condition 6.7 was added to ensure compliance with the opacity limit permit condition.

Permit Condition 6.8 was added to ensure compliance with recordkeeping requirements.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there were no comments on the application and there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

APPENDIX A – EMISSIONS INVENTORIES

Emissions Unit/Point Sources	PM_{10}		$PM_{2.5}$		NOx		CO		VOC		Lead		HAPs/TAPs	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Fines Collection (Baghouse)	0.8	3.32	0.8	3.32	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Agglomeration Baghouse Post Project Hourly and Annual PM10 Emissions

	Operation Hours/day	Operations Days/Week	Operations Weeks/year	Operations Hours/year	Grain Loading EF (gr/dscfm)[1]	Design Flow Rate (dscfm)	PM Emissions (gr/min)[3]	Emissions PM (gr/hr)	Emissions PM (lb/hr)	Annual PM Emissions (T/yr)
Fines Collection (Baghouse)	24	7	52	8,760	0.01	8,854	89	5,313	0.76	3.32

[1] Based on manufacturer's guarantee

[2] Based on 11,850 scfm design rate

[3] PM emissions are assumed to be 100% PM_{10} and 99.97% $PM_{2.5}$ based on manufacture's design documentation.

Stack Flow (acfm)	Ps (in atm)	Ts (F)	Ta (F)	Elevation (ft)	Pa (in atm)	=	Stack Flow (dscf)
11646	0.9988	68	150	3,573	0.88		8,854.40

Agglomeration Baghouse Post Project Hourly and Annual PM2.5 Emissions

	Operation Hours/day	Operations Days/Week	Operations Weeks/year	Operations Hours/year	Grain Loading EF (gr/dscfm)[1]	Design Flow Rate (dscfm)[2]	PM Emissions (gr/min)[3]	Emissions PM (gr/hr)	Emissions PM (lb/hr)	Annual PM Emissions (T/yr)
Fines Collection (Baghouse)	24	7	52	8,760	0.01	8,854	89	5,313	0.76	3.32

[1] Based on manufacturer's guarantee

[2] Based on 11,850 scfm design rate

[3] PM emissions are assumed to be 100% PM_{10} and 99.97% $PM_{2.5}$ based on manufacture's design documentation.

Glanbia Whey Processing Facility
Gooding, ID
CO_2e Emission Estimates

Source	Heat Input[1]	Hours /Year[2]	Annual Fuel Use	Fuel Type	Emission Factors (kg/MMBtu)[3]				CO_2e (metric tons/yr)
					CO_2	CH_4	N_2O	CO_2e	
Boiler 1 (NG)	26.4 MMBtu/hr	8760	231,264 MMBtu/yr	Natural Gas	53.06	0.00100	0.00010	53.11	12,284
Boiler 2 (NG/Bio)	25.1 MMBtu/hr	8760	219,876 MMBtu/yr	NG/Biogas	53.06	0.00320	0.00063	53.33	11,725
Boiler 3 (NG/Bio)	25.1 MMBtu/hr	8760	219,876 MMBtu/yr	NG/Biogas	53.06	0.00320	0.00063	53.33	11,725
Boiler 4 (NG)	25.1 MMBtu/hr	8760	219,876 MMBtu/yr	Natural Gas	53.06	0.00100	0.00010	53.11	11,679
Boiler 5 (NG/Bio)	16.73 MMBtu/hr	8760	146,555 MMBtu/yr	NG/Biogas	53.06	0.00320	0.00063	53.33	7,815
Heaters 1,2,3	8.50 MMBtu/hr	8760	74,460 MMBtu/yr	Natural Gas	53.06	0.00100	0.00010	53.11	3,955
Flare	13.68 MMBtu/hr	8760	119,837 MMBtu/yr	Biogas	52.07	0.00320	0.00063	52.34	6,272
Generator	5.63 MMBtu/hr	210	1,182 MMBtu/yr	Distillate	73.96	0.00300	0.00060	74.21	88
								Total Potential CO_2e (metric tons/year)	**65,543**

NOTES:

[1] Heat Input based on unit size, as provided in currrent permit. Heat input for Heaters (combined) and Backup Generator were determined based on emission rates used in permitting analysis and standard EPA AP-42 emission factors for relevant source type.

[2] Hours of operation as provided in currrent permit (8760 hours; no annual limits), except for Backup Generator which is assumed to have 210 hours per year for non-emergency use (as applied in permitting analysis).

[3] Greenhouse gas (GHG) emission factors from standard EPA GHG inventory guidelines (https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf). For sources with both Natural Gas and Biogas fuels, the worst-case factors were applied. Carbon Dioxide equivalent (CO_2e) emission factor based on Global Warming Potentials (GWP) as follows:

GHG	GWP
Carbon Dioxide (CO_2)	1
Methane (CH_4)	25
Nitrous Oxide (N_2O)	298

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM

DATE: June 24, 2015

TO: Kelli Wetzel, Permit Writer, Air Program

FROM: Darrin Mehr, Analyst, Air Program

PROJECT: P-2010.0012 PTOJ 61562 – 15-Day Pre-Permit Construction Authorization Permit to Construct (15-Day PTC) Application for Glanbia Foods, Inc., for the Whey Powder Agglomeration Production Project at the Existing Facility Near Gooding, Idaho

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs)

Contents

Acronyms, Units, and Chemical Nomenclature

AAC	Acceptable Ambient Concentration of a non-carcinogenic TAP
AACC	Acceptable Ambient Concentration of a Carcinogenic TAP
acfm	Actual cubic feet per minute
AECOM	AECOM, project permitting and modeling consultant for Glanbia
AERMAP	The terrain data preprocessor for AERMOD
AERMET	The meteorological data preprocessor for AERMOD
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
Appendix W	40 CFR 51, Appendix W – Guideline on Air Quality Models
BPIP	Building Profile Input Program
BRC	Below Regulatory Concern
CFR	Code of Federal Regulations
CMAQ	Community Multi-Scale Air Quality Modeling System
CO	Carbon Monoxide
DEQ	Idaho Department of Environmental Quality
EL	Emissions Screening Level of a TAP
EPA	United States Environmental Protection Agency
GEP	Good Engineering Practice
Glanbia	Glanbia Foods, Inc. – Gooding Facility
hr	hours
Idaho Air Rules	Rules for the Control of Air Pollution in Idaho, located in the Idaho Administrative Procedures Act 58.01.01
ISCST3	Industrial Source Complex Short Term 3 dispersion model
K	Kelvin
m	Meters
m/s	Meters per second
MMBtu	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NED	National Elevation Dataset
NO	Nitrogen Oxide
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen
NWS	National Weather Service
O_3	Ozone
Pb	Lead
PM_{10}	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 10 micrometers
$PM_{2.5}$	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 2.5 micrometers
ppb	parts per billion
PRIME	Plume Rise Model Enhancement
PTC	Permit to Construct
PTE	Potential to Emit
SIL	Significant Impact Level
SO_2	Sulfur Dioxide
TAP	Toxic Air Pollutant
T/yr	tons per year

USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOCs	Volatile Organic Compounds
$\mu g/m^3$	Micrograms per cubic meter of air

1.0 Summary

1.1 General Project Summary

On July 31, 2015, Glanbia Foods, Inc. (Glanbia) submitted an application for a 15-Day PTC for a modification to their existing facility located near Gooding, Idaho. The modification project is for the installation of a new air pollution emissions source for the Whey Powder Agglomeration Production Project. The facility is an existing permitted facility.

Project-specific air quality impact analyses involving atmospheric dispersion modeling of estimated emissions associated with the proposed modification were submitted to DEQ to demonstrate that the modification would not cause or significantly contribute to a violation of any ambient air quality standard (IDAPA 58.01.01.203.02 and 203.03 [Idaho Air Rules Section 203.02 and 203.03]). AECOM, Glanbia's permitting consultant, submitted analyses and applicable information and data to enable DEQ to evaluate potential impacts to ambient air.

AECOM performed project-specific air quality impact analyses to demonstrate that allowable emissions from the proposed project comply with applicable air quality standards. The DEQ review summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the pollutant dispersion modeling analyses used to demonstrate that the estimated emissions associated with operation of the facility as modified will not cause or significantly contribute to a violation of the applicable air quality standards. This review did not evaluate compliance with other rules or analyses that do not pertain to the air impact analyses. This modeling review also did not evaluate the accuracy of emissions estimates. Evaluation of emissions estimates was the responsibility of the permit writer and is addressed in the main body of the DEQ Statement of Basis.

The submitted air quality impact analyses: 1) utilized appropriate methods and models according to established DEQ/EPA rules, policies, guidance, and procedures; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emissions estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that predicted pollutant concentrations from emissions associated with the proposed project as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or b) that predicted pollutant concentrations from applicable emissions associated with the project as modeled, when appropriately combined with co-contributing sources and background concentrations, were below applicable National Ambient Air Quality Standards (NAAQS) at ambient air locations where and when the project has a significant impact; 5) showed that Toxic Air Pollutant (TAP) emissions increases associated with the project do not result in increased emissions and modeling was not required to demonstrate compliance with any TAPs increments. Table 1 presents key assumptions and results to be considered in the development of the permit.

Table 1. KEY CONDITIONS USED IN MODELING ANALYSES	
Criteria/Assumption/Result	**Explanation/Consideration**
$PM_{2.5}$ NAAQS The facility-wide 24-hour and annual average $PM_{2.5}$ impacts were predicted to be 99% of the allowable NAAQS. The proposed baghouse (model ID LUFTBH) is the only emission point being added for this project. Emissions are 0.76 pounds per hour (lb/hr) of PM_{10} and $PM_{2.5}$, which is 13% of the modeled facility-wide short-term average $PM_{2.5}$ emissions.	The new LUFTBH point source potential emissions are a considerable portion of the facility-wide allowable $PM_{2.5}$ emissions. Maintaining the $PM_{2.5}$ emission rate at or below the modeled rate is an important component for NAAQS compliance.
$PM_{2.5}$ NAAQS The facility-wide 24-hour and annual average $PM_{2.5}$ impacts were predicted to be 99% of the allowable NAAQS. Hourly $PM_{2.5}$ emissions, on both the annual and 24-hour bases, for three existing process baghouses were estimated with low $PM_{2.5}$ particle size fractions compared to allowable PM_{10} emissions rates. • MRECBH (Mill Receiving Baghouse): 9% of PM_{10} is PM $_{2.5}$, • LACRECBH (Lactose Surge Hopper Plus New Receiver Baghouse): 6.6% of PM_{10} is PM $_{2.5}$, • PBINBH (Powder Bin Baghouse: 9% of PM_{10} is $PM_{2.5}$.	NAAQS compliance was demonstrated using $PM_{2.5}$ emissions reflecting either: 1) a very high level of control for the $PM_{2.5}$ fraction of PM_{10}; or, 2) that these processes emit particulate matter with a very low fraction of $PM_{2.5}$ versus PM_{10}. A high level of confidence in these allowable $PM_{2.5}$ emission rates should exist at the time of permit issuance or $PM_{2.5}$ emissions rates should be verified through performance testing on the Mill Receiving, Lactose Surge Hopper/Receiver, and Powder Bin Baghouses.
Emergency Generator The emergency generator was modeled for the following operating hours: • 3 hours per day, and, • 210 hours per year.	Daily operating hours for testing and maintenance will be allowed flexibility for up to 3 hours per any 24 hour period and up to 210 hours per calendar year or rolling 8,760 hour period.
Rain caps / Exhaust Release Impairment These existing baghouses must be operated at all times with uninterrupted vertical release points: • Lactose Receiving Baghouse • WPC Dryer Baghouse • Powder Bin Baghouse • Mill Receiving Baghouse • Fluidized Bed Baghouse • Lactose Primary Baghouse	Modeling assuming impeded or partially impeded release points was not submitted and compliance with the $PM_{2.5}$ NAAQS is very likely to be achieved. A permit operational requirement is recommended.

Air impact analyses are required by Idaho Air Rules to be conducted according to methods outlined in 40 CFR 51, Appendix W (Guideline on Air Quality Models). Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition. The submitted information and analyses demonstrated to the satisfaction of the Department, using DEQ/EPA established guidance, policies, and procedures, that operation of the proposed facility or modification will not cause or significantly contribute to a violation of any ambient air quality standard, provided the key conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition.

1.2 Summary of Submittals and Actions

June 23, 2015: Representatives for Glanbia, AECOM, and DEQ met at the DEQ state office for a 15-Day Pre-application meeting for the proposed project.

June 24, 2015: DEQ emailed AECOM a copy of the Glanbia Gooding air impact analyses

for a 2010 permitting project and DEQ-prepared 5-year meteorological dataset covering 2008-2012 based on Jerome surface data.

July 6, 2015: AECOM submitted a modeling protocol and updated site plan to DEQ for the proposed project.

July 22, 2015: DEQ issued a modeling protocol approval with comments to Glanbia.

July 31, 2015: Glanbia submitted an application for a 15-Day Pre-Permit Construction Approval PTC.

August 12, 2015: DEQ issued a letter authorizing construction to commence on the project per the 15-Day Pre-Permit Construction Approval PTC program.

August 26, 2015: DEQ declared the application incomplete.

October 19, 2015: AECOM submitted a memorandum and support documentation describing how release parameters would be identified for use in the incompleteness response's air impact analyses.

November 6, 2015: DEQ provided comments via email concerning release parameter determination methods to AECOM and Glanbia Foods, Inc.

February 4, 2016: Glanbia submitted a revised air impact analyses via email.

March 4, 2016: The permit application was declared incomplete.

March 31, 2016: AECOM submitted a revised air impact analyses and report in response to the incompleteness determination, via email, on behalf of Glanbia.

April 27, 2016: DEQ declared the application complete.

2.0 Background Information

2.1 Permit Requirements for Permits to Construct

PTCs are issued to authorize the construction of a new source or modification of an existing source or permit. Idaho Air Rules Section 203.02 requires that emissions from the new source or modification not cause or significantly contribute to a violation of an air quality standard, and Idaho Air Rules Section 203.03 requires that emissions from a new source or modification comply with applicable toxic air pollutant (TAP) increments of Idaho Air Rules Sections 585 and 586.

2.2 Project Location and Area Classification

The facility is located near Gooding, Idaho, in Gooding County. The area is designated as attainment or unclassifiable for all pollutants.

2.3 Modeling Applicability for Criteria Pollutants

Idaho Air Rules Section 203.02 state that a PTC cannot be issued unless the application demonstrates to the satisfaction of DEQ that the new source or modification will not cause or significantly contribute to a NAAQS violation. Atmospheric dispersion modeling is used to evaluate the potential impact of a proposed project to ambient air and demonstrate NAAQS compliance. However, if the emissions associated with a project are very small, project-specific modeling analyses may not be necessary. If the emissions increases associated with a project are below modeling applicability thresholds established in the *Idaho Air Modeling Guideline* ("State of Idaho Guideline for Performing Air Quality Impact Analyses," available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf, then a project-specific analysis is not required. Modeling applicability emissions thresholds were developed by DEQ based on modeling of a hypothetical source and were designed to reasonably ensure that impacts are below the applicable SIL. DEQ has established two threshold levels: Level 1 thresholds are unconditional thresholds, requiring no approval for use by DEQ; Level 2 thresholds are conditional upon DEQ approval, which depends on evaluation of the project and the site, including emissions quantities, stack parameters, number of sources emissions are distributed amongst, distance between the sources and the ambient air boundary, and the presence of sensitive receptors near the ambient air boundary. Certain pollutants were exempted from this permitting action's air impact analyses. Only $PM_{2.5}$ and PM_{10} emissions were predicted to increase as a result of this project. Process steam for another existing emissions unit/process will be utilized for the proposed Whey Powder Agglomerator project and the existing process will not operate concurrently with the Whey Powder Agglomerator project at any capacity level so there will be no increase in combustion emissions from any of the facility's boilers.

2.4 Significant and Cumulative NAAQS Impact Analyses

If maximum modeled pollutant impacts to ambient air from emissions sources associated with a new facility or the emissions increase associated with a modification exceed the SILs of Idaho Air Rules Section 006 (referred to as a significant contribution in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02. A cumulative NAAQS impact analysis may also be required for permit revisions driven by compliance/enforcement actions, any correction of emissions limits or other operational parameters that may affect pollutant impacts to ambient air, or other cases where DEQ believes NAAQS may be threatened by the emissions associated with the facility or proposed project.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts, according to established DEQ/EPA guidance, policies, and procedures, from applicable facility-wide emissions and emissions from any nearby co-contributing sources. A DEQ-approved background concentration value is then added to the modeled result that is appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. Table 2 also lists SILs and specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis.

Table 2. APPLICABLE REGULATORY LIMITS				
Pollutant	**Averaging Period**	**Significant Impact Levels[a] ($\mu g/m^3$)[b]**	**Regulatory Limit[c] ($\mu g/m^3$)**	**Modeled Design Value Used[d]**
PM_{10}[e]	24-hour	5.0	150[f]	Maximum 6th highest[g]
$PM_{2.5}$[h]	24-hour	1.2	35[i]	Mean of maximum 8th highest[j]
	Annual	0.3	12[k]	Mean of maximum 1st highest[l]
Carbon monoxide (CO)	1-hour	2,000	40,000[m]	Maximum 2nd highest[n]
	8-hour	500	10,000[m]	Maximum 2nd highest[n]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[o] (7.8 $\mu g/m^3$)	75 ppb[p] (196 $\mu g/m^3$)	Mean of maximum 4th highest[q]
	3-hour	25	1,300[m]	Maximum 2nd highest[n]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb (7.5 $\mu g/m^3$)	100 ppb[s] (188 $\mu g/m^3$)	Mean of maximum 8th highest[t]
	Annual	1.0	100[r]	Maximum 1st highest[n]
Lead (Pb)	3-month[u]	NA	0.15[r]	Maximum 1st highest[n]
	Quarterly	NA	1.5[r]	Maximum 1st highest[n]
Ozone (O_3)	8-hour	40 TPY VOC[v]	75 ppb[w]	Not typically modeled

a. Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.
b. Micrograms per cubic meter.
c. Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.
d. The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.
e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
f. Not to be exceeded more than once per year on average over 3 years.
g. Concentration at any modeled receptor when using five years of meteorological data.
h. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
i. 3-year mean of the upper 98th percentile of the annual distribution of 24-hour concentrations.
j. 5-year mean of the 8th highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1st highest modeled 24-hour impacts at the modeled receptor for each year.
k. 3-year mean of annual concentration.
l. 5-year mean of annual averages at the modeled receptor.
m. Not to be exceeded more than once per year.
n. Concentration at any modeled receptor.
o. Interim SIL established by EPA policy memorandum.
p. 3-year mean of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
q. 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1st highest modeled 1-hour impacts for each year is used.
r. Not to be exceeded in any calendar year.
s. 3-year mean of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
t. 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.
u. 3-month rolling average.
v. An annual emissions rate of 40 ton/year of VOCs is considered significant for O_3.
w. Annual 4th highest daily maximum 8-hour concentration averaged over three years. The O_3 standard was revised (the notice was signed by the EPA Administrator on October 1, 2015) to 70 ppb. However, this standard will not be applicable for permitting purposes until it is incorporated by reference *sine die* into Idaho Air Rules.

If the cumulative NAAQS impact analysis shows a violation of the standard, the permit cannot be issued if the proposed project or facility has a significant contribution (exceeding the SIL) to the modeled violation. This evaluation is made specific to both time and space. The facility or project does not have a significant contribution to a violation if impacts are below the SIL at all specific receptors showing violations during the time periods when modeled violations occurred.

Compliance with Idaho Air Rules Section 203.02 is demonstrated if: a) specific applicable criteria pollutant emissions increases are at a level defined as Below Regulatory Concern (BRC), using the criteria established by DEQ regulatory interpretation[1]; or b) all modeled impacts of the SIL analysis are

below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or c) modeled design values of the cumulative NAAQS impact analysis (modeling applicable emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or other identified level of consequence; or d) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

For this project, facility-wide $PM_{2.5}$ and PM_{10} emissions were required to be modeled in cumulative impact analyses. Modeling was not triggered for any other pollutant on the basis that there were no changes to any other equipment and there is no increased utilization capacity above the level already reflected in the initial PTC analyses for potential to emit, significant impact level, and cumulative impact analyses as applicable.

2.5 Toxic Air Pollutant Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

> *Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permitting requirements for toxic air pollutants (TAPs) from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

> *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.*

Per Section 210, if the total project-wide emissions increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60, 61, or 63, then a TAP impact analysis under Section 210 is not required for that TAP. The DEQ permit writer evaluates the applicability of specific TAPs to the Section 210.20 exclusion. TAPs ambient impact analyses were not triggered for this project.

There were no TAPs emission increases to compare against allowable ELs, and thus no modeled impacts to compare against allowable TAPs increments for this project.

3.0 Analytical Methods and Data

3.1 Modeling Methodology

This section describes the modeling methods used by the applicant's consultant, AECOM, to demonstrate compliance with applicable air quality standards.

3.1.1 Overview of Analyses

AECOM performed project-specific air impact analyses that were determined by DEQ to be reasonably representative of the facility, using established DEQ policies, guidance, and procedures. Results of the submitted analyses, in combination with DEQ's analyses, demonstrated compliance with applicable air quality standards to DEQ's satisfaction, provided the facility is operated as described in the submitted application and in this memorandum.

Table 3 provides a brief description of parameters used in the modeling analyses.

Table 3. MODELING PARAMETERS

Parameter	Description/Values	Documentation/Addition Description
General Facility Location	Gooding, Idaho	The area is an attainment or unclassified area for all criteria pollutants.
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 14134. The non-default Beta algorithms for capped and horizontal releases for point sources were used for this project.
Meteorological Data	Jerome	2008-2012 - See Section 3.3 of this memorandum. Surface data from the Jerome airport and upper air data from Boise, Idaho.
Terrain	Considered	Receptor elevations were determined using a USGS NED map file based on the WGS84 datum. Coordinates were converted to NAD83 in the model setup.
Building Downwash	Considered	Plume downwash was considered for the structures associated with the facility and numerous nearby structures.
Receptor Grid	Grid 1	25-meter spacing along the facility's ambient air boundary and in a 800-meter (x) by 700-meter (y) rectangular grid centered on the facility.
	Grid 2	50-meter spacing in a 1,150-meter (x) by 1,050-meter (y) rectangular grid centered on the facility.
	Grid 3	100-meter spacing in a 1,700-meter (x) by 1,600-meter (y) rectangular grid centered on Grid 2.
	Grid 4	250-meter spacing in a 2,750-meter (x) by 2,750-meter (y) square grid centered on Grid 3.
	Grid 5	500-meter spacing in a 5,000-meter (x) by 5,000-meter (y) square grid centered on Grid 4.
	Grid 6	A maximum impact resolution grid with 10-meter spacing set along the northwest corner of the facility extending out from the northwest corner for 550 meters to the east and 510 meters to the south. This grid extended outward from the ambient air boundary for 80 to 90 meters to from the ambient air boundary.

3.1.2 Modeling Protocol

A modeling protocol was submitted to DEQ on July 6, 2015. DEQ issued a modeling protocol approval, with comments, on July 22, 2015. Project-specific modeling was conducted using data and methods described in the modeling protocol and the *Idaho Air Modeling Guideline*[1].

3.1.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of ambient concentrations be based on air quality models specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). The refined, steady state, multiple-source, Gaussian dispersion model AERMOD was promulgated as the replacement model for ISCST3 in December 2005. AERMOD retains the single straight line trajectory of ISCST3, but includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

AERMOD Version 14134 was used by AECOM for the modeling analyses to evaluate impacts of the facility. This is the not the current version of this regulatory guideline model, but DEQ's modeling protocol approval did not establish that Version 15181 should have been used in place of Version 14134. The changes made to the AERMOD model in Version 15181 do not affect any predicted ambient impacts of PM_{10} and $PM_{2.5}$ using the methods submitted by AECOM and DEQ approves this version of AERMOD for this project.

DEQ approved the use of the non-regulatory Beta algorithms for treatment of point sources with horizontal release orientation and rain caps in the July 22, 2015 modeling protocol approval.

3.2 Background Concentrations

A background concentration tool was used to establish ambient background concentrations for cumulative NAAQS analyses. A beta version of the background concentration tool was developed by the Northwest International Air Quality Environmental Science and Technology Consortium (NW AIRQUEST) and provided through Washington State University (located at http://lar.wsu.edu/nw-AIRQUEST/lookup.html). The tool uses regional scale modeling of pollutants in Washington, Oregon, and Idaho, with modeling results adjusted according to available monitoring data. The design value background concentration is added to the modeled design value for each pollutant and averaging period.

There currently are no ambient air pollutant monitors in the immediate area to aid in establishing ambient background concentrations for this facility. DEQ requested that Glanbia's NAAQS demonstration use the NW AIRQUEST backgrounds concentration tool for the facility's location to obtain ambient backgrounds for 24-hour PM_{10}, 24-hour $PM_{2.5}$, and annual $PM_{2.5}$. The coordinates of the facility are 42.948 degrees latitude and -114.631 degrees longitude, which is approximately 3.5 miles east of the city of Gooding.

The Glanbia Gooding facility is located at the edge of the grid cell used in the NW AIRQUEST for the modeling of the ambient background concentrations. Each cell is a square measuring 7.7 miles on each side. The cell boundary runs directly through the Glanbia facility. Rather than applying different background values for receptors located on either side of the NW AIRQUEST background grid, DEQ requested that Glanbia's project conservatively use the higher of the values for each pollutant and averaging period. Figures 1 and 2 depict the ambient background tool's background grid and show the unique situation for the Glanbia facility where the facility itself is bisected by the NW AIRQUEST grid cells border.

Figure 1. NW AIRQUEST AMBIENT BACKGROUND GRID CELLS FOR THE AREA

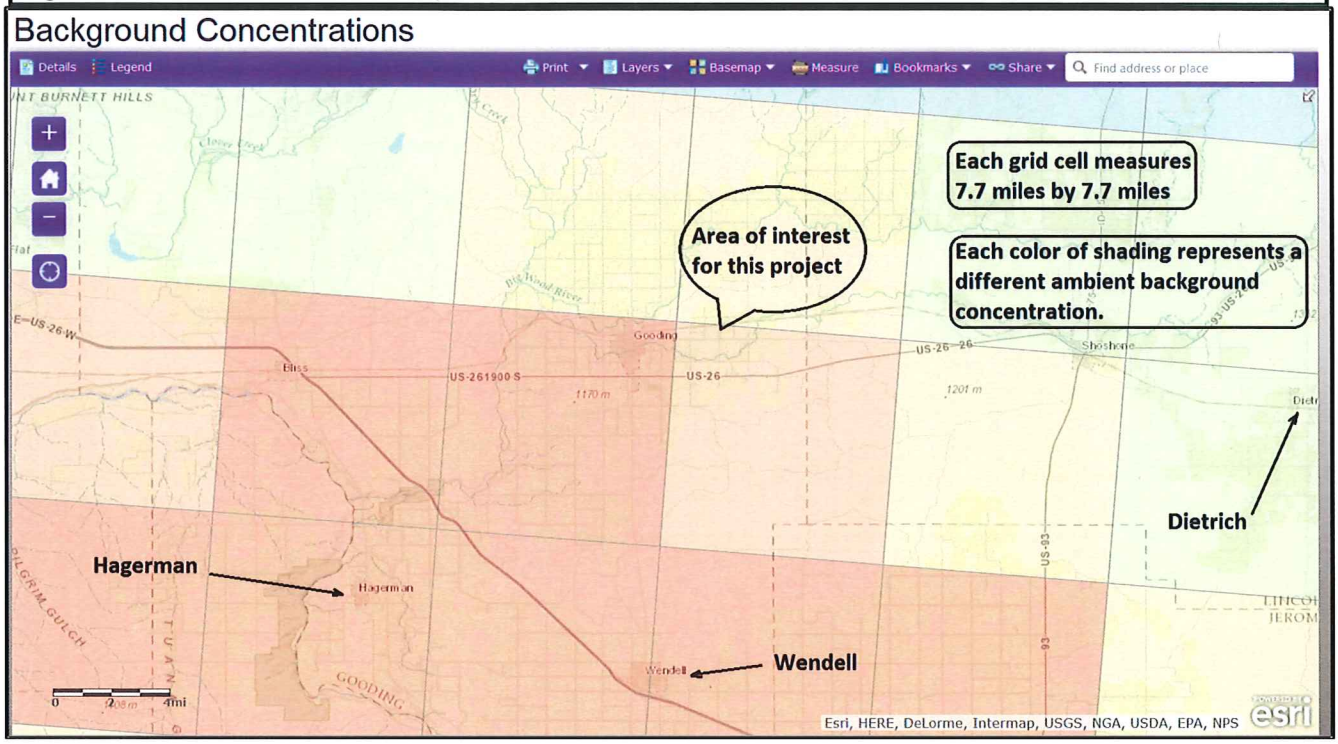
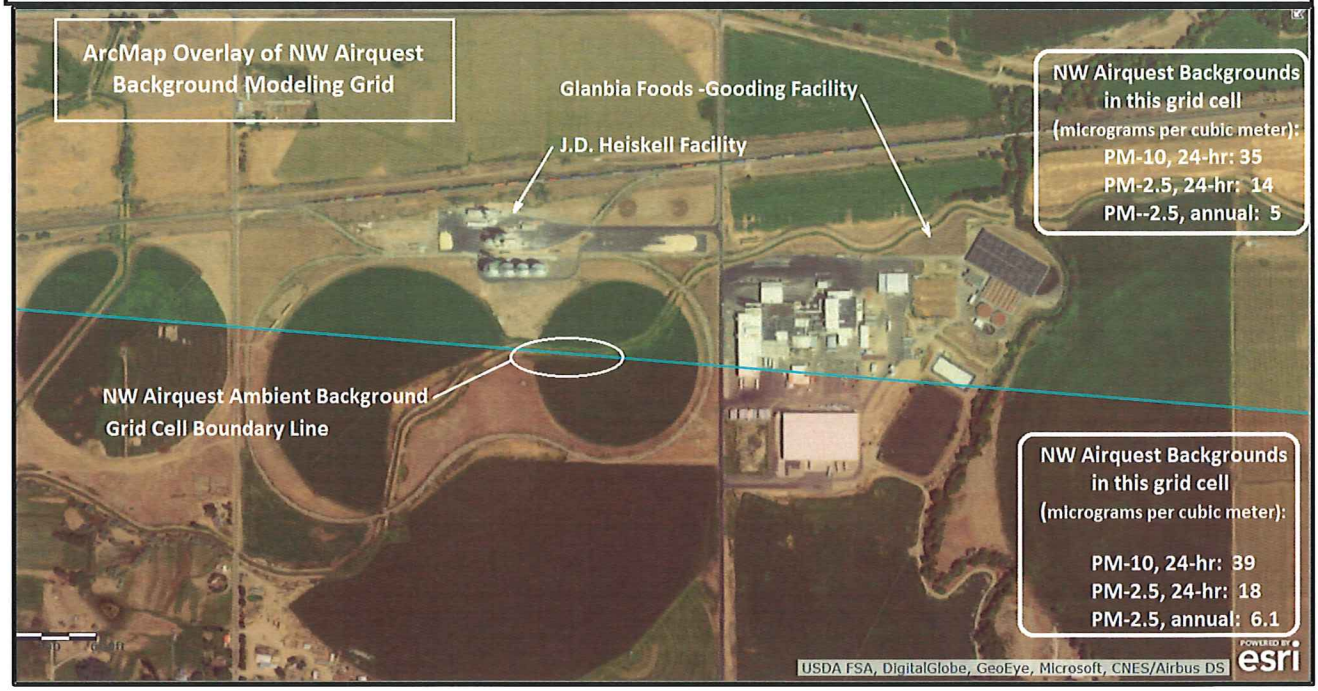


Figure 2. GLANBIA FACILITY AND BORDER OF NWAIRQUEST GRID



DEQ provided initial ambient background concentrations for the project via email on June 25, 2015. The background values were:

- 24-hour average PM_{10} (with extreme values removed): 39 micrograms per cubic meter ($\mu g/m^3$);
- 24-hour average $PM_{2.5}$: 18 $\mu g/m^3$; and
- Annual average $PM_{2.5}$: 6.1 $\mu g/m^3$.

DEQ determined that the J. D. Heiskell facility, a grain handling and dairy supplements handling facility located immediately adjacent to the Glanbia facility, must be included as a co-contributing source in any $PM_{2.5}$ or PM_{10} cumulative NAAQS impact analyses. The NW AIRQUEST analyses did not account for the J.D. Heiskell source in determining the ambient background values, and the scale of the grid cell modeling used in the NW AIRQUEST tool would not provide a reasonably accurate or conservative estimate of near-source impacts. Based upon interpretation of the facility's potential to emit from past permitting actions, DEQ modeling staff concluded the facility's PM_{10} emissions were approximately 56.4 tons per year, and $PM_{2.5}$ emissions were approximately 10.3 tons per year. These emission rates include fugitive emission sources which must be included in any cumulative impact analyses, even if they are not counted toward New Source Review potential to emit.

Emission source release parameters for the J.D. Heiskell facility were not readily available for use in the air impact modeling analyses supporting the proposed Glanbia project. Therefore, co-contributing impacts of the J.D. Heiskell facility could not be directly handled in the air impact modeling analyses. DEQ used previously-generated general pollutant dispersion factors for industrial sources to estimate potential impacts of the J.D. Heiskell facility as a function of emissions quantities. These estimated impacts were then added to the background concentrations obtained from the NW AIRQUEST tool. The general air pollutant dispersion factors were developed by DEQ and presented in a memorandum titled *Background Concentrations for Use in New Source Review Dispersion Modeling* (by Rick Hardy and Kevin Schilling, Technical Services, Modeling Group, DEQ, dated March 14, 2003). The dispersion factors, often termed Chi/Q factors, were applied to both PM_{10} and $PM_{2.5}$ emissions associated with the J.D. Heiskell facility. The co-contributing source background values are listed in Table 4.

Table 4. NEIGHBORING SOURCE AMBIENT BACKGROUND CONTRIBUTION

Pollutant and Averaging Period	Chi/Q[a] Factor ($\mu g/m^3$[b] per ton/year)	J.D. Heiskell Emissions (tons per year)	Additional Background Component ($\mu g/m^3$)
24-hour PM_{10}[c]	0.036	56.4	2.0
24-hour $PM_{2.5}$[d]	0.036	10.3	0.4
Annual $PM_{2.5}$	0.011	10.3	0.1

a. Chi/Q = Background concentration per unit emission rate.
b. Micrograms per cubic meter.
c. Particulate matter with a mean aerodynamic diameter of ten microns or less.
d. Particulate matter with a mean aerodynamic diameter of 2.5 microns or less.

Ambient background values adjusted for the potential impact from the J.D. Heiskell facility are listed in Table 5.

Table 5. PARTICULATE MATTER AMBIENT BACKGROUND CONCENTRATIONS			
Pollutant and Averaging Period	**NW AIRQUEST Background Concentration ($\mu g/m^3$)[a]**	**Co-Contributing Facility Concentration ($\mu g/m^3$)**	**Total Background Concentration for Cumulative NAAQS Impact Analyses ($\mu g/m^3$)**
PM_{10}[b] 24-hour	39[d]	2.0	41
$PM_{2.5}$[c] 24-hour	18	0.4	18.4
$PM_{2.5}$ annual	6.1	0.1	6.2

a. Micrograms per cubic meter.
b. Particulate matter with a mean aerodynamic diameter of ten microns or less.
c. Particulate matter with a mean aerodynamic diameter of 2.5 microns or less.
d. Extreme values were removed.

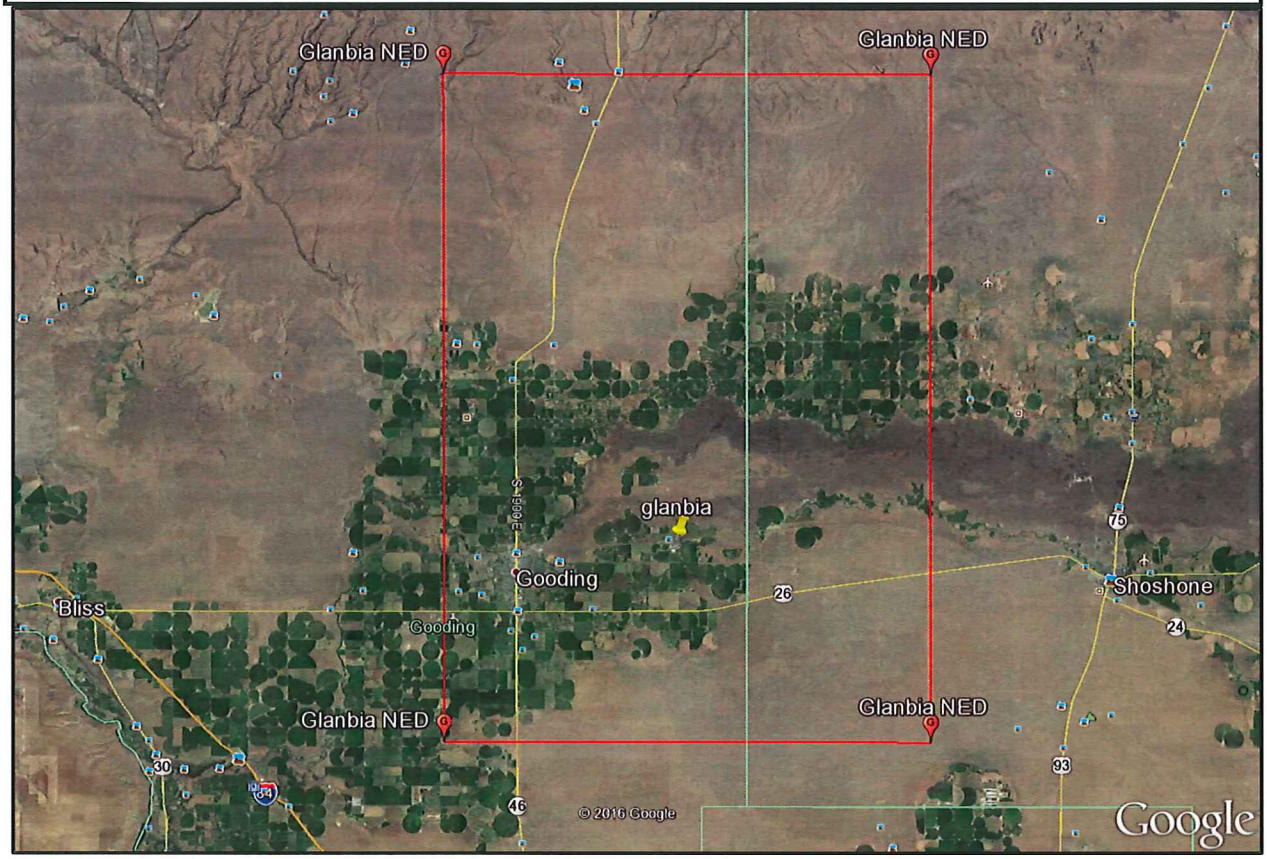
3.3 Meteorological Data

DEQ provided AECOM with a model-ready meteorological dataset processed from Jerome surface and Boise upper air meteorological data covering the years 2008-2012. The model-ready dataset for this project was generated from monitored data collected at Jerome County airport (FAA airport code KJER) for surface and Automated Surface Observing System (ASOS) data and upper air data from the National Weather Service (NWS) Station site (site code BOI). Surface characteristics were determined by DEQ staff using AERSURFACE version 13016. AERMINUTE version 11325 was used to process ASOS wind data for use in AERMET. AERMET Version 12345 was used to process surface and upper air data and generate a model-ready meteorological data input file. DEQ determined these data were representative for the Glanbia site near Gooding, Idaho, and approved use of this dataset for the project.

3.4 Terrain Effects

AECOM used a National Elevation Dataset (NED) file in the World Geodetic System 1984 (WGS84) datum, to calculate elevations of receptors. The model setup was converted to NAD83 coordinates in the AERMOD model setup. A 1.0 arc second file provided 30-meter resolution of elevation data. The terrain preprocessor AERMAP version 11103 was used to extract the elevations from the NED file and assign them to receptors in the modeling domain in a format usable by AERMOD. AERMAP also determined the hill-height scale for each receptor. The hill-height scale is an elevation value based on the surrounding terrain which has the greatest effect on that individual receptor. AERMOD uses those heights to evaluate whether the emissions plume has sufficient energy to travel up and over the terrain or if the plume will travel around the terrain. The project's NED file coverage is shown in Figure 3.

Figure 3. GLANBIA GOODING TERRAIN DATA COVERAGE



3.5 Building Downwash Effects on Modeled Impacts

Potential downwash effects on the emissions plume were accounted for in the model by using building parameters as described by AECOM. The Building Profile Input Program for the PRIME downwash algorithm (BPIP-PRIME) was used to calculate direction-specific dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and release parameters for input to AERMOD. Modeled tier heights for the Glanbia facility's buildings, structures, and tanks are listed in Table 6. All modeled structures are depicted in Figure 4. Building and stack source base elevations were determined using the AERMAP program and the NED file.

DEQ requested that the cumulative NAAQS impact analyses documentation verify that all structures that could cause plume downwash be included in the impact assessment. EPA guidance has determined that emissions points within a distance equal to or less than five times the lesser of the building height or projected building width of the structure being examined could be subject to downwash caused by that structure. AECOM created a BPIP file with structures on Glanbia's facility. The file included all structures that could potentially cause plume downwash, in accordance with EPA guidance. The locations of the structures appeared reasonably accurate when compared with the locations and dimensions represented in the Google earth® imagery. DEQ review concluded that the building downwash was appropriately evaluated.

Figure 4. GLANBIA FOODS MODELED STRUCTURES

Table 6. BUILDING & STRUCTURE MODELED HEIGHTS FOR DOWNWASH EFFECTS			
Structure Name	**Structure Name – Tier #**	**Structure Base Elevation (ft)[a]**	**Structure Tier Height (ft)**
GARAGE	GARAGE-1	3633.0	25.0
WHEYDRY	WHEYDRY-1	3633.1	82.0
WPCBLDG	WPCBLDG-1	3633.7	40.0
WWTP	WWTP-1	3634.1	7.9
WATERTRT	WATERTRT-1	3633.3	5.8
BLR&FLR	BLR&FLR-1	3633.8	17.0
LUFT	LUFT-1	3633.1	50.0
BOILER	BOILER-1	3632.2	18.0
WAREHSE	WAREHSE-1	3631.8	32.5
CHSPLNT	CHSPLNT-1	3632.5	35.0
CHSPLNT	CHSPLNT-2	*	50.0
WHEYPLNT	WHEYPLNT-1	3632.9	35.0
WHEYBLDG	WHEYBLDG-1	3633.6	25.0
MAINTSHP	MAINTSHP-1	3633.0	25.0
MAINTSTR	MAINTSTR-1	3633.0	20.0
CT3TO10	CT3TO10-1	3633.2	30.0
SILO4TO8	SILO4TO8-1	3633.6	35.0
PUMPHSE	PUMPHSE-1	3633.3	35.0
TRKSHP	TRKSHP-1	3634.1	27.5
Sludge	Sludge-1	3633.2	20.0
MCC	MCC-1	3632.7	16.0
Silo1	Silo1-1	3632.8	70.0
Silo2	Silo2-1	3632.7	70.0
Silo3	Silo3-1	3632.7	70.0
Silo4	Silo4-1	3632.7	70.0
Silo5	Silo5-1	3632.7	80.0
Silo6	Silo6-1	3632.7	80.0
Silo7	Silo7-1	3632.7	90.0
Silo8	Silo8-1	3632.6	90.0
Silo9	Silo9-1	3632.7	90.0
Silo10	Silo10-1	3632.6	90.0
SSR1	SSR1-1	3632.6	40.0
SS1	SS1-1	3632.7	40.0
SS2	SS2-1	3632.7	40.0
SiloC11	SiloC11-1	3633.4	80.0
SiloC12	SiloC12-1	3633.4	80.0
Silo13	Silo13-1	3633.6	40.0
SiloD1	SiloD1-1	3633.6	40.0
SiloD2	SiloD2-1	3633.5	40.0
SiloD3	SiloD3-1	3633.5	40.0
H2OSilo	H2OSilo-1	3632.8	40.0
Clar1	Clar1-1	3632.7	14.0
Clar2	Clar2-1	3631.7	14.0

a. Feet.

3.6 *Facility Layout*

Glanbia's modeled emission points and ambient air boundary are shown in Figure 5, and the structures are shown in Figure 4 above. The facility's structure locations and horizontal dimensions matched the web-based mapping program Google earth well. The new process will be located in a newly-constructed building titled "LUFT."

Figure 5. GLANBIA FOODS FACILITY LAYOUT – EMISSION SOURCE OVERHEAD VIEW

3.7 Ambient Air Boundary

Ambient air is defined in Section 006 of the Idaho *Air Rules* as "that portion of the atmosphere, external to buildings, to which the general public has access." The ambient air boundary used for this project was established along the perimeter of Glanbia's active operations for the facility. Only a portion of the facility is fenced. The modeling report states that Glanbia will post all corners of the facility with no trespassing signs. There are four vehicle access points into the facility along the South 2300 East public roadway. None of these points are controlled by any gates. These entrances are also to be posted with "no trespassing" signs to establish the ambient air boundary used in this air impact analysis. Agricultural land surrounding the facility and owned by Glanbia is leased to an independent entity. Glanbia has appropriately treated this land as ambient air. Glanbia also owns property where an electrical substation has been or will be placed along the southern property boundary and Glanbia has certified that this area has also been treated as ambient air for the dispersion air impact analysis. The innermost line of dots depicted in Figure 5 above show the modeled ambient air boundary for this project.

DEQ review concluded that the ambient air boundary employed in the final air impact analyses

appropriately precluded public access based on the methods described in the modeling report and the criteria described in DEQ's *Modeling Guideline*[1].

3.8 Receptor Network

Table 3 describes the receptor network used in the submitted air impact analyses. DEQ determined that the receptor network was adequate to reasonably assure compliance with applicable air quality standards at all ambient air locations. See Figures 5 and 6 of Glanbia's modeling report to see figures of the modeled receptor network for the project.

DEQ concludes that the receptor grid adequately resolved maximum impacts to ambient air for this project.

3.9 Emission Rates

Emissions of PM_{10} and $PM_{2.5}$ resulting from operation of the facility were provided by AECOM and Glanbia for various applicable averaging periods.

Review and approval of estimated emissions is the responsibility of the DEQ permit writer, and the representativeness and accuracy of emissions estimates is not addressed in this modeling memorandum. DEQ air impact analyses review included verification that the potential emissions rates provided in the emissions inventory were properly used in the model. The rates listed must represent the maximum allowable rate as averaged over the specified period.

Emissions rates used in the air impact analyses, as listed in this memorandum, should be reviewed by the DEQ permit writer and compared with those in the final emissions inventory. All modeled criteria air pollutant and TAP emissions rates must be equal to or greater than the facility's potential emissions calculated in the PTC emissions inventory or proposed permit allowable emissions rates.

3.9.1 Criteria Pollutant Emissions Rates for Significant Impact Analyses

Table 7 lists short term criteria pollutant continuous (24 hours per day) emissions rates used to evaluate whether the proposed project's emissions increases cause a predicted exceedance of a significant contribution level (also referred to as significant impact level, or SIL) specified in Section 006.109 of the Idaho *Air Rules*. Table 8 lists criteria pollutant continuous (8,760 hours/year) emissions rates used to evaluate SIL compliance for standards with an annual averaging period. If ambient impacts exceed a SIL, a cumulative NAAQS impact analysis is required for that pollutant and averaging period to establish compliance with the NAAQS.

AECOM and Glanbia modeled identical emission rates for the significant impact analyses and the NAAQS demonstration for the proposed Whey Powder Agglomerator baghouse stack. This baghouse is the only source required to be included in the SIL analyses. No other existing sources are to experience an increase in emissions due to the proposed project.

Table 7. SHORT-TERM EMISSIONS RATES USED IN SIGNIFICANT IMPACT ANALYSES			
Modeled Emissions Point	**Description**	**PM_{10}[a] (lb/hr)[b]**	**$PM_{2.5}$[c] (lb/hr)**
LUFTBH	Proposed LUFT baghouse for Whey Powder Agglomeration process	0.76	0.76

a. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
b. Pounds per hour.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

Table 8. LONG-TERM EMISSIONS RATES USED IN SIGNIFICANT IMPACT ANALYSES		
Modeled Emissions Point	**Description**	**$PM_{2.5}$[a] (lb/hr)[b]**
LUFTBH	**Proposed** LUFT baghouse for Whey Powder Agglomeration process	0.76

a. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
b. Pounds per hour.

3.9.2 Criteria Pollutant Emissions Rates for Cumulative NAAQS Impact Analyses

Table 9 lists criteria pollutant continuous (24 hours per day) emissions rates used to evaluate NAAQS compliance for standards with averaging periods of 24 hours or less. Table 10 lists criteria pollutant continuous (8,760 hours/year) emissions rates used to evaluate NAAQS compliance for standards with an annual averaging period. These modeled rates must be equal or greater than allowable facility-wide emissions for the listed averaging period.

Table 9. SHORT-TERM EMISSIONS RATES USED IN NAAQS MODELING ANALYSES			
Modeled Emissions Point	**Description**	**PM_{10}[a] (lb/hr)[b]**	**$PM_{2.5}$[c] (lb/hr)**
MRECBH	Mill receiving baghouse	1.12	0.1
LACRECBH	Lactose surge hopper plus new receiver baghouse	1.22	0.08
PDRYBH	Primary dryer baghouse	1.21	1.21
FBEDBH	Fluidized bed baghouse	1.7	1.7
PBINBH	Powder bin baghouse	0.87	0.08
WPCSCRBH	WPC surge hopper baghouse	0.03	0.03
WPCNUSBH	WPC nuisance baghouse	0.11	0.11
BOILER1	Boiler 1 - Nat Gas only	0.19	0.19
BOILER2	Boiler 2 - Natural gas or biofuel	0.17	0.17
BOILER3	Boiler 3 - Natural gas or biofuel	0.17	0.17
BOILER4	Boiler 4 - Natural gas	0.18	0.18
BOILER5	Boiler 5 - Natural gas or biofuel	0.14	0.14
FLARE	Flare	0.1	0.1
DRYER1	WPC dryer baghouse	0.07	0.07
GEN1	Emergency generator engine	0.07125	0.07125
LACBAG	Existing lactose baghouse	0.76	0.76
LUFTBH	Proposed LUFT baghouse for Whey Powder Agglomeration process	0.76	0.76
HEATVOL1	Volume source for Heaters 1, 2, and 3	0.06	0.06

a. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
b. Pounds per hour.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

Table 10. LONG-TERM EMISSIONS RATES USED IN NAAQS MODELING ANALYSES		
Modeled Emissions Point	**Description**	**$PM_{2.5}$[a] (lb/hr)[b]**
MRECBH	Mill receiving baghouse	0.1
LACRECBH	Lactose surge hopper plus new receiver baghouse	0.08
PDRYBH	Primary dryer baghouse	1.21
FBEDBH	Fluidized bed baghouse	1.7
PBINBH	Powder bin baghouse	0.08
WPCSCRBH	WPC surge hopper baghouse	0.03
WPCNUSBH	WPC nuisance baghouse	0.11
BOILER1	Boiler 1 - Nat Gas only	0.19
BOILER2	Boiler 2 - Natural gas or biofuel	0.17
BOILER3	Boiler 3 - Natural gas or biofuel	0.17
BOILER4	Boiler 4 - Natural gas	0.18
BOILER5	Boiler 5 - Natural gas or biofuel	0.14
FLARE	Flare	0.1
DRYER1	WPC dryer baghouse	0.07
GEN1	Emergency generator engine	0.0137
LACBAG	Existing lactose baghouse	0.76
LUFTBH	**Proposed** LUFT baghouse for Whey Powder Agglomeration process	0.76
HEATVOL1	Volume source for Heaters 1, 2, and 3	0.06

a. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
b. Pounds per hour.

3.10 Emission Release Parameters

Tables 11, 12, 13, and 14 list emissions release parameters for modeled sources.

Table 11. POINT SOURCE EMISSIONS RELEASE PARAMETERS (METRIC UNITS)									
Release Point	Description	UTM[a] Coordinates, Zone 11		Stack Base Elevation (m)	Stack Height (m)	Modeled Diameter (m)	Stack Gas Temp (K)[c]	Stack Flow Velocity (m/s)[d]	Stack Release Type
		Easting (m)[b]	Northing (m)						
MRECBH	Mill receiving baghouse	693217.61	4757848.95	1107.46	25.85	0.152	317.04	30.1	Default[e]
LACRECBH	Lactose surge hopper plus new receiver baghouse	693202.29	4757869.39	1107.51	9.14	0.101	304.26	50.1	Horizontal
PDRYBH	Primary dryer baghouse	693209.48	4757858.06	1107.48	27.07	0.864	338.15	15.2	Default[e]
FBEDBH	Fluidized bed baghouse	693207.87	4757860.49	1107.49	26.97	0.762	345.93	14.2	Default[e]
PBINBH	Powder bin baghouse	693216.52	4757868.79	1107.51	26.15	0.152	310.93	34.4	Default[e]
WPCSCRBH	WPC surge hopper baghouse	693209.77	4757887.27	1107.56	7.62	0.343	299.82	5.08	Horizontal
WPCNUSBH	WPC nuisance baghouse	693231.82	4757887.86	1107.55	6.10	0.516	299.82	8.85	Horizontal
BOILER1	Boiler 1 - Nat Gas only	693147.25	4757746.13	1106.95	9.45	0.610	455.37	12.77	Raincap
BOILER2	Boiler 2 - Natural gas or biofuel	693153.08	4757743.48	1106.94	10.97	0.610	455.37	12.14	Default[e]
BOILER3	Boiler 3 - Natural gas or biofuel	693159.06	4757742.42	1106.94	10.97	0.610	455.37	12.14	Default[e]
BOILER4	Boiler 4 - Natural gas	693165.56	4757743.74	1106.97	9.45	0.760	455.37	7.82	Default[e]
BOILER5	Boiler 5 - Natural gas or biofuel	693431.34	4757910.71	1107.54	6.40	0.610	460.93	8.19	Default[e]
FLARE	Flare	693445.24	4757875.97	1107.35	8.17	0.710	1033.15	20	Default[e]
DRYER1	WPC dryer	693216.58	4757827.91	1107.39	26.00	1.067	349.82	16.7	Default[e]
GEN1	Emergency generator engine	693151.52	4757807.31	1107.32	4.27	0.410	750.43	50.37	Default[e]
LACBAG	Existing lactose baghouse	693207.74	4757869.27	1107.51	26.15	0.509	333.15	8.71	Default[e]
LUFTBH	**Proposed** LUFT baghouse for Whey Powder Agglomerator	693267.43	4757824.19	1107.31	17.37	0.686	338.71	14.86	Default[e]

a. Universal Transverse Mercator.
b. Meters.
c. Kelvin.
d. Meters per second.
e. Default = uninterrupted vertical release.

Table 12. VOLUME SOURCE EMISSIONS RELEASE PARAMETERS (METRIC UNITS)							
Release Point	Description	UTM[a] Coordinates, Zone 11		Base Elevation (m)	Release Height (m)	Initial Horizontal Dimension (m)	Initial Vertical Dimension (m)
		Easting (m)[b]	Northing (m)				
HEATVOL1	Volume source for Heaters 1, 2, and 3	693080.02	4757820.7	1107.22	16.764	2.13	7.1

a. Universal Transverse Mercator.
b. Meters.

Table 13. POINT SOURCE EMISSIONS RELEASE PARAMETERS (ENGLISH UNITS)									
Release Point	Description	UTM[a] Coordinates, Zone 11		Stack Base Elevation (ft)[c]	Stack Height (ft)	Modeled Diameter (ft)	Stack Gas Temperature (°F)[d]	Stack Flow Velocity (fps)[e]	Stack Release Type
		Easting (m)[b]	Northing (m)						
MRECBH	Mill receiving baghouse	693217.61	4757848.95	3633.4	84.80	0.50	111.0	98.8	Default[f]
LACRECBH	Lactose surge hopper plus new receiver baghouse	693202.29	4757869.39	3633.6	30.00	0.33	88.0	164.4	Horizontal
PDRYBH	Primary dryer baghouse	693209.48	4757858.06	3633.5	88.80	2.83	149.0	49.9	Default[f]
FBEDBH	Fluidized bed baghouse	693207.87	4757860.49	3633.5	88.50	2.50	163.0	46.6	Default[f]
PBINBH	Powder bin baghouse	693216.52	4757868.79	3633.6	85.80	0.50	100.0	112.9	Default[f]
WPCSCRBH	WPC surge hopper baghouse	693209.77	4757887.27	3633.7	25.00	1.12	80.0	16.7	Horizontal
WPCNUSBH	WPC nuisance baghouse	693231.82	4757887.86	3633.7	20.00	1.69	80.0	29.0	Horizontal
BOILER1	Boiler 1 - Nat Gas only	693147.25	4757746.13	3631.7	31.00	2.00	360.0	41.9	Raincap
BOILER2	Boiler 2 - Natural gas or biofuel	693153.08	4757743.48	3631.7	35.99	2.00	360.0	39.8	Default[f]
BOILER3	Boiler 3 - Natural gas or biofuel	693159.06	4757742.42	3631.7	35.99	2.00	360.0	39.8	Default[f]
BOILER4	Boiler 4 - Natural gas	693165.56	4757743.74	3631.8	31.00	2.49	360.0	25.7	Default[f]
BOILER5	Boiler 5 - Natural gas or biofuel	693431.34	4757910.71	3633.7	21.00	2.00	370.0	26.9	Default[f]
FLARE	Flare	693445.24	4757875.97	3633.0	26.80	2.33	1400.0	65.6	Default[f]
DRYER1	WPC dryer	693216.58	4757827.91	3633.2	85.30	3.50	170.0	54.8	Default[f]
GEN1	Emergency generator engine	693151.52	4757807.31	3632.9	14.01	1.35	891.1	165.3	Default[f]
LACBAG	Existing lactose baghouse	693207.74	4757869.27	3633.6	85.80	1.67	140.0	28.6	Default[f]
LUFTBH	**Proposed** LUFT baghouse for Whey Powder Agglomerator	693267.43	4757824.19	3632.9	57.00	2.25	150.0	48.8	Default[f]

a. Universal Transverse Mercator.
b. Meters.
c. Feet.
d. Degrees Fahrenheit.
e. Feet per second.
f. Default = uninterrupted vertical release.

Table 14. VOLUME SOURCE EMISSIONS RELEASE PARAMETERS (ENGLISH UNITS)							
Release Point	Description	UTM[a] Coordinates, Zone 11		Base Elevation (ft)[c]	Release Height (ft)	Initial Horizontal Dimension (ft)	Initial Vertical Dimension (ft)
		Easting (m)[b]	Northing (m)				
HEATVOL1	Volume source for Heaters 1, 2, and 3	693080.02	4757820.7	3632.61	55.00	7.0	23.3

a. Universal Transverse Mercator.
b. Meters.
c. Feet.

DEQ's permitting policies and guidance require that each permit application have stand-alone documentation to support the appropriateness of release parameters used in the air impact analyses.

Glanbia's February 4, 2016 revised modeling submittal contained supporting documentation for the modeled release parameters. The information was provided in the submitted permit application, in Appendix H: Exhaust Parameter Substantiation. This appendix contained a stand-alone report listing modeled release parameters and the methods used to determine those release parameters for the various types of emissions sources included in the modeling demonstration.

Proposed LUFT Baghouse Vent/Stack
Design specification data was provided in the initial permit application. Vendor email communication to Glanbia and AECOM staff documented the proposed baghouse's volumetric flow rate and release temperature. The baghouse's stack release height and exit diameter specifications were listed in Section 3-Proposed Project. Additional documentation on release height and diameter was not noted, but was assumed to be consistent with engineering design. This stack was modeled as an uninterrupted vertical release. The release height was modeled at 7 feet above the new LUFT building roofline.

Existing Baghouse Vents
The report included several attachments that addressed release parameters for baghouse vents. The documentation included on-site data collection by Glanbia staff in Attachment 3: Glanbia Field Survey. The field survey was conducted on December 7, 2015. This field audit replaces the July 23, 2015 Glanbia Field Audit described in Section 3 of the initial PTC application modeling report, submitted on July 31, 2015. Primary baghouse and dryer point sources represented in the modeling were verified on-site using a portable electronic micro-manometer to provide a value for the actual wet basis volumetric flow rate through the stack. Attachment 2 to Appendix H of the application contained the operating instructions for using the micro-manometer device. Flow velocity for each baghouse stack was described as being obtained under conditions when all processes were running and the fan systems in the baghouses operate under constant speed rather than variable speeds, so normal operating conditions are assumed to have been used to establish stack exit velocity for these baghouses.

Release temperatures were determined using a Fluke 5411B digital thermometer rather than the Air Data multi-meter electronic micro-manometer. Stack height and diameters were hand-measured using a tape measure where possible, or estimated through other means when deemed inaccessible to Glanbia staff.

The majority of the baghouse stacks were equipped with caps oriented so that airflow could have been impeded by the cap device. The support documentation field survey report indicated that the impediment to flow was caused by counterweights that drew the cap into the airstream, as shown in photographs in the Glanbia Field Survey, Appendix H, Attachment 3, page 3. Page 5 of the same survey shows each of the baghouse stacks without counterweights, which kept the stack cap out of the path of flow of the exhaust. These weights have been removed to protect the rain caps from wind damage per AECOM/Glanbia's March 31, 2016 revised modeling report (see pages 14 and 15). Maintaining an unimpeded flow from these sources is critical in maintaining $PM_{2.5}$ NAAQS compliance. The following baghouses were identified as having stack terminations with removed rain cap counterweights:

- Lactose Receiving Baghouse,
- Powder Bin Baghouse,
- Mill Receiving Baghouse,
- Fluidized Bed Baghouse, and
- Lactose Primary Baghouse.

The WPC Dryer Baghouse appeared to have an uninterrupted flow in the weighted and unweighted rain cap photos. Regardless of the conditions depicted, these baghouses were all represented in the model without impairment to exhaust flow—a critical assumption given the narrow margin of NAAQS compliance.

Boilers
An EPA F_d factor[2] was used to establish exhaust volumetric flow rate for each boiler using natural gas as the worst-case PM-emitting fuel over biogas. Glanbia used a Cleaver-Brooks boiler manufacturer energy efficiency study to determine the estimated stack exit temperature based on assumed boiler size (per Appendix H, Attachment 4, of the final permit application. DEQ commented on the exit temperatures chosen for certain boilers in DEQ's March 4, 2016, incompleteness determination letter. Glanbia and AECOM revised the exit temperatures according to the comment.

Boiler stack release heights and exit diameters were determined by Glanbia by observation, not by direct physical measurement with a tape measure, due to Glanbia safety concerns. The physical dangers present on the rooftop of the building housing the buildings (as seen in in the December 7, 2015 Glanbia Field Survey report's photo on Page 4, labeled "Boiler Stacks (Boilers 1 – 5)") were not specifically described in the submitted modeling report, and DEQ modeling staff was unable to locate any performance testing conducted on any of the boilers for additional information. However, DEQ is satisfied that the stack height and stack diameter values used in the model are adequately accurate for the source.

Biogas Flare
Release parameters in the final modeling demonstration were revised to match the release parameters used in the May 10, 2010, PTC modification's air impact analyses. As AECOM stated in Appendix H: Exhaust Parameter Substantiation, the use of the actual flare diameter and stack release height instead of an EPA default method calculating a larger equivalent diameter and effective release height based on flare heat release and the actual physical flare design is conservative. Volumetric flow rate and release height are minimized. Release temperature was modeled at a conservatively lower temperature than accepted EPA methods allow for, by a difference of 240 Kelvin. DEQ review concluded that the release parameters used for the biogas flare in the air impact analyses were conservative and acceptable.

Emergency Generator
Release parameters for the emergency generator engine were identical to those used in the 2010 PTC modification air impact analyses. The velocity and stack diameter places the volumetric flow rate at 14,090 actual cubic feet per minute. Historical documentation identifies this generator engine as a Cummins diesel-fired engine with 1,093 horsepower (815 kilowatt output). Given the engine size, the stack flow is within the range that DEQ considers acceptable for an internal combustion emergency generator engine. The exit temperature, while high, is not expected to drop much due to any stack extension as the release height is relatively low.

Heaters–Volume Source
Three small natural gas-fired heater units were modeled as a single elevated volume source. The release parameter assumptions and calculations were included in the support document. AECOM's determination of the volume source release parameters was appropriate for the sources and consistent with EPA and DEQ guidance materials.

DEQ approves the release parameters used in these analyses.

4.0 Results for Air Impact Analyses

4.1 Results for Significant Impact Analyses

Glanbia performed SIL analyses for 24-hour PM_{10}, annual $PM_{2.5}$, and 24-hour $PM_{2.5}$. No other pollutant emissions increases were associated with this project. As shown in Table 15 below, the maximum impacts for the proposed project exceeded applicable SILs, requiring cumulative NAAQS impact analyses for all pollutants and averaging periods modeled.

Table 15. RESULTS FOR SIGNIFICANT IMPACT LEVEL ANALYSES

Pollutant	Averaging Period	Modeled Design Value Concentration ($\mu g/m^3$)[a]	SIL[b] ($\mu g/m^3$)	Percent of SIL
$PM_{2.5}$[c]	24-hour	4.2[e]	1.2	350%
	Annual	0.8[f]	0.3	267%
PM_{10}[d]	24-hour	5.3[g]	5.0	106%

a. Micrograms per cubic meter.
b. Significant impact level.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
d. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
e. Modeled design value is the maximum 5-year mean of 1st highest 24-hour values from each year of a 5-year meteorological dataset.
f. Modeled design value is the maximum 5-year mean of annual average values from each year of a 5-year meteorological dataset.
g. Modeled design value is the maximum 24-hour average impact out of all five years of meteorological data.

4.2 Results for Cumulative NAAQS Impact Analyses

Glanbia presented cumulative NAAQS impact analyses for 24-hour PM_{10}, annual $PM_{2.5}$, and 24-hour $PM_{2.5}$. The results for the cumulative impact analyses are listed in Table 16. Ambient impacts for the facility were extremely close to the allowable annual and 24-hour $PM_{2.5}$ NAAQS. Because of this, it is very important that all sources operate as described in the submitted PTC application and that emissions used in the air impact analyses represent potential to emit (PTE) as limited by design capacity or as limited by an enforceable permit condition.

Table 16. RESULTS FOR CUMULATIVE IMPACT ANALYSES						
Pollutant	**Averaging Period**	**Modeled Design Value Concentration ($\mu g/m^3$)[a]**	**Background Concentration ($\mu g/m^3$)**	**Total Ambient Impact ($\mu g/m^3$)**	**NAAQS[b] ($\mu g/m^3$)**	**Percent of NAAQS**
$PM_{2.5}$[c]	24-hour	16.4[e]	18.4[h]	34.8	35	99%
	Annual	5.7[f]	6.2[h]	11.9	12	99%
PM_{10}[d]	24-hour	40.1[g]	41.0	81.1	150	54%

a. Micrograms per cubic meter.
b. National ambient air quality standards.
c. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
d. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.
e. Modeled design value is the maximum 5-year mean of 8th highest 24-hour values from each year of a 5-year meteorological dataset.
f. Modeled design value is the maximum 5-year mean of annual average values from each year of a 5-year meteorological dataset.
g. Modeled design value is the maximum of 6th highest 24-hour values from a 5-year meteorological dataset.
h. This is a total background concentration based on NW AIRQUEST and neighboring facility, J.D. Heiskell, background components as listed in Table 3 of this memorandum.

5.0 Conclusions

The ambient air impact analyses demonstrated to DEQ's satisfaction that emissions from the Glanbia facility will not cause or significantly contribute to a violation of the PM_{10} and $PM_{2.5}$ NAAQS.

References

1. *State of Idaho Guideline for Performing Air Quality Impact Analyses.* Idaho Department of Environmental Quality. September 2013. State of Idaho DEQ Air Doc. ID AQ-011. Available at http://www.deq.idaho.gov/media/1029/modeling-guideline.pdf.

2. *Method 19-Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxide Emission Rates, Table 19-2.* 40 Code of Federal Regulations Part 60, Appendix A-7, June 16, 2016. Available at http://www.ecfr.gov/cgi-bin/text-idx?SID=e731fa0c6c8845cb318719580a198fc3&mc=true&node=pt40.8.60&rgn=div5#ap40.8.60.a_67.

Appendix: Co-Contributing Source Documentation

- **DEQ Review of J.D. Heiskell – Gooding PTC and Emission Estimates with $PM_{2.5}$ and PM_{10} Background Calculations**
- **Current J.D. Heiskell Permit to Construct and Tier II Operating Permit – T2-2013.0052, Project 61272, issued October 7, 2013**
- **1999 DEQ Permitting Technical Review Memorandum**
- **1999 Land O'Lakes Permit to Construct Application**

Glenbie Gooding Neighboring Source | 7/22/2015

TD Heiskell Formerly
Land O'Lakes Feed in Gooding

P.T.E. – The current PTC P-050403, issued 6/2/2005 has no P.T.E. limits.
This PTC was a name change from Land O'Lakes to TD Heiskell

The 1999 PTC has no emission limits either.

'98 PTC 40,000 bu/Lr grain receiving
& 4.8 mm Btu/hr natgas boiler,
vitamin/mineral supplement plant.
+ Existing facility

Boiler: 0.05 lb/hr & 0.21 T/yr PM_{10}

No stack → Grain Receiving: 8.0 lb/hr & 0.6 T/yr PM_{10}
at 1000 TON/hr rec'n. & 150,000 TON/yr

& Vitamin & Mineral Plant 135.0 lb/hr PM_{10} & 32.4 T/yr PM_{10}.
All fugitive

The PTC does not count fugitives as PTE.
because facility is not subject to NSPS.

New Project is 33.21 T/yr with fugitives

Stated PTE is 0.21 T/yr PM_{10} → Boiler only

The Existing facility emissions are unknown.

Existing? They are not even discussed for facility-wide source classification.

2 Existing Boilers
+ Existing facility.

11/17/1995 – Issued a Section 220 Exemption for the initial ~~$~~ ANIMAL FEED & COMMODITIES TRANSLOADING facility

GRAIN PROCESSING | Section 9.9.1 – Table 9.9.1-2

Under the 2003 AP42 Emission Factors in place of the 1999 & 1995 Factors. What is the PTE for PM_{10} & $PM_{2.5}$?

1999 PTC Modification for:

Grain Processing Facilities AP-42 Table 9.9.1-2.

Receiving Emissions: 0.0025 lb/ton PM_{10} (No $PM_{2.5}$ factor)

Shipping Emissions 0.0008 lb/ton PM_{10}
No $PM_{2.5}$ Factor.

Amount Received: 150,000 ton/yr corn
72,000 ton/yr minerals
222,000 TON/yr.

Amount Shipped:
72,000 T/yr.

PM_{10}: $\left(0.0025 \frac{lb}{ton}\right)\left(222{,}000 \frac{ton}{yr}\right) + \left(0.0008 \frac{lb}{TON}\right)\left(72{,}000 \frac{TON}{yr}\right)$

PM_{10} = 555 lb/yr + 58 lb/yr

PM_{10} = 613 lb/yr or 0.31 T/yr. Process.

1999 PTC Mod. 0.31 T/yr Process
0.21 T/yr Boiler
0.52 T/yr PM_{10} ←
$PM_{2.5}$ Not specified by these factors.

NEW FACTOR PTE IS

NewPTE: $\frac{0.31 \text{ T/yr}}{32.4 \text{ T/yr}} = 0.95$ (0.95)(100) = 1.0%

1999.

WITH CONSERVATIVE 1999 Emission factors

PM_{10}: 22.8 T/yr (initial)
+ 33.2 (99 mod)
56.0 T/yr. PM_{10}.

JD Heiskell, Goodings. | DM

Existing Boilers (2). Each at 150 BHP (1995 PTC),

1 BHP = 33,475 Btu/hr.

150 BHP = 5.0 MMBtu/hr Each Boiler

Review 1999 PTC Parker Boilers: 4.83 MMBtu/hr

Statement of Basis (11/8/99): PTE for PM_{10} = 0.21 T/yr.

Vitamin/Mineral Plant.

135.0 lb/hr PM_{10} & 32.4 T/yr PM_{10} (Fugitives).

lb/ton: 0.6 Truck Receiving } Vitamin/Mineral Plant Emission Calcs.
lb/ton: 0.3 Truck Loading }

150 T/hr & 72,000 Ton/yr.

Corn Receiving PM_{10}: 8.10 lb/hr & 0.6 T/yr.

0.008 lb PM_{10}/ton

Throughputs 1000 ton/hr
150,000 Ton/yr.

$PM_{2.5}$ Fraction of PM_{10} Based on 2003 AP-42 Factors Table 9.9.1

Grain Receiving) $\frac{PM_{2.5}}{PM_{10}} = \frac{0.0013}{0.0078} = 16.7\%$. $PM_{2.5}/PM_{10}$.

GRAIN LOADING. $\frac{0.0049 \text{ lb/ton } PM_{2.5}}{0.029 \text{ lb/ton } PM_{10}} \times 100 = 16.9\%$. $\frac{PM_{2.5}}{PM_{10}}$.

1999 Modification at Land O Lakes:

Using the 1999 PTE Values.
All PM_{10} is $PM_{2.5}$ for Boilers
Avg. $PM_{2.5}/PM_{10}$ ratio is 16.8% for Process Emission

PM_{10}: 33.0
+ 0.21
33.2 T/yr Mod. PM_{10}.

$PM_{2.5}$ = (0.168)(33 T/yr)
= 5.5 T/yr $PM_{2.5}$ Process
+ 0.21 T/yr New Boiler $PM_{2.5}$
= 5.7 T/yr $PM_{2.5}$ 1999 ... Total Emissions

Existing Facility (1995 PTC Exemption) + 1999 PTC Modification
= Total Emissions for JD Heiskell.

Existing Facility Covered By the 1995 PTC Exemption.

Fugitive Emissions may not count toward PTE for a PTC but they count for modeling demonstration ambient backgrounds.

From the August 21, 1995 PTC App

Existing Facility PTC App. only lists PM emissions

Source	Ton/yr PM TOTAL	PM_{10}* Ton/yr	$PM_{2.5}$ (Ton/yr)*
RECEIVING	30	7.3	1.2
Rolled Grain System1	3.7	1.9	0.4
Rolled Grain System2	3.7	1.9	0.4
Whole Cottonseed Dock	15	7.5	1.5
Load Out Bins	15	3.8	0.7
Boilers (2) @ 5MM Btu/hr		0.4	0.4
	Initial facility.	22.8	4.6

Use AP-42 To develop the fractions. Use The Grain Elevator Section Table 9.9.1-1 except flakers.
Fractions to apply to emission rates above

Activity/Source	PM_{10}/PM	$PM_{2.5}/PM$
Grain Receiving	24.4%	4.1%
Rolled Grain (Apply Table 9.9.1-2 Flaking PM_{10} 50% of PM	50%	Assumed 10%
Whole Cottonseed.	No data. Assumed 50%	Assumed 10%.
Storage Bin (vent).	25.2%	4.4%

Note that Conveyors/transfer points were not listed.

Conservative values:

$PM_{2.5}$ = ?

Existing Facility: 4.6 T/yr

1999 Modification Project: Table 9.9.1-I Has $PM_{2.5}$ factors.

Railcar Receiving $\frac{PM_{2.5}}{PM_{10}} = \frac{0.0013 \text{ lb/ton}}{0.0078 \text{ lb/ton}} = 0.167$

Loadout By truck $\frac{PM_{2.5}}{PM_{10}} = \frac{0.0049 \text{ lb/ton}}{0.029 \text{ lb/ton}} = 0.169$

Use 0.017 $\frac{\text{lb } PM_{2.5}}{\text{lb } PM_{10}}$ as a fraction:

$\left(0.17 \frac{\text{lb } PM_{2.5}}{\text{lb } PM_{10}}\right)$ 32.4 Ton/yr PM_{10} =

1999 Project = 5.5 T/yr $PM_{2.5}$ + Boiler (0.21 T/yr $PM_{2.5}$)

= 5.7 T/yr $PM_{2.5}$

Facility wide $PM_{2.5}$ = 4.6 T/yr. + 5.7 T/yr

$PM_{2.5}$ = 10.3 T/yr ←

PM_{10} = 22.8 T/yr Existing Processes
0.4 T/yr Existing Boilers
32.4 Vita-Mix Plant
0.6 New Corn Receiving
0.2 Boiler

56.4 T/yr PM_{10} Entire facility ←

PERSISTENCE FACTORS, 2023 NSR Background Concentration memo.

0.036 $\mu g/m^3$, 24 hr avg per lb/ton emissions

0.011 $\mu g/m^3$, ANNUAL avg per lb/ton emissions.

PM_{10}, 24 hr avg: $\left(0.036 \frac{\mu g/m^3}{\text{ton}}\right)\left(56.4 \frac{\text{T } PM_{10}}{\text{yr}}\right)$ = 2.0 $\frac{\mu g}{m^3}$, 24-hr avg

$PM_{2.5}$, 24 hr avg (use same factor): $\left(0.036 \frac{\mu g/m^3}{\text{ton}}\right)\left(10.3 \text{ Ton/yr } PM_{2.5}\right)$ = 0.4 $\frac{\mu g}{m^3}$, 24-hr avg

$PM_{2.5}$ annual: $\left(0.011 \frac{\mu g/m^3}{\text{ton}}\right)\left(10.3 \frac{\text{Ton}}{\text{yr}} PM_{2.5}\right)$ = 0.1 $\mu g/m^3$, annual avg

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706 • (208) 373-0502

C.L. "Butch" Otter, Governor
Curt Fransen, Director

October 7, 2013

Steve Busby, Idaho Operations Manager
J D Heiskell & Co
139 River Vista Place Suite 102
Twin Falls, ID 83301

RE: Facility ID No. 083-00086, J D Heiskell & Co, Twin Falls
Final Permit to Construct and Tier II Operating Permit

Dear Mr. Busby:

The Department of Environmental Quality (DEQ) is issuing Permit to Construct and Tier II Operating Permit (PTC/T2) No. T2-2013.0052 to J D Heiskell & Co for the name change at the animal feed facility located at Twin Falls, in accordance with the Rules for the Control of Air Pollution in Idaho, 58.01.01.200 – 228 and IDAPA 58.01.01.400 - 470, respectively.

The enclosed Tier II operating permit is based on the information contained in your permit application received on September 24, 2013. This Permit to Construct/Tier II permit is effective immediately and replaces PTC/T2 No. 083-00086, issued August 22, 2002. This permit does not release J D Heiskell & Co from compliance with all other applicable federal, state, or local laws, regulations, permits, or ordinances. Please note that this permit expires five years after the issuance date. Modification to and/or renewal of this permit shall be requested in a timely manner in accordance with the Rules for the Control of Air Pollution in Idaho.

In order to fully understand the compliance requirements of this permit, DEQ highly recommends that you schedule a meeting with Bobby Dye, Regional Air Quality Manager, at 208-736-2190 to review and discuss the terms and conditions of this permit. Should you choose to schedule this meeting, DEQ recommends the following representatives attend the meeting: your facility's plant manager, responsible official, environmental contact, and any other staff responsible for day-to-day compliance with permit conditions.

Pursuant to IDAPA 58.01.23, you, as well as any other entity, may have the right to appeal this final agency action within 35 days of the date of this decision. However, prior to filing a petition for a contested case, I encourage you to contact Carole Zundel at 208-373-0477 or carole.zundel@deq.idaho.gov to address any questions or concerns you may have with the enclosed permit.

Sincerely,

Mike Simon
Stationary Source Program Manager
Air Quality Division

MS/CZ Permit No. T2-2013.00520 PROJ 61272

Enclosure

AIR QUALITY

PERMIT TO CONSTRUCT AND TIER II OPERATING PERMIT

Permittee	J D Heiskell & Co
Permit Number	T2-2013.0052
Project ID	61272
Facility ID	083-00086
Facility Location	2584 Beryl Ave. Twin Falls, ID 83301

Permit Authority

This permit (a) is issued according to the "Rules for the Control of Air Pollution in Idaho" (Rules), (IDAPA 58.01.01.200–228; and IDAPA 58.01.01.400–410); (b) pertains only to emissions of air contaminants regulated by the State of Idaho and to the sources specifically allowed to be constructed or modified by this permit; (c) has been granted on the basis of design information presented with the application; (d) does not affect the title of the premises upon which the equipment is to be located; (e) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment; (f) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; (g) in no manner implies or suggests that the Idaho Department of Environmental Quality (DEQ) or its officers, agents, or employees assume any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment. Changes in design, equipment, or operations may be considered a modification subject to DEQ review in accordance with IDAPA 58.01.01.200–228.

Date Issued	October 7, 2013
Date Expires	October 7, 2018

Carole Zundel

Carole Zundel, Permit Writer

Mike Simon, Stationary Source Manager

Contents

1. Permit Scope

Purpose

1.1 This permit is being issued for a name change.

1.2 This PTC and Tier II operating permit revises Tier II Operating Permit and Permit to Construct No. 083-00086, issued August 22, 2002.

1.3 This PTC and Tier II operating permit supersedes Tier II Operating Permit and Permit to Construct No. 083-00086, issued August 22, 2002.

Regulated Sources

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

Table 1.1. Regulated sources.

Permit Section	Source	Control Equipment
2	Natural gas-fired boiler, Superior model 4-X-1024-S150, 7.5 MMBtu/hr Grain bins (2), 500,000 bushels each Product storage bins Truck loadout	None
3	Steam roller mills (2), Panhandle machine shop, rated at 12.7 T/hr Electric dryer/coolers (2)	Cyclones (2)

2. Facility-Wide Conditions

Fugitive Emissions

2.1 All reasonable precautions shall be taken to prevent particulate matter (PM) from becoming airborne in accordance with IDAPA 58.01.01.650–651. In determining what is reasonable, consideration will be given to factors such as the proximity of dust-emitting operations to human habitations and/or activities and atmospheric conditions that might affect the movement of PM. Some of the reasonable precautions include, but are not limited to, the following practices, where practical:

- Use, where practical, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of lands;
- Application, where practical, of asphalt, oil, water, or suitable chemicals to, or covering of, dirt roads, material stockpiles, and other surfaces which can create dust;
- Installation and use, where practical, of hoods, fans, and fabric filters or equivalent systems to enclose and vent the handling of dusty materials. Adequate containment methods should be employed during sandblasting or other operations.
- Covering, where practical, of open-bodied trucks transporting materials likely to give rise to airborne dusts;
- Paving of roadways and their maintenance in a clean condition, where practical; and
- Prompt removal of earth or other stored material from streets, where practical.

2.2 The permittee shall monitor and maintain records of the frequency and the method(s) used (e.g., water, chemical dust suppressants, etc.) to reasonably control fugitive emissions.

2.3 The permittee shall maintain records of all fugitive dust complaints received. The permittee shall take appropriate corrective action as expeditiously as practicable after receiving a valid complaint. The records shall include, at a minimum, the date that each complaint was received and a description of the following: the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

2.4 The permittee shall conduct a quarterly facility-wide inspection of potential sources of fugitive emissions during daylight hours and under normal operating conditions to ensure that the methods used to reasonably control fugitive emissions are effective. If fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee shall maintain records of the results of each fugitive emissions inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: the permittee's assessment of the conditions existing at the time fugitive emissions were present (if observed), any corrective action taken in response to the fugitive emissions, and the date the corrective action was taken.

Odors

2.5 The permittee shall not allow, suffer, cause, or permit the emission of odorous gases, liquids, or solids to the atmosphere in such quantities as to cause air pollution.

2.6 The permittee shall maintain records of all odor complaints received. If the complaint has merit, the permittee shall take appropriate corrective action as expeditiously as practicable. The records shall include, at a minimum, the date that each complaint was received and a description of the following: the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Visible Emissions

2.7 The permittee shall not discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60-minute period which is greater than 20% opacity as determined by procedures contained in IDAPA 58.01.01.625. These provisions shall not apply when the presence of uncombined water, NOx, and/or chlorine gas is the only reason for the failure of the emission to comply with the requirements of this section.

2.8 The permittee shall conduct a quarterly facility-wide inspection of potential sources of visible emissions, during daylight hours and under normal operating conditions. Sources that are monitored using a continuous opacity monitoring system (COMS) are not required to comply with this permit condition. The inspection shall consist of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emission, the permittee shall either:

a) take appropriate corrective action as expeditiously as practicable to eliminate the visible emissions. Within 24 hours of the initial see/no see evaluation and after the corrective action, the permittee shall conduct a see/no see evaluation of the emissions point in question. If the visible emissions are not eliminated, the permittee shall comply with b).

or

b) perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is greater than 20%, as measured using Method 9, for a period or periods aggregating more than three minutes in any 60-minute period, the permittee shall take all necessary corrective actions and report the period or periods as an excess emission in the annual compliance certification and in accordance with IDAPA 58.01.01.130–136.

2.9 The permittee shall maintain records of the results of each visible emissions inspection and each opacity test, when conducted. The records shall include, at a minimum, the date and results of each inspection and test and a description of the following: the permittee's assessment of the conditions existing at the time visible emissions are present (if observed), any corrective action taken in response to the visible emissions, and the date corrective action was taken.

Open Burning

2.10 The permittee shall comply with the "Rules for Control of Open Burning" (IDAPA 58.01.01.600–623).

Reports and Certifications

2.11 Any reporting required by this permit—including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, notifications of intent to test, testing reports, or compliance certifications—shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete. Any reporting required by this permit, with the exception of a Portable Equipment Registration and Relocation form, shall be submitted to the following address:

Air Quality Permit Compliance
Department of Environmental Quality
Twin Falls Regional Office
650 Addison Ave West, Suite 110
Twin Falls, ID 83301
Phone: (208) 736-2190
Fax: (208) 736-2194

Obligation to Comply

2.12 Receiving a Tier II operating permit shall not relieve any owner or operator of the responsibility to comply with all applicable local, state, and federal rules and regulations.

3. Steam Roller Mills (2) And Dryer/Coolers (2)

3.1 Process Description

This process consists of a two steam roller mills for steaming barley and com to produce animal feed. The roller mills are followed by two electric dryer/cooler units to inhibit fermentation by adjusting moisture content.

3.2 Control Device Descriptions

Emissions from each dryer/cooler are controlled by two cyclones with a flow of approximately 7,500 acfm each.

Emission Limits

3.3 Particulate matter emissions from each cyclone shall not exceed 1.4 lb/hr or 4.4 T/yr in any 12-month period,

[IDAPA 58.01.01.211,01, 5/1/94]

4. Facility-Wide Emissions Inventory

The following table provides a summary of the emissions inventory of the facility based on PTE for criteria air pollutants.

Table 4.1 Emissions Inventory

Source Description	PM (T/yr)	CO (T/yr)	SO_2 (T/yr)	NO_x (T/yr)	VOC (T/yr)
Natural gas boiler	0.23	2.5	0.02	2.99	0.20
Dryer/cooler #1 Cyclone	4.4				
Dryer/cooler #2 Cyclone	4.4				
Total	**9.03**	**2.51**	**0.02**	**2.99**	**0.20**

5. General Provisions

General Compliance

5.1 The permittee has a continuing duty to comply with all terms and conditions of this permit. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the "Rules for the Control of Air Pollution in Idaho." The emissions of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit, the "Rules for the Control of Air Pollution in Idaho," and the Environmental Protection and Health Act (Idaho Code §39-101, et seq.).

[Idaho Code §39-101, et seq.]

5.2 The permittee shall at all times (except as provided in the "Rules for the Control of Air Pollution in Idaho") maintain in good working order and operate as efficiently as practicable all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.

[IDAPA 58.01.01.211, 405, 5/1/94]

5.3 Nothing in this permit is intended to relieve or exempt the permittee from the responsibility to comply with all applicable local, state, or federal statutes, rules, and regulations.

[IDAPA 58.01.01.212.01, 406, 5/1/94]

Inspection and Entry

5.4 Upon presentation of credentials, the permittee shall allow DEQ or an authorized representative of DEQ to do the following:

- Enter upon the permittee's premises where an emissions source is located or emissions related activity is conducted, or where records are kept under conditions of this permit;
- Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;
- Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
- As authorized by the Idaho Environmental Protection and Health Act, sample or monitor, at reasonable times, substances or parameters for the purpose of determining or ensuring compliance with this permit or applicable requirements.

[Idaho Code §39-108]

Construction and Operation Notification

5.5 Only the terms and conditions pertaining to Tier II operating permit requirements are subject to the expiration date of this permit. The permit to construct conditions in this permit shall expire if construction has not begun within two years of its issue date, or if construction is suspended for one year.

[IDAPA 58.01.01.211.02, 405, 5/1/94]

5.6 The permittee shall furnish DEQ written notifications as follows:

- A notification of the date of initiation of construction, within five working days after occurrence;
- A notification of the date of any suspension of construction, if such suspension lasts for one year or more;

- A notification of the anticipated date of initial start-up of the stationary source or facility not more than sixty days or less than thirty days prior to such date; and
- A notification of the actual date of initial start-up of the stationary source or facility within fifteen days after such date; and
- A notification of the initial date of achieving the maximum production rate, within five working days after occurrence - production rate and date.

[IDAPA 58.01.01.211, 405, 5/1/94]

Performance Testing

5.7 If performance testing (air emissions source test) is required by this permit, the permittee shall provide notice of intent to test to DEQ at least 15 days prior to the scheduled test date or shorter time period as approved by DEQ. DEQ may, at its option, have an observer present at any emissions tests conducted on a source. DEQ requests that such testing not be performed on weekends or state holidays.

5.8 All performance testing shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. Without prior DEQ approval, any alternative testing is conducted solely at the permittee's risk. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the testing does not satisfy the testing requirements. Therefore, at least 30 days prior to conducting any performance test, the permittee is encouraged to submit a performance test protocol to DEQ for approval. The written protocol shall include a description of the test method(s) to be used, an explanation of any or unusual circumstances regarding the proposed test, and the proposed test schedule for conducting and reporting the test.

5.9 Within 30 days following the date in which a performance test required by this permit is concluded, the permittee shall submit to DEQ a performance test report. The written report shall include a description of the process, identification of the test method(s) used, equipment used, all process operating data collected during the test period, and test results, as well as raw test data and associated documentation, including any approved test protocol.

[IDAPA 58.01.01.157, 4/5/00]

Monitoring and Recordkeeping

5.10 The permittee shall maintain sufficient records to ensure compliance with all of the terms and conditions of this permit. Monitoring records shall include, but not be limited to, the following: (a) the date, place, and times of sampling or measurements; (b) the date analyses were performed; (c) the company or entity that performed the analyses; (d) the analytical techniques or methods used; (e) the results of such analyses; and (f) the operating conditions existing at the time of sampling or measurement. All monitoring records and support information shall be retained for a period of at least five years from the date of the monitoring sample, measurement, report, or application. Supporting information includes, but is not limited to, all calibration and maintenance records, all original strip-chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit. All records required to be maintained by this permit shall be made available in either hard copy or electronic format to DEQ representatives upon request.

[IDAPA 58.01.01.211, 405, 5/1/94]

Excess Emissions

5.11 The permittee shall comply with the procedures and requirements of IDAPA 58.01.01.130–136 for excess emissions due to start-up, shut-down, scheduled maintenance, safety measures, upsets, and breakdowns.

[IDAPA 58.01.01.130–136, 4/5/00]

Certification

5.12 All documents submitted to DEQ—including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certification—shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.

[IDAPA 58.01.01.123, 5/1/94]

False Statements

5.13 No person shall knowingly make any false statement, representation, or certification in any form, notice, or report required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.125, 3/23/98]

Tampering

5.14 No person shall knowingly render inaccurate any monitoring device or method required under this permit or any applicable rule or order in force pursuant thereto.

[IDAPA 58.01.01.126, 3/23/98]

Expiration and Renewal

5.15 Only those permit conditions regulated in accordance of IDAPA 58.01.01.400-410 are subject to expiration. The permittee shall submit an application to DEQ for renewal of this permit at least six months before, but no earlier than 18 months before the expiration of this permit. To ensure that the term of the permit does not expire before the permit is renewed the permittee is encouraged to submit a renewal application nine months prior to the date of the expiration. The expiration of a permit will not affect the operation of a stationary source or facility during the administrative procedure period associated with the permit renewal.

[IDAPA 58.01.01.405.03, 5/1/94]

Transferability

5.16 This permit is transferable in accordance with procedures listed in IDAPA 58.01.01.209.06 and 404.05.

[IDAPA 58.01.01.209.06, 404.05, 4/11/06]

Severability

5.17 The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

[IDAPA 58.01.01.211, 405, 5/1/94]

November 8, 1999

MEMORANDUM

TO: Orville D. Green, Administrator
State Air Quality Program

FROM: Susan J. Richards, Program Manager
Air Quality Permit Program

SUBJECT: P-990073, Land O'Lakes Feed Division, Gooding
(Natural Gas Boiler, Receiving System and Diary Feed Supplement Plant)

PROJECT DESCRIPTION

Land O'Lakes Feed Division has submitted a PTC application for the construction of a natural gas-fired boiler, new grain receiving system, and a vitamin/mineral feed supplement plant to the existing facility located in Gooding, Idaho.

The boiler is a natural gas-fired system rated at 4.83 MMBtu/hr heat input. The boiler is used to supply steam to the existing corn and barley flaking process of the facility. The new grain receiving system will increase the grain unloading to 40,000 bushels per hour. A new dairy feed supplement plant will be constructed that will receive, store, blend and load out the vitamin/mineral supplements.

DISCUSSION

On June 10, 1999, DEQ received a PTC application from Land O'Lakes Feed. On July 16, 1999, DEQ determined the application complete.

FEES

The Land O'Lakes Feed facility is not a major facility as defined in IDAPA 16.01.01.008.10 (*Rules for the Control of Air Pollution in Idaho*). Therefore, registration fees are not applicable in accordance with IDAPA 16.01.01.527.

RECOMMENDATION

Based on review of application materials and all applicable state and federal rules and regulations, staff recommends that Land O' Lakes Feed be issued PTC No. 047-00001 for the proposed grain receiving terminal and animal feed supplement plant. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

SJR/MS/hs G:\AHW\SIMON\PTC\LANDLAKE\990073.MM

cc: P. Rayne/AFS
R. Wilkosz/TSB
Twin Falls RO
Source File (047-00001)
COF

November 8, 1999

MEMORANDUM

TO: Susan J. Richards, Program Manager
Air Quality Permit Program

FROM: Mike Simon, Air Quality Engineer
State Technical Services

SUBJECT: ***PERMIT TO CONSTRUCT TECHNICAL ANALYSIS***
P-990073, Land O'Lakes Feed Division, Gooding
(Natural Gas Boiler, Receiving System and Diary Feed Supplement Plant)

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01.200 (*Rules for the Control of Air Pollution in Idaho*) for issuing Permits to Construct (PTC).

PROJECT DESCRIPTION

Land O'Lakes Feed Division has submitted a PTC application for the construction of a natural gas-fired boiler, new grain receiving system, and a vitamin/mineral feed supplement plant to the existing facility located in Gooding, Idaho.

The new boiler is the third boiler to be added to the facility. The boiler is a natural gas-fired system rated at 4.83 MMBtu/hr heat input. The boiler is used to supply steam to the existing corn and barley flaking process of the facility. This boiler is referenced as Boiler #3.

A new receiving system will be installed at the facility which includes an elevator leg that can process up to 40,000 bushels per hour.

A new dairy feed supplement plant will be constructed that will receive, store, blend, and load out the vitamin/mineral supplement.

SUMMARY OF EVENTS

On June 10, 1999, DEQ received a PTC application from Land O'Lakes Feed. On July 16, 1999, DEQ determined the application complete.

DISCUSSION

1. BOILER #3

1.1 Boiler Process Description

The proposed boiler is a natural gas-fired boiler rated at 4.83MMBtu/hr heat input. The boiler will be used to supply steam to the corn and barley flaking process. There are two other existing natural gas fired boilers (known as boilers #1 and #2) at this facility that have been previously determined categorically exempt on November 17, 1995 by DEQ. This new boiler is identified by the applicant as Boiler #3.

1.2 Boiler Equipment Listing and Stack Information

The proposed boiler (identified as Boiler #3) has the following manufacturer and information:

Manufacturer:	Parker boiler Co.;
Model :	115 ;
Rated Heat Input Capacity:	4,830,000 Btu/hr;
Fuel Type:	Natural Gas.
Stack ID:	Boiler #3;
Stack Height:	14.0 ft;
Stack Diameter:	1.83 ft;
Stack Gas Volume:	2415 acfm;
Stack Exit Gas Temperature:	400°F.

1.3. Boiler Emission Estimates

The boiler manufacturer has supplied emission factors for this model boiler. Table 1 below summarizes the boiler emission estimates based on operations of 8,760 hours per year. A copy of the calculation spreadsheet for the boiler is presented in Appendix A of this memo.

Table 1. Boiler Emission Summary

Pollutant	lb/hr	T/yr
VOC	0.18	0.78
CO	0.67	2.92
SO_2	0.001	0.02
NOx	0.58	2.54
PM-10	0.05	0.21

2. NEW RECEIVING SYSTEM

2.1 Receiving System Process Description

The applicant has proposed a new receiving system which will enable the facility to unload 100 carloads of corn in fifteen minutes. The system includes a receiving elevator leg that has the capacity to unload 40,000 bushels of grain within one hour.

Corn will be received, elevated, and dropped into two 79' x 69' storage bins. The system to move the corn is an enclosed system. This existing receiving system will remain in place. Emissions from the receiving system are fugitive.

2.2 Receiving System Equipment Listing

Corn will be received by railcar. The elevator leg has the following manufacture information:

Manufacturer: Schlagel;

Model : 48148 ;

Feed Material: Corn

There are no stacks associated with the receiving system.

2.3 Receiving System Emission Estimates

Fugitive PM-10 emission estimates for the receiving system have been calculated using EPA revised emission factors for grain handling operations. Calculations are based on a PM-10 emission factor of 0.008 lb/ton received and corn throughputs of 1000 tons per hour and 150,000 tons per year. A copy of the calculation spreadsheet for the receiving system is presented in Appendix A of this memo. Table 2 summarizes the PM-10 emission estimates for the receiving system.

Table 2. Receiving System Emissions Summary

Pollutant	lb/hr	T/yr
PM-10	8.0	0.6

3. VITAMIN/MINERAL PLANT

3.1 Vitamin/Mineral Plant Process Description

The applicant has proposed a plant that will receive, store, blend, and load vitamin/mineral supplements for the dairy industry. The major ingredients used in the process are calcium carbonate, mono-dicalcium phosphate, salt, magnesium, and sodium carbonate. The receiving and loading areas are enclosed in a 3-sided building to minimize fugitive emissions. An elevator leg is used in the process, and all mixing of ingredients are done in a closed building. Final products are loaded unto trucks for shipment.

3.2 Vitamin/Mineral Plant Equipment Listing

The vitamin/mineral receiving elevator leg has the following manufacture information:

Manufacturer: Schlagel;

Model : 30117 ;

Feed Material: Calcium, phosphorus, other.

There are no stacks associated with the vitamin/mineral plant.

3.3 Vitamin/Mineral Plant Emission Estimates

Fugitive PM-10 emission estimates for the plant system have been calculated using EPA emission factors for grain handling operations. Calculations are based on a PM-10 emission factor of 0.6 lb/ton for truck receiving, 0.3 lb/ton for truck loading and product throughputs of 150 tons per hour and 72,000 tons per year. A copy of the calculation spreadsheet for the vitamin/mineral plant is presented in Appendix A of this memo. Table 3 summarizes the PM-10 emission estimates for the vitamin/mineral plant.

Table 3. Vitamin/Mineral Plant Emission Summary

Pollutant	lb/hr	T/yr
PM-10	135.0	32.40

4. PROJECT EMISSION SUMMARY

Table 4 below summarizes the emissions and Potential to Emit (PTE) for this project. PTE for this project does not include fugitive emissions because this facility is not a designated facility and there are no emission units subject to a New Source Performance Standard.

Table 4. Project Emission Summary and PTE

Pollutant Name	Total[1] (T/yr)	PTE[2] (T/yr)
PM-10	33.21	0.21
VOC	0.78	0.78
NOx	2.54	2.54
SO_2	0.02	0.02
CO	2.92	2.92

Table 4-1 Notes:
1 Total includes fugitive and point source emissions.
2 PTE does not include fugitive emissions.

5. Modeling

Modeling of PM-10 emissions from the proposed boiler was conducted using EPA approved

SCREEN3. Maximum PM-10 impacts were calculated to 1.05ug/m^3 (24-hour) and 0.21ug/m^3 (annual) averages which demonstrate compliance with the PM-10 standards. Modeling information is presented in Appendix B of this memo.

Modeling was not conducted for the fugitive PM-10 emissions from grain handling and the vitamin/mineral plant because the facility will be limited on fugitive dust emissions at the facility property boundary in lieu of modeling.

6. Facility Classification

The Land O'Lakes Feed facility is not a major facility as defined in IDAPA 16.01.01.006.55. The facility is not a designated facility as defined in IDAPA 16.01.01.006.27. The AIRS classification for this facility is B because potential uncontrolled emissions are less than 100 tons per year. The Standard Industrial Classification code for this facility is 2048 which is defined as an establishment primarily engaged in feed processing.

7. Area Classification

The facility is located in Gooding, Idaho which is within Air Quality Control Region 63. This region is designated as attainment or unclassifiable for all criteria air pollutants.

8. Regulatory Review

The following is an explanation of the applicable air quality rules and regulations for the proposed project.

8.1 IDAPA 16.01.01.201 Permit to Construct Required

Land O' Lakes Feed Division has submitted a PTC application for the proposed construction of a natural gas fired boiler, corn receiving process, and a vitamin/mineral supplement plant. A PTC will be required because the project does not qualify for any category exemption in Sections 220 thru 223.

8.2 IDAPA 16.01.01.577 Ambient Air Quality Standards for Specific Air Pollutants

PM-10 emissions from the boiler have been modeled to demonstrate compliance with the PM-10 NAAQS. Fugitive PM-10 emissions associated with grain receiving, elevator, and loading operations are limited at the property boundary by permit limit.

8.3 IDAPA 16.01.01.650 Rules for the Control of Fugitive Dust

The facility is required to reasonably control fugitives to prevent fugitives from leaving the property boundary for more than three minutes in any sixty minute period.

9. Permit Requirements

The following is an explanation for the basis of the Permit to Construct requirements.

9.1 Emission Limits

All stacks, vents and other openings at this facility must comply with the opacity rules contained in IDAPA 16.01.01.625. In addition to the opacity requirement, fugitive emissions generated from facility operations must not be visible leaving the property boundary for more than three minutes in any sixty minute period. This requirement is in place to protect the 24-hour and annual National Ambient Air Quality Standard for PM-10.

9.2 Operating Requirements

The facility is required to reasonably control fugitive emissions per IDAPA 16.01.01.651. Section 2.1 of the permit lists precautions the facility may use to help prevent fugitive emissions.

9.3 Monitoring Requirements

The facility is required to maintain records of fugitive dust complaints at this facility and record any corrective actions taken.

10. Permit Coordination

A draft copy of the PTC and technical analysis was made available to the Twin Falls Regional Office for review prior to final issuance.

11. AIRS Information

Information necessary to the AIRS database is included as Attachment C of this Technical Memorandum.

FEES

The Land O'Lakes Feed facility in Gooding is not a major facility as defined in IDAPA 16.01.01.008.10. Therefore, registration fees are not applicable in accordance with IDAPA 16.01.01.527.

RECOMMENDATION

Based on review of application materials and all applicable state and federal rules and regulations, staff recommend that Land O' Lakes Feed be issued PTC No. 047-00001 for the proposed grain receiving terminal and animal feed supplement plant. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

MS/hs G:\AHW\SIMON\PTC\LANDLAKE\990073.TM

cc: P. Rayne/AFS
R. Wilkosz/TSB
Twin Falls RO
Source File (047-00001)
COF

APPENDIX A

Land ' O Lakes Feed(P-990073)

EMISSION ESTIMATES

- **Natural Gas-Fired Boiler**
- **Receiving System**
- **Vitamin/Mineral Plant**

Review Engineer: Mike Simon
Facility Name: Land O Lakes Feed
Project Number: 990073
Spreadsheet Date: 10/12/99
Filename: Land1 wk4

Boiler #3 Emission Estimates Spreadsheet

input data:

4.83 MMBtu/hr

Pollutant name	lbs per MMBtu/hr Emission Factor	lb/hr	T/yr
VOC	0.0371	0.18	0.78
CO	0.138	0.67	2.92
SO2	0.001	0.00	0.02
NOx	0.12	0.58	2.54
PM-10	0.01	0.05	0.21

Review Engineer:	Mike Simon
Facility Name:	Land O Lakes Feed
Project Number:	990073
Spreadsheet Date:	10/12/99
Filename:	Land2 wk4

Receiving System Emission Estimates Spreadsheet
input data:

Throughput	1000	tons per hour
	150000	tons per year

Pollutant name	PM-10 (lb/ton)	lb/hr	T/yr
PM-10	0.008	8.00	0.60

Review Engineer: Mike Simon
Facility Name: Land O Lakes Feed
Project Number: 990073
Spreadsheet Date: 10/12/99
Filename: Land3.wk4

Vitamin/Mineral Plant Emission Estimates Spreadsheet
input data:

Throughput 150 tons per hour
72000 tons per year

Pollutant name	PM-10 (lb/ton) Receiving	PM-10 (lb/ton) Loading	Total lb/hr	Total T/yr
PM-10	0.6	0.3	135.00	32.40

APPENDIX B

Land ' O Lakes Feed(P-990073)

SCREEN3 MODELING

- **Natural Gas-Fired Boiler**

0/15/99

1

4:18:19
*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

Boiler — 4.83 MM BTU/HR NAT. GAS

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	.126000
STACK HEIGHT (M)	=	4.2672
STK INSIDE DIAM (M)	=	.5578
STK EXIT VELOCITY (M/S)	=	4.6642
STK GAS EXIT TEMP (K)	=	477.5944
AMBIENT AIR TEMP (K)	=	293.1500
RECEPTOR HEIGHT (M)	=	.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	.0000
MIN HORIZ BLDG DIM (M)	=	.0000
MAX HORIZ BLDG DIM (M)	=	.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 1.374 M**4/S**3; MOM. FLUX = 1.039 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
1.	.0000	1	1.0	1.0	320.0	31.46	.75	.6	5 NO
100.	48.08	4	8.0	8.0	2560.0	6.64	8.26	4.7	5 NO
200.	34.70	4	4.5	4.5	1440.0	9.79	15.66	8.6	7 NO

	300.	26.98	4	2.5	2.5	800.0	15.14	22.82	12.4
9	NO								
	400.	22.53	4	2.0	2.0	640.0	17.86	29.71	15.7
6	NO								
	500.	19.25	4	1.5	1.5	480.0	22.39	36.52	19.0
2	NO								
	600.	16.82	4	1.5	1.5	480.0	22.39	43.03	21.8
3	NO								
	700.	14.68	4	1.0	1.0	320.0	31.46	49.80	25.2
6	NO								
	800.	13.57	4	1.0	1.0	320.0	31.46	56.11	27.8
9	NO								
	900.	12.39	4	1.0	1.0	320.0	31.46	62.37	30.4
7	NO								
	1000.	11.25	4	1.0	1.0	320.0	31.46	68.57	33.0
2	NO								

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 1. M:

	51.	52.66	3	10.0	10.0	3200.0	5.83	6.84	4.1
5	NO								

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** SUMMARY OF SCREEN MODEL RESULTS ***
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	52.66	51.	0.

PM-10 (24-hr) = $(52.66)(0.05)(0.4) = 1.05 \frac{ug}{m^3}$ OK

PM-10 (ANNUAL) = $(52.66)(0.05)(0.08) = 0.21 \frac{ug}{m^3}$ OK

APPENDIX C

Land ' O Lakes Feed(P-990073)

AIRS INFORMATION

ABBREVIATED AIRS DATA ENTRY SHEET

Name of Facility: Land O' Lakes Feed Division

AIRS/Permit #: 047-00001

Permit Issue Date: Nov. 1999

*Source/Emissions Unit Name (25 spcs) (Please use name as indicated in permit)	SCC # (8 digit #)	Air Program (SIP/NESHAP/ NSPS/PSD)
* Grain Receiving	30200751	SIP

RETURN TO PAT RAYNE
AIRS-PT.LST (9/95)

LAND O'LAKES™
FEED

MS
PCA# 86399 ✓
P#990073
MS ✓

SF

Steve Bohn, Western Region Plant Operations Manager
15840 North Simmons Road
Portland Oregon 97203
503-286-7186, Fax 503-286-7179

June 4 1999

State of Idaho
Department of Health and Welfare
Division of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706-1255

Dear Sirs:

Enclosed are two copies of an Application to Construct an Air Pollution Emitting Facility. This application is to add a boiler, receiving system, and dairy feed supplement plant to our existing facility in Gooding, Idaho. Also enclosed is a copy of the original application which was submitted on August 18, 1995, and the response by your office dated November 17, 1995 indicating the facility was categorically exempt from Permit to Construct requirements.

We are in the process of a special zoning permit with the Gooding County Planning and Zoning Commission. As such, they need assurance that your department is reviewing our application. *Please send Judy Daubner a note* confirming you have received and are reviewing this permit application. Their address is 624 Main Street in Gooding, Idaho 83330.

Please contact me if you have questions or need further information about this project.

Sincerely,

Steve Bohn
Plant Operations Manager

LAND O'LAKES **Gooding, Idaho**

Please refer to our original permit application for a scope of our business.

The new investment will include an additional steam boiler. Section 2 of the permit, Fuel Burning Equipment has been submitted to facilitate this addition. Boiler and fuel supporting documentation is also enclosed. The steam is used in the corn and barley flaking process. We will be adding a third steam flaking mill, however, we will not be adding an additional cooler cyclone. The third mill will be emptied into the existing cooling systems. Thus, no additional air discharge will be realized from the grain processing process. Additional finished product storage bins will be placed on each end of the existing storage facility. This will not effect the rate of loading, or add any air emission points.

To enable us to reduce our input freight costs, we will construct a new receiving system that enables us to unload 100 carloads of corn within fifteen hours. The system includes a receiving elevator leg that has the capacity to unload 40,000 bushels of grain within one hour. Section 3 of the permit, Process and Manufacturing Equipment has been submitted to address this equipment. Emissions were calculated using previously documented rates of 0.6 pounds per ton for the receiving system. The corn will be elevated and dropped into two 79' X 69' storage bins. The system to move the corn is a closed system. Page 55 of the rules for the control of air pollution in Idaho, items 85 and 104 would indicate these components of our system are exempted as insignificant activity. It should be noted that the completion of the rail car receiving system would reduce the amount of product received from our existing system by at least one-half.

We will be constructing a new facility that will be used to receive, store, blend, and load out vitamin / mineral supplements for the dairy industry. The major ingredients we will be handling include calcium carbonate, mono-dicalcium phosphate (bio-phos), salt, magnesium, and sodium carbonate. Initial sales volume will be two truckloads of product coming in and two truckloads of products leaving each day. Over the next few years, that will increase to 3 or 4 loads per day. The receiving and loading areas will be enclosed in a three-sided building to minimize any dust escaping into the atmosphere. The receiving process is a closed system. Section 3 of the permit, Process and manufacturing Equipment have been submitted for the receiving and load out processes. The receiving system particulates were calculated using 0.6 pounds per ton and load out emissions were calculated using 0.3 pounds per ton.

In summary, we will be expanding our current facility to include additional process capacity with no additional discharge points, an efficient railroad car receiving system, replacing half the capacity of the existing system, and a new process that is totally enclosed.

Attachments:

- Application to Construct an Air Pollution Emitting Facility Permit dated June 4, 1999
- Section 2: Fuel Burning Equipment
  - Parker Boiler supporting information
  - Natural Gas supporting information
- Section 3: Process and Manufacturing Equipment for the Unit Car Receiving System
- Section 3: Process and Manufacturing Equipment for the Vitamin / Mineral Receiving System
- Section 3: Process and Manufacturing Equipment for the Vitamin / Mineral Load Out System
- A site map with the new construction incorporated in it.
- A copy of our original Application to Construct an Air Pollution Emitting Facility permit dated August 18, 1995
- A copy of the Division of Environmental Quality's response to our application dated November 17, 1995

STATE OF IDAHO
DEPARTMENT OF HEALTH AND WELFARE
DIVISION OF ENVIRONMENTAL QUALITY

APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

(IDAPA 16.01.01.200-.225)

SECTION 1: GENERAL INFORMATION

1. COMPANY AND DIVISION NAME	Land O'Lakes Feed Division		
2. MAILING ADDRESS:	1711 So. 2300 E	COUNTY Gooding	NUMBER OF FULL-TIME EMPLOYEES 6
3. CITY Gooding	STATE Id.	ZIP CODE 83330	TELEPHONE NUMBER 208-934-5277
4. PERSON TO CONTACT	Steve Bohn	TITLE	Plant Operations Manager 503-288-7188
5. EXACT PLANT LOCATION *(IDENTIFY LOCALITY, AND INCLUDE UTM COORDINATES IF KNOWN)*	Section 35, Township 5 south, Range 15 east		
6. GENERAL NATURE OF BUSINESS AND KINDS OF PRODUCTS	Animal Feed Production: Steam flaking of corn and barley, grain storage, dairy cow vitamin and mineral supplements blending.		

7. REASON FOR APPLICATION

- ☐ permit to construct a new facility
- ☐ permit to modify an existing source
  permit number _____
- ☒ permit to construct a new source at an existing facility
- ☐ change of owner or location
  permit number _____
  current owner _____

8. LIST ALL FACILITIES WITHIN THE STATE THAT ARE UNDER YOUR CONTROL OR UNDER COMMON CONTROL AND HAVE EMISSIONS TO THE AIR. IF NONE, SO STATE.

NAME	LOCATION
Land O'Lakes	Gooding, Idaho
Land O'Lakes	Twin Falls, Idaho
Land O'Lakes	Caldwell, Idaho

9. ESTIMATED CONSTRUCTION START DATE July 1, 1999	ESTIMATED COMPLETION DATE February 28, 2000
10. NAME AND TITLE OF OWNER OR RESPONSIBLE OFFICIAL	Steve Bohn, Plant Operations Manager

11. In accordance with IDAPA 16.01.01.123 (Rules for the Control of Air Pollution in Idaho), I Steve Bohn, certify based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

SIGNATURE Steve Bohn DATE 4 June 99

STATE OF IDAHO

APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 2: FUEL-BURNING EQUIPMENT *(complete a separate page for each unit)*

1. APPLICANT'S REFERENCE NUMBER Boiler No. 3

2. EQUIPMENT MANUFACTURER AND MODEL NUMBER	3. RATED HEAT INPUT CAPACITY	4. BURNER UNIT TYPE (use code)	5. HEAT USAGE
Parker 115	4,830,000	10	% process heating 100% process % space

6 FUEL DATA

	Primary	Secondary
fuel type (use code)	1	
percent sulfur	.007'	
percent ash	None	
percent nitrogen	0.723	
percent carbon	0.347	
percent hydrogen	None	
percent moisture	<148 ppm	
heat content	1049 BTU/cf	

(percent by weight or volume)

7. FUEL CONSUMPTION

	Primary	Secondary
Maximum amount burned/hour	48 therms	
Normal amount burned/year	83,000 therms	

Fly ash reinjection? ___ yes _X_ no ___ n.a.

8. OPERATING SCHEDULE

Hours per day	24
Days per week	5
Weeks per year	52

9. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
type		
manufacturer		
model number		
% efficiency		

MANUFACTURER GUARANTEED_____ yes _____ no

(Include guarantee)

for wet scrubbers:

water flow _____ gpm

pressure drop_____ inches of water

for baghouse:

air/cloth ratio _____

pressure drop _____ inches of water

10. STACK OR EXHAUST DATA

Stack ID	22"
Height	14 ft
Exit diameter	22" ft
Exit gas volume	2415 acfm
Exit gas temperature	400 F

(Include a separate page for each stack if multiple stacks or vents are used)

11. CRITERIA POLLUTANT ESTIMATED EMISSIONS

Particulates	.05	lb/hr	tons/yr	Nitrogen oxides	.58	lb/hr	tons/yr
Sulfur dioxide	NIL	lb/hr	tons/yr	Volatile organic compounds	NIL	lb/hr	tons/yr
Carbon monoxide	.67	lb/hr	tons/yr				

(Include calculations and assumptions)

FUEL CODES

1. Natural gas
2. Oil *(specify ASTM grade number)*
3. Wood *(specify chips, bark, shavings sander dust)*
4. Coal *(specify bituminous, antracite, lignite)*
5. Other *(specify)*

BURNER CODES

1. Spreader stoker
2. Chain or traveling grate
3. Hand fired
4. Cyclone furnace
5. Wet bottom *(pulverized coal)*
6. Dry bottom *(pulverized coal)*
7. Underfeed stoker
8. Tangentially fired
9. Horizontally fired
10. Other *(specify)* Atmospheric

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6930 BANDINI BLVD.
CITY OF COMMERCE,
LOS ANGELES, CALIF. 90040

4C

EMISSION DATA FOR ATMOSPHERIC NATURAL GAS FIRED PARKER BOILERS

The following is our approximation of the Emissions Levels from our Boilers. Emissions may vary, based on boiler and field conditions.

	PPM @ 3% O_2	
1. HC (Hydrocarbons)	70	= .0371 Lbs./ 1.0 Million BTU/HR
2. CO (Carbon Monoxide)	150	= .138 Lbs./1.0 Million BTU/HR
3. SO_2 (Sulfur Dioxide)	NIL	= NIL
4. NOx (Nitrous Oxides)	100	= .12 Lbs./1.0 Million BTU/HR
5. PM-15 (Particulate Matter)		< .01 Lbs./1.0 Million BTU/HR

By multiplying these levels by the BTU input in millions, you can calculate the Lbs/Hr. Emissions based on full firing of the subject boiler.

Contact Parker Boiler should you have any questions.

GED/jkh

FACSIMILE

NW Natural
220 NW 2ND AVENUE
PORTLAND, OR 97209
TEL 503.226.4211
www.nwnatural.com

Date: June 3, 1999

To: Steve Bond @ Land O' Lakes [Fax 503-286-7179]

From: Tom Amies @ NW Natural [Ph 503-226-4211, Ext 4729, Fax 503-220-2421]

Subject: Natural Gas Data

Dear Mr. Bond,

In response to your telephone request early this afternoon, here are the data for natural gas in your area of our system during 1998.

NOTE: MMCF = 1,000,000 cf and ppm_{wt} = parts per million by weight.

Ash content: None.
Nitrogen content: 0.723% by volume
Sulfur content: 0.007% by weight, as added odorant
Carbon dioxide content: 0.347% by volume
Hydrogen content: None
Moisture content: <7 lb H_2O/MMCF (<148 ppm_{wt})
Heating value: 1,049 BTU/cf
Total inerts: 1.07% by volume
Specific Gravity (air = 1.000): 0.587

Please call me if you have additional questions. Thanks for the opportunity to be of service.

Sincerely,

Tom Amies

Tom Amies
Chief Chemist

STATE OF IDAHO

APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 3: PROCESS AND MANUFACTURING EQUIPMENT *(complete a separate page for each distinct process or manufacturing operation)*

1. APPLICANT'S REFERENCE NUMBER Unit car receiving system	2. PROCESS OR OPERATION NAME unit car receiving elevator

3. MAXIMUM RATED INPUT CAPACITY *(tons/hour)**	4. NORMAL MAXIMUM FEED INPUT tons/hour	tons/year	5. NORMAL MAXIMUM PRODUCT OUTPUT tons/hour	tons/year
1000 ton/hr	1000	125000	100	150000

6. PROCESS EQUIPMENT

Type	Elevator leg
Manufacturer	Schlagel
Model Number	48148
Feed Material	corn

7. OPERATING SCHEDULE

Hours per day	15
Days per week	1
Weeks per year	14

8. STACK OR EXHAUST DATA

Stack ID		
Height		ft
Exit diameter		ft
Exit gas volume		acfm
Exit gas temperature		F

(Include a separate page for each stack if multiple stacks or vents are used)

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
Type		
Manufacturer		
Model Number		
% Efficiency		

MANUFACTURER GUARANTEED _____ Yes _____ no

(Include guarantee)

For wet scrubbers:

water flow _____ gpm

pressure drop _____ inches of water

For baghouses:

air/cloth ratio _____

pressure drop _____ inches of water

11. CRITERIA POLLUTANT ESTIMATED EMISSIONS

particulates	600	lb/hr	63	tons/yr
sulfur dioxide		lb/hr		tons/yr
carbon monoxide		lb/hr		tons/yr
nitrogen oxides		lb/hr		tons/yr
volatile organic compounds		lb/hr		tons/yr

(Include calculations and assumptions)

9. TOXIC AIR POLLUTANT ESTIMATED EMISSIONS

(Include calculations and assumptions)

Pollutant	Uncontrolled Emissions		Controlled Emissions	
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr

**If units other than tons, please specify.*

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 3: PROCESS AND MANUFACTURING EQUIPMENT *(complete a separate page for each distinct process or manufacturing operation)*

1. APPLICANT'S REFERENCE NUMBER	2. PROCESS OR OPERATION NAME
Vitamin / mineral receiving system	Mineral receiving elevator

3. MAXIMUM RATED INPUT CAPACITY *(tons/hour)**	4. NORMAL MAXIMUM FEED INPUT		5. NORMAL MAXIMUM PRODUCT OUTPUT	
	tons/hour	tons/year	tons/hour	tons/year
125 ton/hr	125	24000	24	72000

6. PROCESS EQUIPMENT

Type	Elevator leg
Manufacturer	Schlagel
Model Number	30117
Feed Material	Calcium, phosphorous, other.

7. OPERATING SCHEDULE

Hours per day	3
Days per week	5
Weeks per year	52

8. STACK OR EXHAUST DATA

Stack ID	
Height	ft
Exit diameter	ft
Exit gas volume	acfm
Exit gas temperature	F

(Include a separate page for each stack if multiple stacks or vents are used)

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
Type		
Manufacturer		
Model Number		
% Efficiency		

MANUFACTURER GUARANTEED_____ Yes _____ no
(Include guarantee)

For wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

For baghouses:
air/cloth ratio _____
pressure drop _____ inches of water

11. CRITERIA POLLUTANT ESTIMATED EMISSIONS

particulates	75	lb/hr	12	tons/yr
sulfur dioxide		lb/hr		tons/yr
carbon monoxide		lb/hr		tons/yr
nitrogen oxides		lb/hr		tons/yr
volatile organic compounds		lb/hr		tons/yr

(Include calculations and assumptions)

9. TOXIC AIR POLLUTANT ESTIMATED EMISSIONS

(Include calculations and assumptions)

Pollutant	Uncontrolled Emissions		Controlled Emissions	
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr

**If units other than tons, please specify.*

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 3: PROCESS AND MANUFACTURING EQUIPMENT *(complete a separate page for each distinct process or manufacturing operation)*

1. APPLICANT'S REFERENCE NUMBER Vitamin / Mineral load out bins	2. PROCESS OR OPERATION NAME load out bins

3. MAXIMUM RATED INPUT CAPACITY *(tons/hour)**	4. NORMAL MAXIMUM FEED INPUT tons/hour	tons/year	5. NORMAL MAXIMUM PRODUCT OUTPUT tons/hour	tons/year
150 ton/hr	150	24000	150	72000

6. PROCESS EQUIPMENT

Type _____
Manufacturer _____
Model Number _____
Feed Material _____

7. OPERATING SCHEDULE

Hours per day 8
Days per week 5
Weeks per year 52

8. STACK OR EXHAUST DATA

Stack ID _____
Height _____ ft
Exit diameter _____ ft
Exit gas volume _____ acfm
Exit gas temperature _____ F

(Include a separate page for each stack if multiple stacks or vents are used)

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
Type		
Manufacturer		
Model Number		
% Efficiency		

MANUFACTURER GUARANTEED _____ Yes _____ no
(Include guarantee)

For wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

For baghouses:
air/cloth ratio _____
pressure drop _____ inches of water

11. CRITERIA POLLUTANT ESTIMATED EMISSIONS

particulates	45	lb/hr	6	tons/yr
sulfur dioxide		lb/hr		tons/yr
carbon monoxide		lb/hr		tons/yr
nitrogen oxides		lb/hr		tons/yr
volatile organic compounds		lb/hr		tons/yr

(Include calculations and assumptions)

9. TOXIC AIR POLLUTANT ESTIMATED EMISSIONS

(Include calculations and assumptions)

Pollutant	Uncontrolled Emissions		Controlled Emissions	
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr
	lb/hr	tons/yr	lb/hr	tons/yr

**If units other than tons, please specify.*

Land O'Lakes, Inc.
WESTERN FEED DIVISION
15840 North Simmons Road, Portland, Oregon 97203 (503) 286-6354 FAX: (503) 286-7179

August 18, 1995

Idaho Department of Health and Welfare
Division of Environmental Quality
1410 N. Hilton
Boise, ID 83606-1255

Attention: Martin Bauer, Bureau Chief

Dear Mr. Bauer:

In this packet you will find three copies of our application for a permit to construct an air pollution emitting facility. I would also request you assign Mr. Bill Rogers to our application process. I have met with Mr. Rogers on this matter and believe he has some understanding as to the uniqueness of the facility we are building. My visit with him was helpful to me and I would prefer to continue this relationship while we work through the permit process.

Should there be any questions concerning this application, please contact me at (503) 286-6342.

Sincerely,

Dennis Rose
Regulatory Compliance Manager

cc: Jerry Booren
Bruce Becker

STATE OF IDAHO
APPLICATION TO CONSTRUCT A
AIR POLLUTION EMITTING FACILITY

SECTION 1: GENERAL INFORMATION

FOR OFFICE USE ONLY		
PERMIT NUMBER ___ - ___ - ___ - ___		
DATE RECEIVED		REVIEWER
AQCR	COUNTY	PLANT I.D.
SIC	PLANT ELEVATION ABOVE MSL (ft)	
ZONE	UTM COORDINATE (km)	
NON-ATTAINMENT AREA ☐ PSD APPLICABLE ☐		NSPS ☐ NESHAPS ☐

1. COMPANY AND DIVISION NAME

LAND O' LAKES, INC., WESTERN FEED DIVISION

2. ADDRESS		COUNTY	NUMBER OF FULL-TIME EMPLOYEES
1711 SOUTH 2300 EAST		GOODING	5
3. CITY	STATE	ZIP CODE	PROPERTY AREA AT SITE (ACREAGE)
GOODING	IDAHO	83330	38.675
4. PERSON TO CONTACT		TITLE	TELEPHONE NUMBER
TONY BRAND		PRODUCTION MANAGER	(208) 733-4583

5. EXACT PLANT LOCATION (IDENTIFY LOCALITY)

LATTITUDE 42°.9509 LONGITUDE 114°.6339

6. GENERAL NATURE OF BUSINESS AND KINDS OF PRODUCTS

ANIMAL FEED PROCESS AND ANIMAL FEED COMMODITIES TRANSLOAD

7. REASON FOR APPLICATION

- [X] permit to construct a new facility
- [ ] permit to modify an existing source
- [ ] permit to construct a new source at an existing facility
- [ ] existing facility registration
- [ ] registration update
- [ ] change of owner or location
- [ ] permit to operate

8. LIST ALL FACILITIES WITHIN THE STATE THAT ARE UNDER YOUR CONTROL OR UNDER COMMON CONTROL AND HAVE EMISSIONS TO THE AIR. IF NONE, SO STATE.

NAME	LOCATION
LAND O' LAKES, INC	223 MAIN STREET CALDWELL, ID 83606
LAND O' LAKES, INC	2407 WARRAN AVENUE TWIN FALLS, ID 83303

9. ESTIMATED CONSTRUCTION START DATE	ESTIMATED COMPLETION DATE
OCTOBER 1995	DECEMBER 1995

10. NAME AND TITLE OF OWNER OR RESPONSIBLE OFFICIAL

JERRY BOOREN, VICE PRESIDENT, WESTERN FEED DIVISION

11. In accordance with IDAPA 16.01.01123 (Rules for the Control of Air Pollution in Idaho), I, JERRY BOOREN certify based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

SIGNATURE Jerry Booren DATE August 21, 1995

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 2: FUEL BURNING EQUIPMENT (complete a separate page for each unit)

1. REFERENCE NUMBER (for applicant's use)
BOILER #1

BOILER EXEMPT PER IDAPA 16.01.01.223.03.C

2. EQUIPMENT MANUFACTURER AND MODEL NUMBER	3. RATED HEAT INPUT CAPACITY	4. BURNER UNIT TYPE (use code)	5. HEAT USAGE % process	% space heating
PARKER 150 HORSE, HIGH EFFICENCY 1991-SN-40084				

6. FUEL DATA

	Primary	Secondary
fuel type (use code)	1	
percent sulfur		
percent ash		
percent nitrogen		
percent carbon		
percent hydrogen		
percent moisture		
heat content		

(In units of Btu/wt or volume)

7. FUEL CONSUMPTION

	Primary	Secondary
Maximum amount burned/hour		
Normal amount burned/year		

Fly ash reinjection? ___ yes ___ no ___ n.a.

8. FUEL CONSUMPTION PER QUARTER AS PERCENTAGE OF ANNUAL

January – March _____
April – June _____
July – September _____
October – December _____

9. OPERATING SCHEDULE

Hours per day _____
Days per week _____
Weeks per year _____

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
type		
manufacturer		
cost		
model number		
% efficiency		

MANUFACTURER GUARANTEED _____ yes _____ no

for wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

for baghouse:
air/cloth ratio _____

11. *STACK DATA

height _____ ft
exit diameter _____ ft
exit velocity _____ fpm
exit gas volume _____ acfm
exit gas temperature _____ F

12. ESTIMATED EMISSIONS
(at maximum design capacity)

Particulates	lb/hr	tons/yr
Sulfur dioxide	lb/hr	tons/yr
Carbon monoxide	lb/hr	tons/yr
Nitrogen oxides	lb/hr	tons/yr
Volatile organic compounds	lb/hr	tons/yr

FUEL CODES
1. Natural gas
2. Oil (specify ASTM grade number)
3. Wood (specify chips, bark, shavings sander dust)
4. Coal (specify bituminous, antracite, lignite)
5. Other (specify)

BURNER CODES
1. Spreader stoker
2. Chain or traveling grate
3. Hand fired
4. Cyclone furnace
5. Wet bottom (pulverized coal)
6. Dry bottom (pulverized coal)
7. Underfeed stoker
8. Tangentially fired
9. Horizintally fired
10. Other (specify)

*Indicate on a separate page if this is a common stack with another operation or process. Also so indicate if more than one stack is used with this fuel burning unit and supply stack parameters as listed in number 11.

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 2: FUEL BURNING EQUIPMENT (complete a separate page for each unit)

1. REFERENCE NUMBER (for applicant's use)
BOILER #2

BOILER EXEMPT PER IDAPA 16.01.01.223.03.c

2. EQUIPMENT MANUFACTURER AND MODEL NUMBER	3. RATED HEAT INPUT CAPACITY	4. BURNER UNIT TYPE (use code)	5. HEAT USAGE % process	% space heating
PARKER 150 HORSE, HIGH EFFICENCY 1974-SN-18834				

6. FUEL DATA

	Primary	Secondary
fuel type (use code)	1	
percent sulfur		
percent ash		
percent nitrogen		
percent carbon		
percent hydrogen		
percent moisture		
heat content (In units of Btu/wt or volume)		

7. FUEL CONSUMPTION

	Primary	Secondary
Maximum amount burned/hour		
Normal amount burned/year		

Fly ash reinjection? ___ yes ___ no ___ n.a.

8. FUEL CONSUMPTION PER QUARTER AS PERCENTAGE OF ANNUAL

January – March _____
April – June _____
July – September _____
October – December _____

9. OPERATING SCHEDULE

Hours per day _____
Days per week _____
Weeks per year _____

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
type		
manufacturer		
cost		
model number		
% efficiency		

MANUFACTURER GUARANTEED _____ yes _____ no

for wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

for baghouse:
air/cloth ratio _____

11. *STACK DATA

height _____ ft
exit diameter _____ ft
exit velocity _____ fpm
exit gas volume _____ acfm
exit gas temperature _____ F

12. ESTIMATED EMISSIONS (at maximum design capacity)

	lb/hr	tons/yr
Particulates		
Sulfur dioxide		
Carbon monoxide		
Nitrogen oxides		
Volatile organic compounds		

FUEL CODES
1. Natural gas
2. Oil (specify ASTM grade number)
3. Wood (specify chips, bark, shavings sander dust)
4. Coal (specify bituminous, antracite, lignite)
5. Other (specify)

BURNER CODES
1. Spreader stoker
2. Chain or traveling grate
3. Hand fired
4. Cyclone furnace
5. Wet bottom (pulverized coal)
6. Dry bottom (pulverized coal)
7. Underfeed stoker
8. Tangentially fired
9. Horizintally fired
10. Other (specify)

*Indicate on a separate page if this is a common stack with another operation or process. Also so indicate if more than one stack is used with this fuel burning unit and supply stack parameters as listed in number 11.

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 3: PROCESS AND MANUFACTURING OPERATIONS (complete a separate page for each distinct process or manufacturing operation)

1. UNIQUE REFERENCE NUMBER (to be assigned by applicant): RECEIVING SYSTEM

2. PROCESS OR OPERATION NAME: BULK RECEIVING

3. MAXIMUM RATED INPUT CAPACITY (tons/hour)*: 100

4. NORMAL FEED INPUT: tons/hour 90 tons/year

5. NORMAL PRODUCT OUTPUT: tons/hour 90 tons/year

6. THROUGHPUT PER QUARTER AS PERCENT OF ANNUAL

January – March	25%
April – June	25%
July – September	25%
October – December	25%

7. OPERATING SCHEDULE

Hours per day	16
Days per week	5
Weeks per year	52

NOTE: ACTIS 600 TONS ÷ 90 TPH = 6.7 HR/D

8. STACK OR EXHAUST DATA

Height	NONE	ft
Exit diameter		ft
Exit velocity		fpm
Exit gas volume		acfm
Exit gas temperature		F

(Include a separate page for each stack if multiple stacks or vents are used)

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
Type	NONE	
Manufacturer		
Cost		
Model Number		
% Efficiency		

MANUFACTURER GUARANTEED ____ yes ____ no

For wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

For baghouses:
air/cloth ratio _____

11. ESTIMATED EMISSIONS

particulates	60	lb/hr	30	tons/yr
sulfur dioxide		lb/hr		tons/yr
carbon monoxide		lb/hr		tons/yr
nitrogen oxides		lb/hr		tons/yr
volatile organic compounds		lb/hr		tons/yr

9. STORAGE PILE(S) DATA (If more than one storage pile is on site, please attach a separate sheet detailing each storage pile)

Volume		cubic yards	
Height		ft	
Width		ft	
length		ft	
Type of material			
Mesh or minus size			

Daily throughput _____ tons per day

How is material handled (i.e. front end loader, covered conveyor belts, etc.)?

*If units other than tons, please specify.

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 3: PROCESS AND MANUFACTURING OPERATIONS (complete a separate page for each distinct process or manufacturing operation)

1. UNIQUE REFERENCE NUMBER (to be assigned by applicant)
ROLLED GRAIN SYSTEM - #1

2. PROCESS OR OPERATION NAME
GRAIN FLAKING

3. MAXIMUM RATED INPUT CAPACITY (tons/hour)*
20

4. NORMAL FEED INPUT
tons/hour: 15
tons/year: 37,500

5. NORMAL PRODUCT OUTPUT
tons/hour: 15
tons/year: 37,500

6. THROUGHPUT PER QUARTER AS PERCENT OF ANNUAL
January - March: 25%
April - June: 25%
July - September: 25%
October - December: 25%

7. OPERATING SCHEDULE
Hours per day: 16
Days per week: 5
Weeks per year: 52

8. STACK OR EXHAUST DATA
Height: 31 ft
Exit diameter: 8.1 SQ. ft
Exit velocity: 1736 fpm
Exit gas volume: 14,000 acfm
Exit gas temperature: 120° F

(Include a separate page for each stack if multiple stacks or vents are used)

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
Type	CYCLONE	
Manufacturer	TRI STATE METAL FAB	
Cost	$5,599.00	
Model Number	86	
% Efficiency	98 AT 10 MICRONS OR LARGER	

MANUFACTURER GUARANTEED ___ yes X no

For wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

For baghouses:
air/cloth ratio _____

11. ESTIMATED EMISSIONS

particulates	3	lb/hr	3.7	tons/yr
sulfur dioxide		lb/hr		tons/yr
carbon monoxide		lb/hr		tons/yr
nitrogen oxides		lb/hr		tons/yr
volatile organic compounds		lb/hr		tons/yr

9. STORAGE PILE(S) DATA (If more than one storage pile is on site, please attach a separate sheet detailing each storage pile)

Volume _____ cubic yards
Height _____ ft
Width _____ ft
length _____ ft
Type of material _____
Mesh or minus size _____

Daily throughput _____ tons per day

How is material handled (i.e. front end loader, covered conveyor belts, etc.)?

*If units other than tons, please specify.

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 3: PROCESS AND MANUFACTURING OPERATIONS (complete a separate page for each distinct process or manufacturing operation)

1. UNIQUE REFERENCE NUMBER (to be assigned by applicant): ROLLED GRAIN SYSTEM #2

2. PROCESS OR OPERATION NAME: GRAIN FLAKING

3. MAXIMUM RATED INPUT CAPACITY (tons/hour)*	4. NORMAL FEED INPUT tons/hour	tons/year	5. NORMAL PRODUCT OUTPUT tons/hour	tons/year
20	15	37,500	15	37,500

6. THROUGHPUT PER QUARTER AS PERCENT OF ANNUAL

January – March	25%
April – June	25%
July – September	25%
October – December	25%

7. OPERATING SCHEDULE

Hours per day	16
Days per week	5
Weeks per year	52

8. STACK OR EXHAUST DATA

Height	29	ft
Exit diameter	9.53 SQ.	ft
Exit velocity	1457	fpm
Exit gas volume	14,000	acfm
Exit gas temperature	120°	F

(Include a separate page for each stack if multiple stacks or vents are used)

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
Type	CYCLONE	
Manufacturer	DONALDSON CO.	
Cost	$15,304.00	
Model Number	100	
% Efficiency	91% AT 10 MICRONS AND LARGER	

MANUFACTURER GUARANTEED ____ yes ____ no

For wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

For baghouses:
air/cloth ratio _____

11. ESTIMATED EMISSIONS

particulates	3	lb/hr	3.7	tons/yr
sulfur dioxide		lb/hr		tons/yr
carbon monoxide		lb/hr		tons/yr
nitrogen oxides		lb/hr		tons/yr
volatile organic compounds		lb/hr		tons/yr

9. STORAGE PILE(S) DATA (If more than one storage pile is on site, please attach a separate sheet detailing each storage pile)

Volume	_____ cubic yards
Height	_____ ft
Width	_____ ft
length	_____ ft
Type of material	_____
Mesh or minus size	_____

Daily throughput _____ tons per day

How is material handled (i.e. front end loader, covered conveyor belts, etc.)?
_____
_____
_____

*If units other than tons, please specify.

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 3: PROCESS AND MANUFACTURING OPERATIONS (complete a separate page for each distinct process or manufacturing operation)

1. UNIQUE REFERENCE NUMBER (to be assigned by applicant): WHOLE COTTONSEED DOCK

2. PROCESS OR OPERATION NAME: WHOLE COTTONSEED TRANSLOAD

3. MAXIMUM RATED INPUT CAPACITY (tons/hour)*	4. NORMAL FEED INPUT tons/hour	tons/year	5. NORMAL PRODUCT OUTPUT tons/hour	tons/year
55	55	50,000	55	50,000

6. THROUGHPUT PER QUARTER AS PERCENT OF ANNUAL

January – March	25%
April – June	25%
July – September	25%
October – December	25%

7. OPERATING SCHEDULE

Hours per day	16
Days per week	5
Weeks per year	52

8. STACK OR EXHAUST DATA

Height	NONE	ft
Exit diameter		ft
Exit velocity		fpm
Exit gas volume		acfm
Exit gas temperature		F

(Include a separate page for each stack if multiple stacks or vents are used)

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
Type	NONE	
Manufacturer		
Cost		
Model Number		
% Efficiency		

MANUFACTURER GUARANTEED ____ yes ____ no

For wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

For baghouses:
air/cloth ratio _____

11. ESTIMATED EMISSIONS

particulates	33	lb/hr	15	tons/yr
sulfur dioxide		lb/hr		tons/yr
carbon monoxide		lb/hr		tons/yr
nitrogen oxides		lb/hr		tons/yr
volatile organic compounds		lb/hr		tons/yr

9. STORAGE PILE(S) DATA (If more than one storage pile is on site, please attach a separate sheet detailing each storage pile)

Volume	1100	cubic yards
Height	6	ft
Width	50	ft
length	100	ft
Type of material	WHOLE COTTONSEED	
Mesh or minus size	3/4"	

Daily throughput 4 tons per day

How is material handled (i.e. front end loader, covered conveyor belts, etc.)?
FRONT END LOADER

*If units other than tons, please specify.

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 3: PROCESS AND MANUFACTURING OPERATIONS (complete a separate page for each distinct process or manufacturing operation)

1. UNIQUE REFERENCE NUMBER (to be assigned by applicant): LOAD OUT BINS

2. PROCESS OR OPERATION NAME: BULK TRUCK LOADING

3. MAXIMUM RATED INPUT CAPACITY (tons/hour)*	4. NORMAL FEED INPUT tons/hour	tons/year	5. NORMAL PRODUCT OUTPUT tons/hour	tons/year
150	30 TO 100	100,000	150	100,000

6. THROUGHPUT PER QUARTER AS PERCENT OF ANNUAL

January – March	25%
April – June	25%
July – September	25%
October – December	25%

7. OPERATING SCHEDULE

Hours per day	16
Days per week	5
Weeks per year	52

8. STACK OR EXHAUST DATA

Height	NONE	ft
Exit diameter		ft
Exit velocity		fpm
Exit gas volume		acfm
Exit gas temperature		F

(Include a separate page for each stack if multiple stacks or vents are used)

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
Type	NONE	
Manufacturer		
Cost		
Model Number		
% Efficiency		

MANUFACTURER GUARANTEED ____ yes ____ no

For wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

For baghouses:
air/cloth ratio _____

11. ESTIMATED EMISSIONS

particulates	45	lb/hr	15	tons/yr
sulfur dioxide		lb/hr		tons/yr
carbon monoxide		lb/hr		tons/yr
nitrogen oxides		lb/hr		tons/yr
volatile organic compounds		lb/hr		tons/yr

9. STORAGE PILE(S) DATA (If more than one storage pile is on site, please attach a separate sheet detailing each storage pile)

Volume		cubic yards	
Height		ft	
Width		ft	
length		ft	
Type of material			
Mesh or minus size			

Daily throughput _____ tons per day

How is material handled (i.e. front end loader, covered conveyor belts, etc.)?

*If units other than tons, please specify.

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 4: REFUSE DISPOSAL AND INCINERATION (complete a separate page for each unit)

1. UNIQUE REFERENCE NUMBER (to be assigned by applicant)
TRASH RECEPTICAL

2. TYPE OF WASTES	3. MAXIMUM AMOUNT DISPOSED PER DAY (pounds/day)	4. AMOUNT PER YEAR (Tons/year)	5. METHOD OF DISPOSAL (use codes below)
SOLID WASTE	154	20	6

6. TYPE OF INCINERATOR

_____ Single chamber
_____ Multiple chamber
_____ Flue feed incinerator
_____ Pathological incinerator
_____ Rotary chamber
_____ Conical burner:
_____ yes _____ no overfire
_____ yes _____ no underfire
_____ yes _____ no damper
_____ yes _____ no temperature recorder
_____ Modified (describe) _____
_____ Other (describe) _____

7. INCINERATOR DESCRIPTION

Manufacturer _____
Model number _____
Rated capacity _____ lbs/hour
Type waste _____ lbs/day
Quantity burned _____ Tons/yr
Is incinerator equipped with an afterburner? _____ yes _____

8. AUXILLIARY FUEL FOR INCINERATOR

Type of fuel _____
Amount per year _____
Heat content _____
Percent sulfur _____
Percent ash _____

9. OPERATING SCHEDULE

Hours/day _____
Days/week _____
Weeks/year _____

10. POLLUTION CONTROL EQUIPMENT

	Primary	Secondary
type		
manufacturer		
cost		
model number		
% efficiency		

MANUFACTURER GUARANTEED _____ yes _____ no

for wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

for baghouse:
air/cloth ratio _____

11. STACK DATA

height _____ ft
exit diameter _____ ft
exit velocity _____ fpm
exit gas volume _____ acfm
exit gas temperature _____ F

12. ESTIMATED EMISSIONS
(at maximum design capacity)

Particulates	_____	lb/hr	_____	tons/yr
Sulfur dioxide	_____	lb/hr	_____	tons/yr
Carbon monoxide	_____	lb/hr	_____	tons/yr
Nitrogen oxides	_____	lb/hr	_____	tons/yr
Volatile organic compounds	_____	lb/hr	_____	tons/yr

METHOD OF DISPOSAL CODES

1. Open burning
2. Lanfilled (no burning)
3. Burned in boiler or furnace
4. Conical burner (complete rest of form)
5. Incinerated (complete rest of form)
6. Hauled away by contract disposal
99. Other (specify) _____

STATE OF IDAHO
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SECTION 5: STORAGE, HANDLING AND USE OF LIQUID SOLVENTS AND OTHER VOLATILE COMPOUNDS

STORAGE TANKS

1. UNIQUE REFERENCE NUMBER (assigned by applicant)	2. TYPE OF STORAGE TANK (use code)	3. MATERIAL STORED IN TANK	4. TANK CAPACITY (gallons)	5. ANNUAL THROUGH-PUT (gal/year)	6. SOURCE OF TANK CONTENTS (use code)	7. METHOD OF VAPOR RECOVERY (use code)	8. ESTIMATED VAPOR RECOVERY EFFICIENCY (percent)	9. ESTIMATED EMISSIONS (Tons/yr)
NONE								

STORAGE TANK TYPE CODES (column 2)
1. Fixed roof
2. Floating roof (or internal cover)
3. Variable vapor space
4. Pressure tank
5. Underground–splash loading

SOURCE OF TANK CONTENTS (column 6)
1. Pipeline
2. Rail car
3. Tank truck
4. Ship, barge
5. Other (specify)

VAPOR RECOVERY SYSTEM CODES (column 7)
1. Incineration
2. Refrigerated liquid scrubber
3. Refigeration condensation
4. Carbon adsorption pack
5. Vapor return system
6. No recovery system

THROUGHPUT PER QUARTER AS PERCENT OF ANNUAL (for use in either section)

January–March _____
April–June _____
July–September _____
October–December _____

VAPOR PHASE DEGREASING OPERATIONS

1. TANK CAPACITY (gallons)	2. TANK SURFACE AREA (sq. ft.)	3. SPECIFIC NAME AND MANUFACTURER OF DEGREASING AGENT	4. ESTIMATED AIR EMISSIONS (gal/year)	5. STACK INFORMATION Diameter (ft)	height (ft)	Air flow (acfm)	6. TEMPER-ATURE OF TANK (F)	7. METHOD OF VAPOR RECOVERY (use code)
NONE								

STATE OF IDAHO
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SECTION 6: LOADING RACKS AND OIL-WATER SEPARATORS

LOADING RACKS

1. UNIQUE REFERENCE NUMBER (assigned by applicant)	2. NAME OF MATERIAL LOADING FROM RACK AND REID VAPOR PRESSURE (summer)	3. TYPE OF LOADING (use codes)	4. GALLONS LOADED PER YEAR	5. TYPE OF HATCH VAPOR CLOSURE ON LOADING ARMS (use codes)	6. METHOD OF VAPOR RECOVERY		7. VOLATILE ORGANIC LOSSES FROM LOADING OPERATIONS (Tons/yr)
					METHOD (use codes)	CONTROL EFF.	
NONE							

TYPE OF LOADING CODES (column 3)
1. Overhead loading – splash fill, normal service
2. Overhead loading – submerged fill, normal service
3. Bottom loading – normal service
4. Overhead loading – splash fill, balanced service
5. Overhead loading – submerged fill, balanced service
6. Bottom loading – balanced service

TYPE OF HATCH VAPOR CLOSURE ON LOADING ARM CODES (column 5)
1. Incineration
2. Greenwood
3. Soco
4. Chiksan
5. None – open to air
6. Other (describe)

METHOD OF VAPOR RECOVERY CODES (column 6)
1. Incineration
2. Refrigerated liquid scrubber
3. Vapor balance – return system
4. Vapor absorption system
5. Vapor compressor – condensor system
6. None – open to air
7. Other (describe)

THROUGHPUT PER QUARTER AS A % OF ANNUAL

January–March _____
April–June _____
July–September _____
October–December _____

OIL-WATER SEPARATORS

1. Is there an oil-water separator at this site? NONE
2. Amount of product recovered per year? _____
3. Type of enclosure (open, floating roof, sealed cover)? _____
4. Name of product(s) recovered? _____
5. Is the oil-water separator vented to any vapor recovery system at your site? _____

STATE OF IDAHO
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SECTION 7: HAZARDOUS/TOXIC MATERIALS (complete a separate page for each material)

1. UNIQUE REFERENCE NUMBER (assigned by applicant)	2. TYPE OF MATERIAL HANDLED OR EMITTED	3. PROCESS NAME/ DESCRIPTION (use separate sheets if necessary)	4. AMOUNT HANDLED OR PROCESSED (lb/hr) (Tons/yr)
NONE			

5. THROUGHPUT PER QUARTER AS PERCENTAGE OF ANNUAL

January – March _____
April – June _____
July – September _____
October – December _____

6. OPERATING SCHEDULE

Hours per day _____
Days per week _____
Weeks per year _____

7. ESTIMATED EMISSIONS

_____ lbs/hr
_____ Tons/yr

8. STACK DATA

height _____ ft
exit diameter _____ ft
exit velocity _____ fpm
exit gas volume _____ acfm
exit gas temperature _____ F

10. POLLUTION CONTROL EQUIPMENT

type _____
manufacturer _____
cost _____
model number _____
% efficiency _____

MANUFACTURER GUARANTEED _____ yes _____ no

for wet scrubbers:
water flow _____ gpm
pressure drop _____ inches of water

for baghouse:
air/cloth ratio _____

11. METHOD OF DISPOSAL OF WASTE MATERIALS

_____
_____
_____
_____
_____
_____
_____

9. METHOD TO CONTROL FUGITIVE EMISSIONS

_____
_____
_____
_____

STATE OF IDAHO
APPLICATION TO CONSTRUCT AN AIR POLLUTION EMITTING FACILITY

SECTION 8: MATERIAL TRANSPORT AND HANDLING

Describe the raw material and product transport and storage. Description should include transport equipment and a sketch of the site layout.

BELT CONVEYORS

Material conveyed: GRAIN PRODUCTS
Number of belts: 6
Amount conveyed: 100,000 Tons/yr at 12.5 % moisture
Number of transfer points: 25
Conveyors are: ___ open X enclosed ___ in a building
Transfer points are: ___ open X enclosed ___ in a building

PNEUMATIC CONVEYORS

Material conveyed: NONE
Amount conveyed: ___ Tons/yr at ___ % moisture
Primary separator: type ___ efficiency ___
Secondary separator: type ___ efficiency ___

STORAGE

Open piles
- Annual throughput: 1000 Tons/yr
- Capacity: UNKNOWN Tons
- Characteristic size: 5000 SQ FT, 50' X 100' X UNKNOWN (length by width by height)
- How loaded: REAR UNLOAD TRUCK at 50 Tons/hr
- How withdrawn: FRONT END LOADER at 50 Tons/hr

Silos
- Size: 2 AT 45780 FT^3
- Vent control: SCREENED
- How loaded: CONVEYOR-ELEVATOR-TURN HEAD-SPOUT at 100 Tons/hr
- How withdrawn: CONVEYOR at 50 Tons/hr

MATERIAL TRANSPORT

To plant
- Method of transport: RAILCARS AND TRUCKS
- Amount transported: 150,000 - 120,000 BY RAIL 30,000 BY TRUCK Tons/yr

From site
- Method of transport: TRUCK
- Amount transported: 150,000 Tons/yr

Land O' Lakes, Inc.
Western Feed Division

GOODING, ID PROJECT

Narrative for application to construct an air pollution emitting facility near Gooding, Idaho:

History:

Historically, our marketing strategy in Idaho, for rolled grains and feed commodities has been opportunistic. We have seized whatever business we have been able to with existing full line plants, one in Twin Falls and one in Caldwell, keeping investment in operations low. We now believe there is a sustainable growing business base in South Central Idaho that we can profitably serve with bulk feed commodities and rolled grains.

To do this, we must have the ability to provide a low cost source of rolled grains and bulk feed ingredients to this market. This is to accomplished through the construction of a bulk grain processing and transloading facility in South Central Idaho. Being consistent with being the low cost supplier of these products, we purchased property next to the Union Pacific mainline to assure ourselves of consistent supply of raw products for the future. This location is within thirty miles of eighty percent of the Magic Valley market potential. This combination facility, controls both in-bound and out-bound cost to place us in a very competitive position. As a feed processor, this facilities S.I.C. is 2048.

General Facility Lay Out:

We have purchased 38.67 acres of land adjacent to the Union Pacific Railroad on our north boundary and Road 2300 on our east boundary. (exhibit A) The rail switch onto our property will enter from the west and is indicated as A-1. Vehicle traffic will enter and exit our property off Road 2300 from the east, and is indicated as A-2. There will be two points of operation on the property, the first being whole cotton seed transloading located at A-3, and grain processing and commodity transloading at A-4. Our south property line boarders land owned by John Clarkson. The west property line is on county road 2250.

Emission Factors:

This facility's product mix and flow more closely resembles a country elevator rather than a feed mill. In reviewing 6.4.1 there is support to categorize this operation using

the total particulate emission factors for uncontrolled country grain elevators found in table 6.4-1. We, like country elevators deal mainly with whole grains as ingredients being received, where as a typical feed mill will be working with a much larger spectrum of ingredients to include many that are ground in form. This difference in the over all make-up of the ingredients received makes us much more like the country elevator in terms of emission than a typical feed mill. Even though an operating schedule of sixteen hour a day is shown, emission is calculated on a tonnage basis because that is our limiting basis. We cannot operate beyond what our sales tons are. The sixteen hours per day reflects all activities our manpower must deal with.
For the calculations of particulate discharge, I used .6 pounds per ton for receiving and .3 pounds per ton for shipping. This gives us emission at projected tonnage of 67 tons per year. The plants emission would be 26.4 tons annually at the start-up tonnages.

Processes:

Whole Cottonseed Transloading:

Whole cottonseed comes into this market place in boxcars. Current Magic Valley market usage of this product is approximately 100,000 tons annually. Our current market share is about 18,000 tons and our projection is to supply 50,000 tons through this facility to the farm within five years.

The whole cottonseed is removed from the box cars with a front end loader. The loader dumps the whole cottonseed into a hopper built into an unload platform. This hopper then through a choke, gravity flow, places the whole cottonseed on an open conveyor, which conveys and elevates the whole cottonseed to a point where it fills the rear unloading trailers. It takes approximately 75 scoops to fill a 25 ton truck load. I have used the emission factor for receiving only for this product, because the receiving process ends with the whole cottonseed being loaded on the truck. The dust generated from this operation as uncontrolled receiving, is listed in the total particulate emission factors for uncontrolled grain processing operations gives us the maximum potential to emit from this operation at 15 tons annually for the 50,000 tons transload. Current levels of sales and operation start-up, would give us 5.4 tons annual dust emission from this activity.

Our current plans indicate we may store this product from time to time on a concrete slab to help even out in-bound and out-bound flow. The expected tons to be handled

in this manner is to be no more than two or three car loads at a time and maybe a total of 1,000 tons a year. It is not economically to our advantage to double handle this product; therefore, we will limit this type of activity as much as possible. The concrete slab provided for this operation is 5,000 square feet. The maximum height we would pile this product is six feet.

Grain Processing And Commodity Transloading:

In-bound product will come to the plant on both rail hopper cars and trucks. It is estimated that 80 % of the product received will be of rail origin with 20 % on in-bound trucks. Sixty-five percent of these bulk products will be either corn or barley which will be further processed, and 35 % of the tons will be other feed commodities transloaded through load-out bins, onto trucks and delivered to the farm.

The processes at this part of the operation are: (a) receiving, (b) grain flaking, and (c) load out. All of the in bound tonnage goes through both the receiving and bulk load out functions. This is estimated to reach 100,000 tons a year. Current sales volume for start up is projected to be 40,000 tons a year. The rolled grain volume is estimated to process 75,000 tons a year, and at start up to be 30,000 tons a year. Using the emissions factors for a country elevator, the receiving potential to emit is .6 pounds per ton for receiving, at 100,000 tons this would be 30 tons annually. The potential to emit factor for shipping is .3 pounds per ton for 100,000 tons for a total of 15 tons and the flaking process factor is .2 pounds per ton for 75,000 tons for 7.5 tons emission. These tonnages gives us a maximum potential to emit for the part of the operation of 52.5 tons of particulate. At start up tonnage, our emissions would be 21 tons a year. Both of the above totals are reflected as uncontrolled emissions.

(a) Receiving: This location is set up to receive either rail hopper cars or truck loads of bulk commodities with a single system. (Diagram B - red) Either rail hoppers or bulk trucks will be spotted over shallow, in ground hoppers. The receiving conveyor pulls the product from the bottom of these hoppers to a receiving elevator. The gates on the rail cars or trucks will be opened and the product will flow out of the cars or trucks, flooding the pit with product, to a choke. By choke we mean the material flows out faster than the conveyor takes away product. This creates a seal of product and prevents wind from carrying product away from a free falling stream of product. The choke method of controlling dust is a common used practice in the feed manufacturing industry. It

is anticipated we will effectively control 80% of the potential dust because there is no free falling material when the choke is in place. (Appendix I) The conveyor moves the product to an elevator which elevates the product and then discharges through a turn head and spouts into holding bins. The two 45,780 ft^3 grain tanks (B-1 and B-2 - red) are vented to the outside. The six commodity bins over load out (B-3,4,5,6,7,8) are vented between each other to equalize the air pressure created from filling the bins with product. These bins are within a complex that contains 8 - 5,000 ft^3 bins and 2 - 2,500 ft^3 bins. The conveyor, elevator, turn head, and spouting, are all closed systems. Page 55 of the rules for the control of air pollution in Idaho, items 85 and 104 would indicate, these components of our system are exempted as insignificant activity.

(b) Grain Flaking: In general terms grain flaking is taking the whole kernel of grain, conditioning it with steam, running it through the roller mill, cooling and moving the cooled product to storage. More specifically this operation will pull product from the storage bins (B-1 & 2 - green) through a conveyor to an elevator leg. This leg will discharge the grain to a scalper screen which will remove material larger than the grain. This screen is an 81 series rotex and is a closed unit. The material removed will go to solid waste disposal. The screened grain proceeds to another elevator which feeds the conditioning bins over the roller mills. These systems are all interlocked so that the supply of grain to the conditioners match the rollermills capacity. This is done by tell-level systems that turn the systems on and off as needed. We have two roller mill systems where each will flake grain at a 15 to 20 ton per hour rate. In the conditioning bins, steam is applied to the grain raising the moisture by about 6 % and bringing the temperature to about 212°f. At this point, the grain is fed into the roller mills via pin feeders. The rolls consist of two rolls with one turning clockwise and the other counter clockwise, flattening the grain as it passes through the nip point of the roll adjustment. At this point the flaked grain drops into counter flow coolers. The coolers are designed to pull air through a bed of product, removing moisture and heat. The coolers will accomplish this with air flow up to 14,000 cfm for each cooler. This air is moved through two cyclones which settle out any particulate in the air stream and then discharges to atmosphere the air flow generated by the fans. These

cyclones are designed to operated at 98% and 91% efficiency. From the coolers, the flaked grain is then moved by conveyor to an elevator which elevates the flaked grain. The discharge from the elevator goes through a turn head and spouts into holding bins over the truck scale. (B-9,10,11,12 - blue) These bins have vents between each other to equalize air pressure as product flows into the bins. As in the receiving process, all bins, conveyors, elevators, turn heads, and spouts are enclosed and should be exempt as insignificant pursuant to the listings on page 55 of the rules for the control of air pollution in Idaho. The two real points of discharge from this operation are the two cyclones for the rolled grain system (B-13,14 - blue)

Generation of steam for the conditioning part of this process will be from 2 - 150 horse (B-15,16 - lavender), natural gas fired boilers. As indicated in IDAPA 16.01.01.223.03.C, these boilers are exempt.

(c) Loadout: The loadout function at this facility is quite simple. All of the bins (B-2 through B-12) are located over the truck scale. The material will gravity flow into the tops of the trailers through (18 inch) loading spouts. The materials will be released from the bins through air operated slide gates. All of the product leaving the facility will be moved by trucks, direct to the farms in the market area.

This facility is designed to minimize the handling of product and potential exposure of product to fugitive discharge of particulate into the air. What we are doing with this facility, will tend to consolidate into one controlled location, activity which is occurring at many small locations today, including portable rolling operations. This facility is not designed to be a complete feed, feed mill operation. We are concentrating on two very specific tasks which will help Land O' Lakes offer a broader scope of product and service to our customer in the most economic way possible.

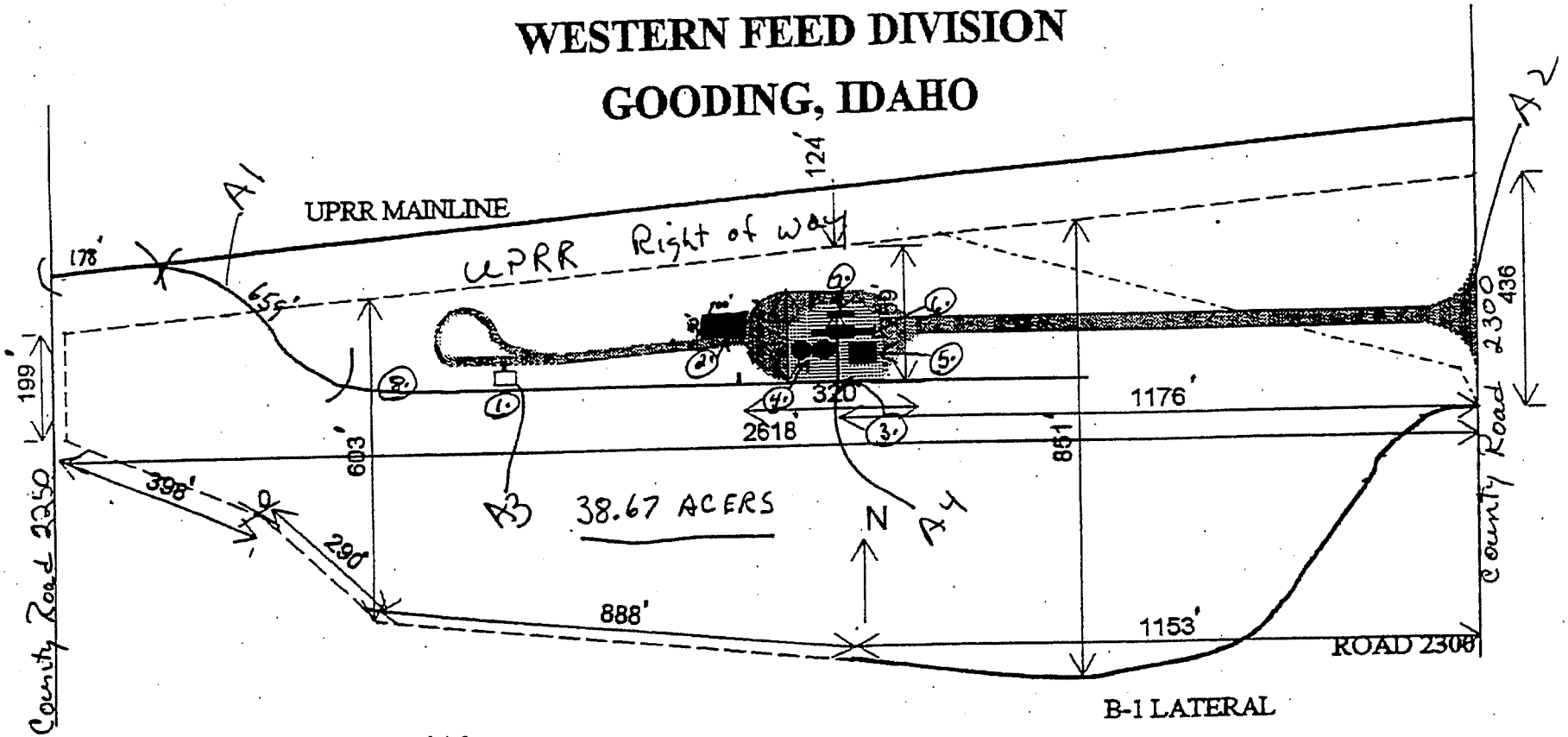
To recap, the projected tonnage through this plant would indicate that sometime in the future, emission from the factors for uncontrolled grain processing operations in the aggregate will total 67 ton per year. This will occur when we reach 150,000 total tons through the facility. At start-up, current tonnages projected for this facility is 58,000 and would give us emissions of 26.4 tons per year. All of the emissions from this facility will be particulate grain dust.

Inclusions:

A.	Exhibit A	-	Over all site map.
B.	Exhibit B	-	Processing Lay out - color coded.
C.	Exhibit C	-	Cyclone specifications and scale drawings.
D.	Exhibit D	-	Roller mill specifications and scale drawings.
E.	Exhibit E	-	Cooler specifications and scale drawings.
F.	Exhibit F	-	Calculation for emissions.
G.	Exhibit G	-	Topographical map for property.
H.	Exhibit H	-	Map showing neighboring ownership and facilities.
I.	Exhibit I	-	Text from Feed Manufacturing Technology on dust control by choke method.

Exhibit A

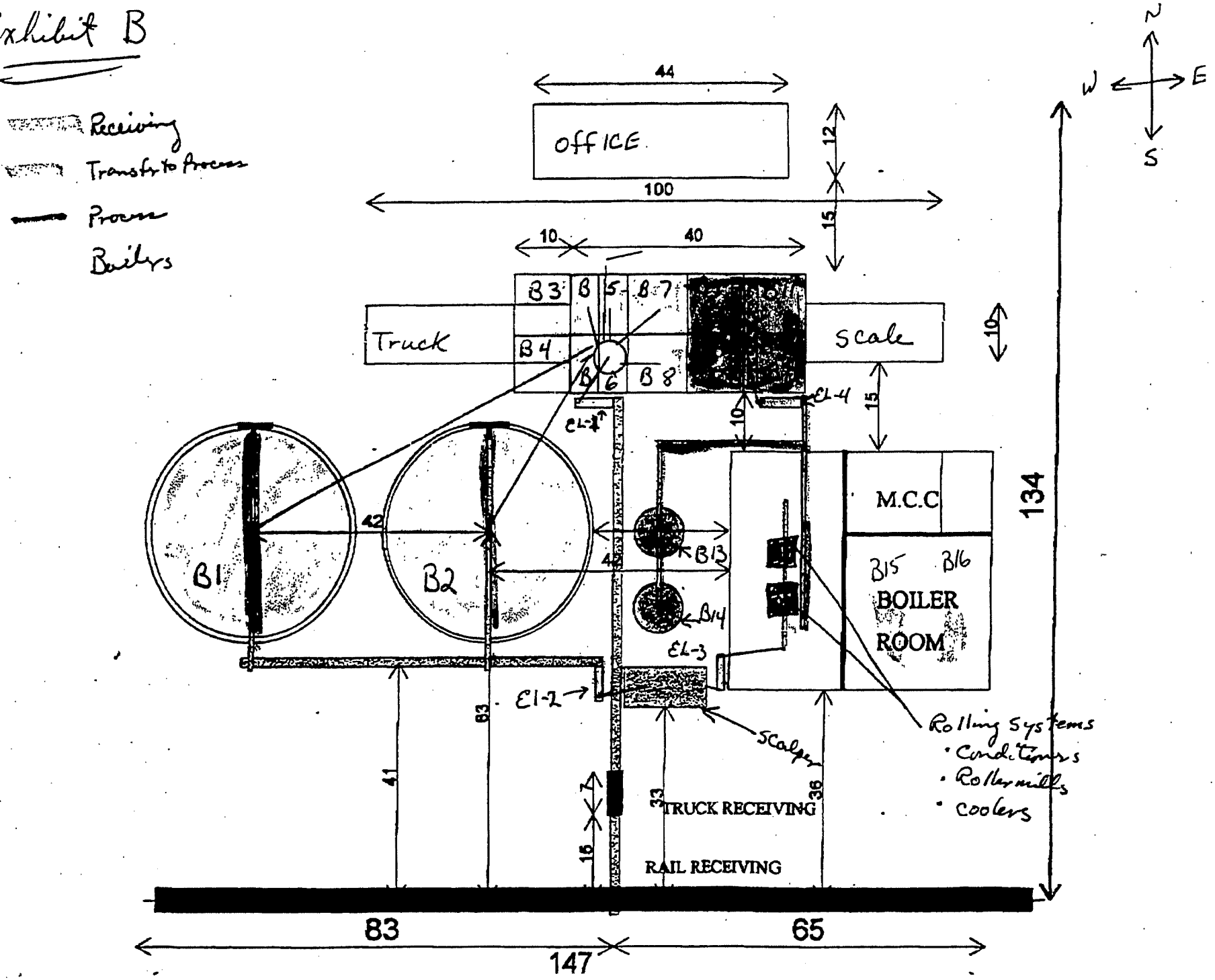
LAND O LAKES, INC.
WESTERN FEED DIVISION
GOODING, IDAHO



1. Whole Cotton Transload platform
2. Whole cotton storage slab (5000 sq')
3. Rail and Truck commodity Receiving
4. Grain storage Bins
5. Process Bld. for Rolls, coolers, Boilers, Elect. Room.
6. Truck Scale and 10 load out Bins
7. Office
8. Spur Track

John Clarkson Farm

Exhibit B


Receiving
Transfer to Process
Process
Boilers
N
W
E
S
44
OFFICE
12
100
15
10
40
B3
B5
B7
Truck
B4
B6
B8
Scale
10
EL-4
15
10
EL-1
M.C.C
134
42
B1
B2
40
B13
B15
B16
BOILER
ROOM
B14
EL-3
EL-2
83
Scalper
Rolling Systems
• Conditioners
• Roller mills
• coolers
41
7
33
36
TRUCK RECEIVING
16
RAIL RECEIVING
83
65
147

VIEW FROM SOUTH

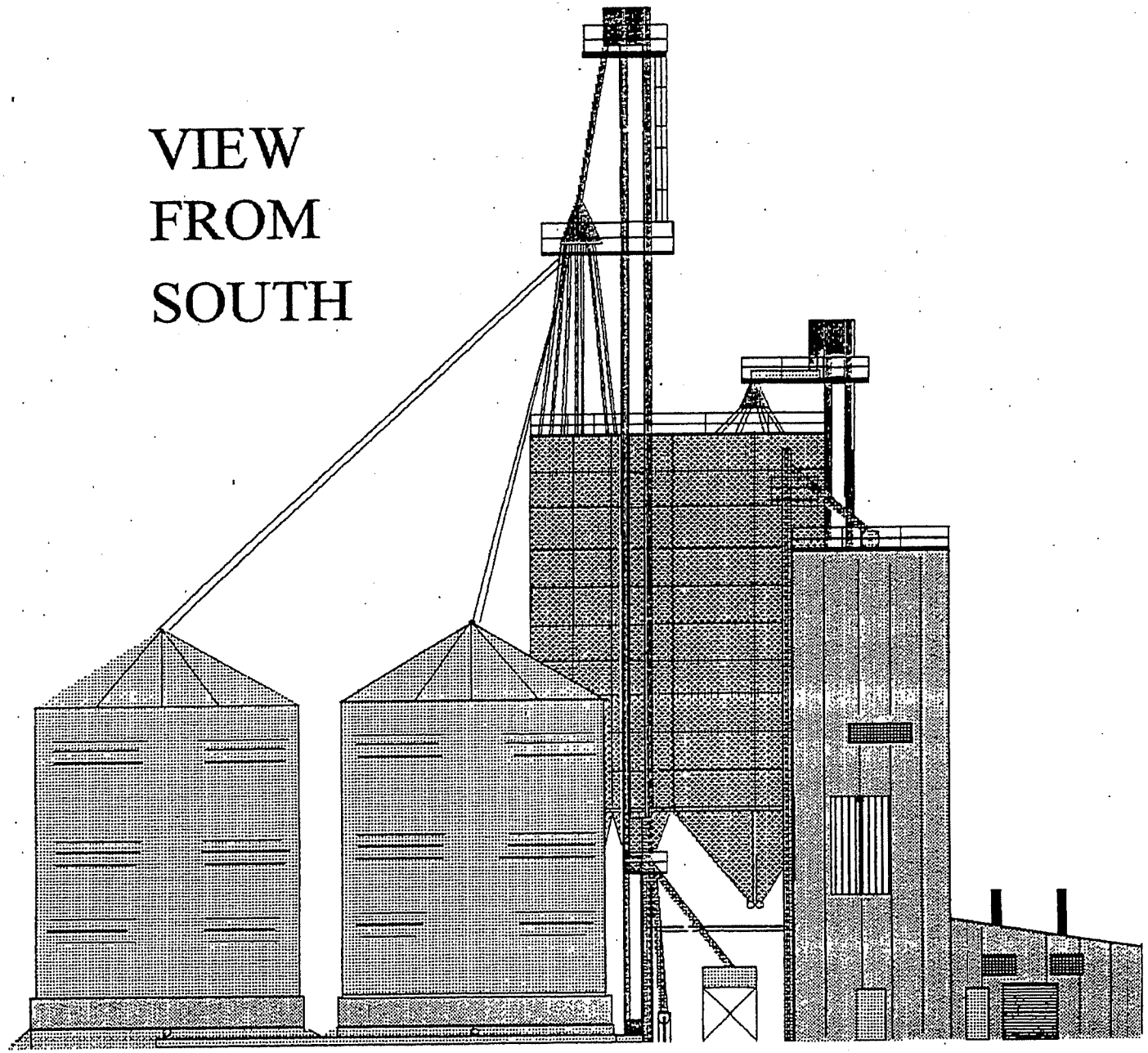


Exhibit #3

Exhibit 13

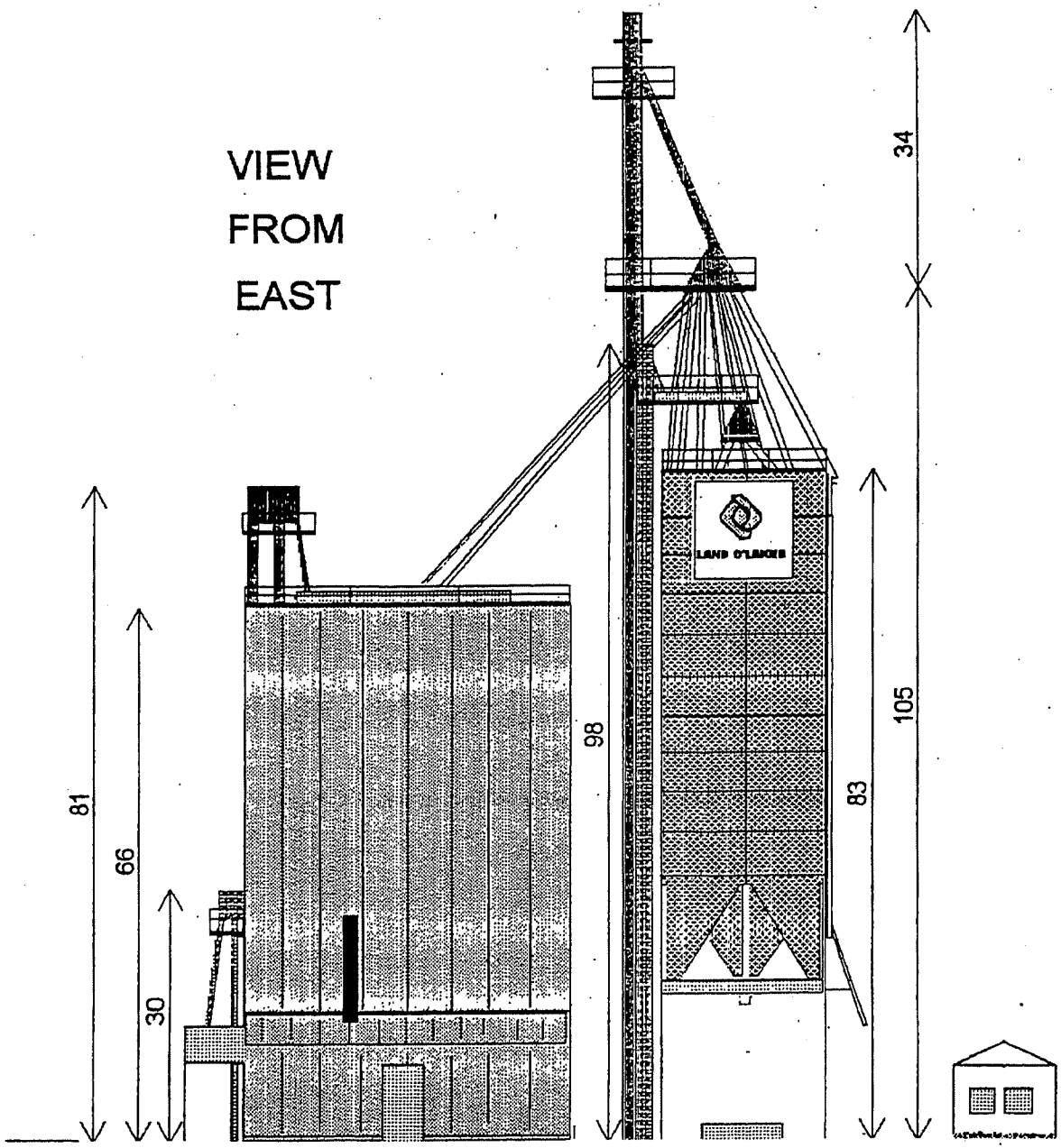


Exhibit D2

Top Down View of Cooler, Cyclone + Fan placement

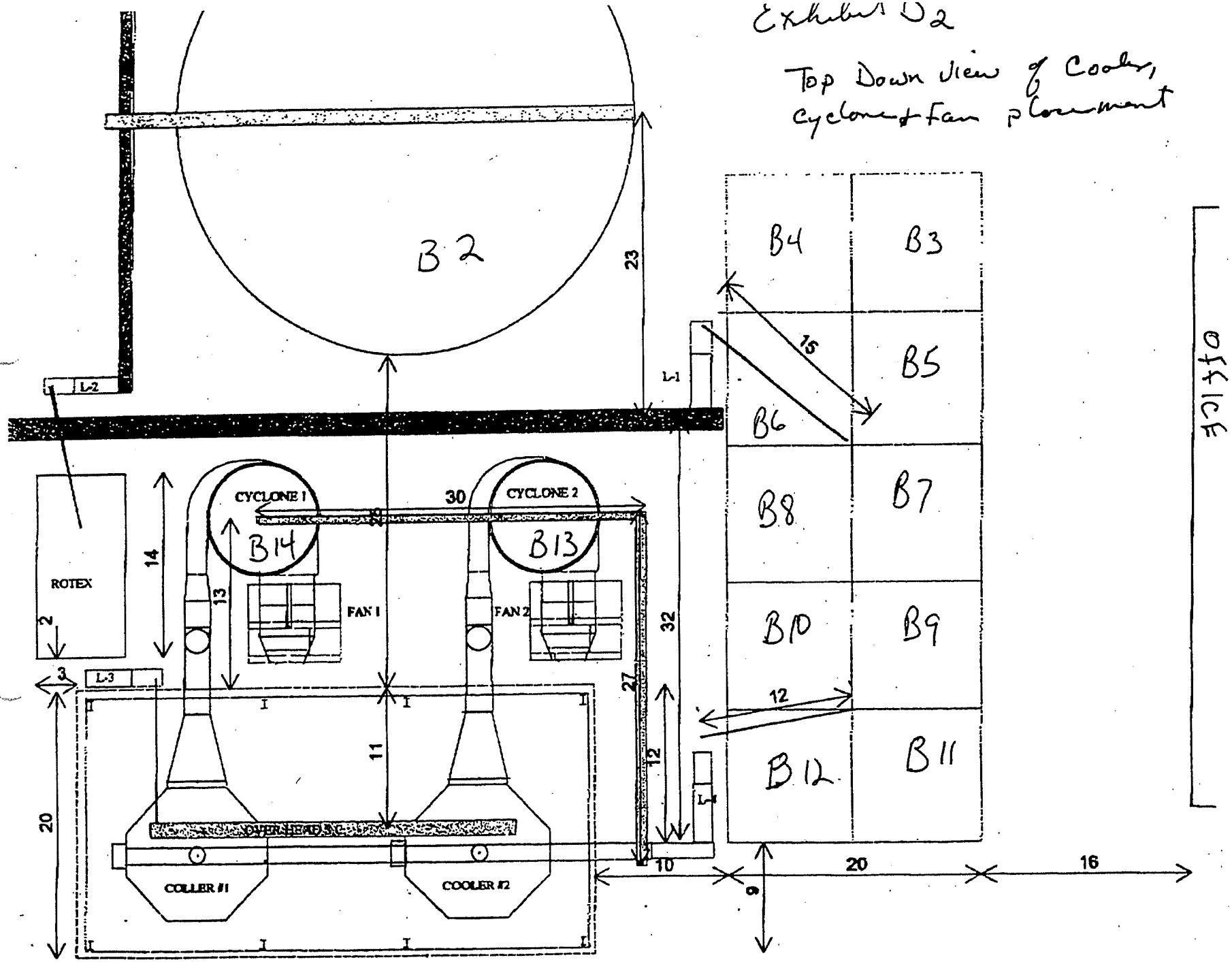
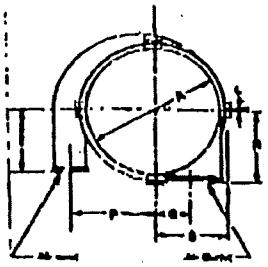
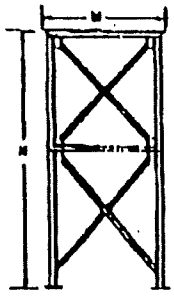


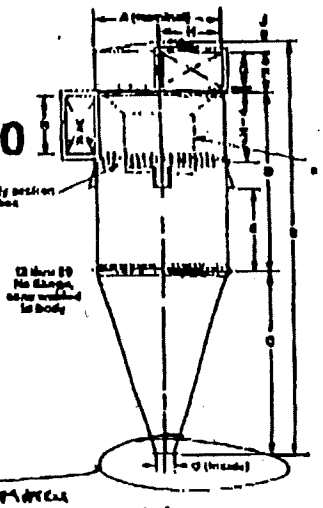
Exhibit C

Day Cyclone Model Sizes 51 through 130





Roof-type Support



Will match flange of 16" AN.

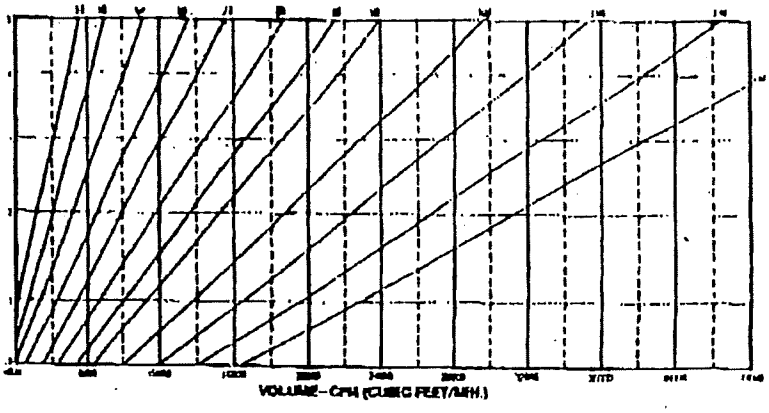
Dimension chart for Day Cyclone Sizes 51-130

Size A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	Std Gauge
51	171 1/16	74 1/2	77	35 1/2	15 1/16	13 1/8	25 1/8	4 3/4	11 1/8	1/16	54 1/8	131	6	31 1/16	13 1/16	28	29 3/16	24	14
56	189 3/16	80	87	40 1/2	16 1/16	15 1/8	27 1/8	5 1/8	12 1/8	1/16	59 1/8	145 1/2	8	34 3/16	14 3/8	30 1/8	30 1/16	26 1/8	14
62	205 1/8	89 1/2	91	42 1/2	19 3/8	17 1/4	30 1/8	5 1/8	13 3/8	1/16	67	157	8	38	16	33 1/8	34 1/2	29 1/8	12
68	231 1/16	100	104	49	21 1/8	19 1/8	33 1/2	6 1/16	15	1/16	73	174	8	41 1/8	17 3/8	36 1/2	37 1/8	32 1/8	12
74	245	106 1/2	109	51	22 1/8	20 1/4	36 1/4	6 1/8	16 1/4	1/16	79	186 1/2	10	45 1/4	19	40	40 1/16	35 1/2	12
80	265 1/4	116	117	55	25 1/8	23 1/4	39 1/4	7 1/8	17 1/2	1/16	85	200	10	48 1/8	20 1/2	43	43 3/8	38 1/8	10
86	283 1/16	125	123	58	27 1/4	24 1/2	42 1/4	8	18 1/2	1/16	91	212	10	52 1/2	22	46	46 3/4	41 1/2	10
100	307 1/4	138 1/4	130	65	30 1/8	28 1/4	49	8 1/2	22	1/16	105	236 1/2	12	61 1/8	25 1/8	53	52 3/8	46 1/2	10
120	348 1/8	162 3/16	140	65	35 1/16	33 1/2	58 1/8	10	26 1/2	3/16	125 1/2	268 1/2	16	73 1/8	30 1/2	63 1/16	64 1/2	58 1/16	3/16
130	372 1/8	178 1/16	146	65	38 1/16	36	64	10 1/8	28 1/2	3/16	135 1/2	284 1/2	16	79 1/8	33 1/8	68 3/16	69 1/2	63 1/16	3/16

Gauges and Weights of Day HV Cyclones

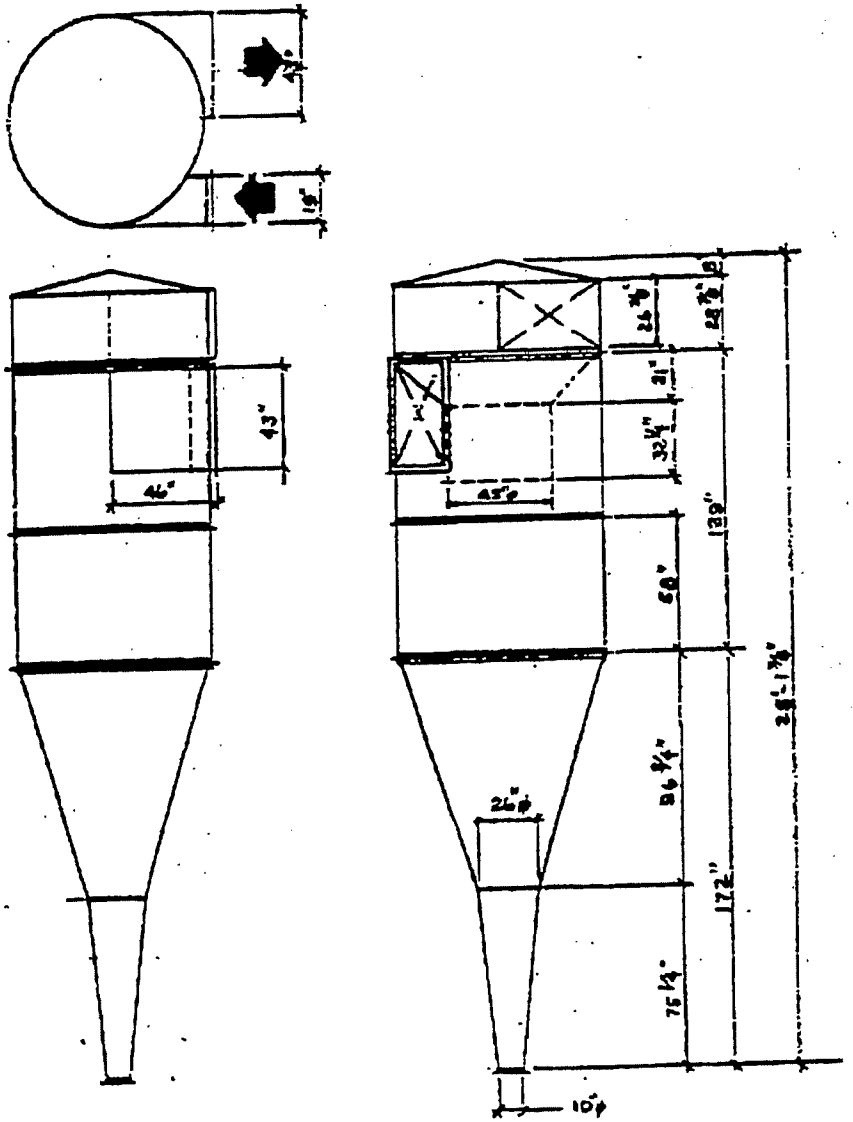
Size	14 Ga.	Weight 12 Ga.	10 Ga.	1/8"	1/4"
51	840	1200	1500	1050	2760
56	1000	1450	1830	2380	3340
62		1770	2250	2940	4120
68		2100	2700	3500	4900
74		2400	3150	4050	5750
80		2700	3600	4555	6400
86			4000	5140	7200
90			4350	5600	7800
100			4860	6600	9300
110				7400	10000
120				8700	11700
130				9600	13250

Selection Chart



Donaldson Company, Inc.
Day Division
P.O. Box 1288
Minneapolis, MN 55440
612/887-3900

DAY—The industrial air pollution control system



84 CYCLONE

TRI-STATE MECHANICAL PRODUCTS INC.

95386 5-31-95

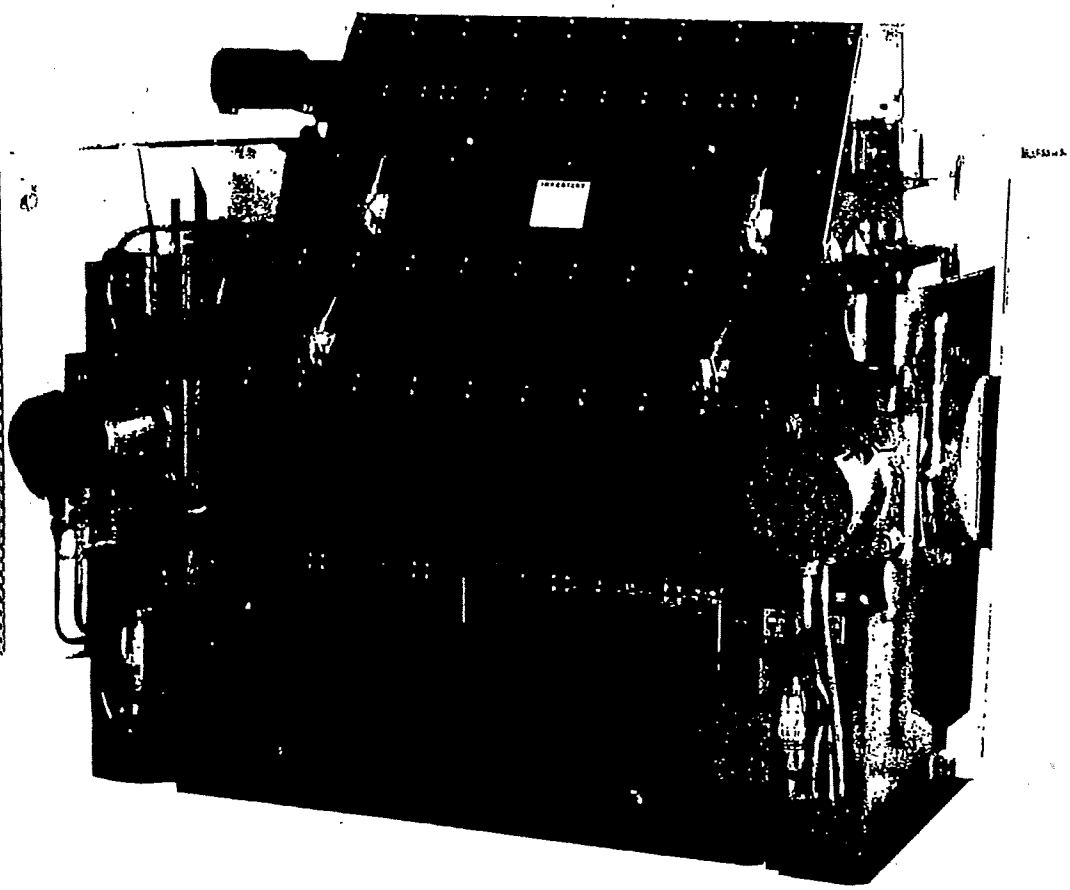
DE

Exhibit D

ROSKAMP™

Mark IV
Flaking Mill

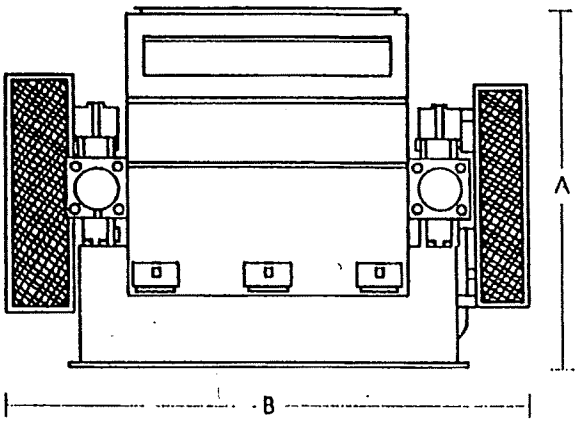
The result of innovative engineering and devotion to continuous product development. The Mark IV features quality construction and materials throughout. Unique square bearing housing design assures accurate, consistent flaking and ease of operation.

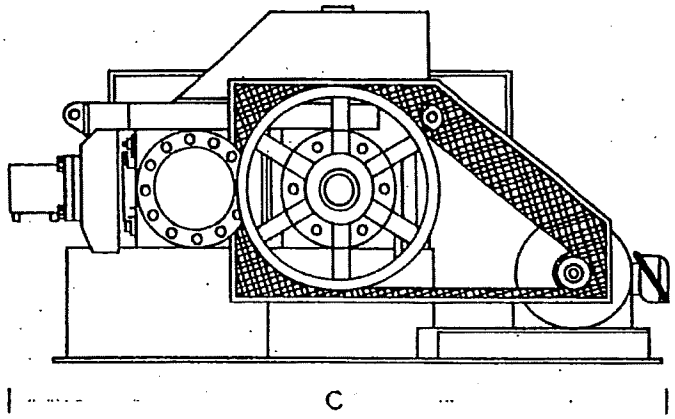


Roskamp®

Mark IV Specifications

PHYSICAL DIMENSIONS

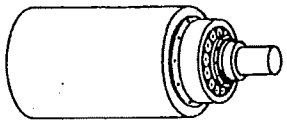




FEATURES

Rolls

Rolls are of the highest quality clear chill cast iron with several alloys available. Standard chills are 510-550 Vickers. Medium alloy rolls of 550-620 Vickers are used for products with high incidence of mineral impurities. "Indefinite chill" rolls with hardness of 450-510 Vickers are used where higher temperatures or more severe use is expected. Due to the metallurgy, indefinite chill rolls show improved thermal conductivity to maintain a uniform roll diameter. Increased "toughness" of the indefinite chill roll improves resistance to spalling. All rolls are cast, machined, and ground to the best technical specifications. All rolls are dynamically balanced to minimize mill vibration and to prolong bearing life.



MODEL NUMBER SYSTEM

SP-2400-42

SP = Single Pair High

Diameter
2400 = 24 inches (610 mm.)
2800 = 28 Inches (711 mm.)

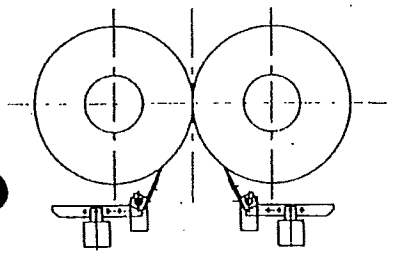
Roll Length
42 In. (1067 mm.)
52 In. (1321 mm.)
62 In. (1575 mm.)

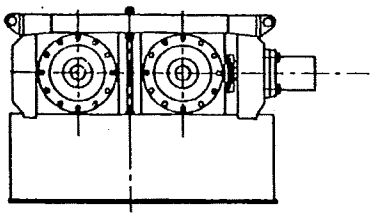
MODEL	"A" HEIGHT VIBRATORY FEEDER	"A" HEIGHT ROLL/PIN FEEDER	"B" LENGTH Inches (mm.)	"C" DEPTH Inches (mm.)	WEIGHT lbs. (kg.)	DRIVE (Max.) HP (kw.)
SP-2400-42	64" (1626)	64" (1626)	84" (2134)	105" (2667)	18200 (8273)	100 (75)
SP-2800-52	73" (1854)	73" (1854)	107" (2718)	128" (3251)	33000 (15000)	125 (94)
SP-2800-62	73" (1854)	73" (1854)	118" (2997)	128" (3251)	39000 (17727)	150 (113)

Bearings
Bearings for the Mark IV are double row, spherical roller, self-aligning bearings and are chosen to last the life of the roll under normal circumstances. Grease lubrication is standard, and all bearings are equipped with fittings to allow lubrication while the mill is in operation. L10 life for Mark IV Flakers is projected to be 300,000 hours.

Shafts
Roll shafts are high tensile, high yield alloy steel. Flaking mill design keeps shaft lengths to a minimum for reduced overhung and bearing loads, and to keep bending moments to a minimum.

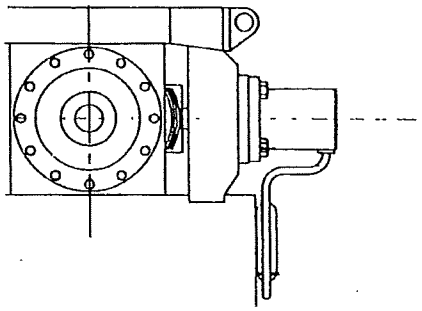
Scrapers
Free-floating roll scrapers are mounted in a cradle under the rolls for ease of service. Scraper pressure is applied through counter weights, adjustable to 4 positions, and is as dependable as gravity itself. The scraper can be adjusted in 3 ways: blade parallel to the roll, angle of the blade to the roll, and the pressure of the blade to the roll.



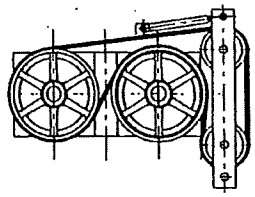


Bearing Housings, Base & Frame
The base frame is fabricated from 3/4" and 1" plate steel, double wall box-type construction for superior strength. Flaking mill frame will not distort under full flaking pressures. All welds are stress relieved prior to the machining of the base. The base is filled with a dense aggregate to dampen the effects of machine and floor vibration. The upper portion of the frame consists of interlocking pressure and tension members which disperse the high forces and shock generated by flaking pressures. All interlocking members are machined to maintain precise tolerances. Bearings are mounted in massive cast iron square bearing housings, resting on machined bearing ways. Replaceable wear plates assure exacting roll positioning will be maintained through years of service. Design of the base and frames ensures that the rolls will remain permanently in tram (same horizontal plane) for highest flake quality and control. Maintenance to the base and frame is not required.

Roll Closure Mechanism
Large diameter hydraulic cylinders apply the flaking force directly through the center line of the rolls. The push stroke of the 8" (203mm) cylinder is used to maximize the effective working area and keep operating pressures low. Rolls are protected from the shock of foreign materials by steel leaf springs and nitrogen charged hydraulic accumulators.

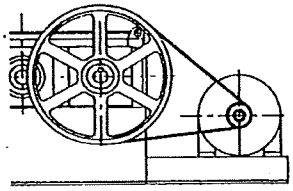


Inter-Roll Drive
Inter-roll drives are CC section V-Belts. Differential roll speed ratios of 0%, 4%, 8% and 12% are standardly available. A hydraulic belt tensioning system maintains proper tension regardless of roll position or belt length.

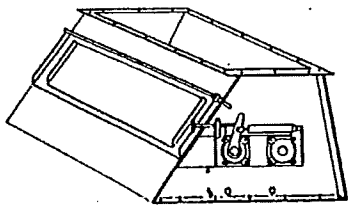


Mark IV
Specifications

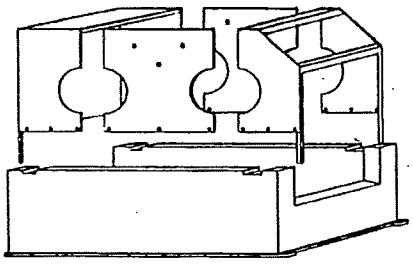
Main Drive & Motor Base
The main drive (motor to rolls) is HTD belt for maximum efficiency and minimum maintenance, 5V section V-belt drive is optional. The motor base will accept standard motor frames and is bolted to the mill base for greatest ease in shipping and mill installation.



Feeder
The roll feeder is standard. It features a steeply angled housing for cleanliness. Feed roll is corrugated to fit products processed. Independent drive and positive gate action easily adapt to full automation control. (see separate product sheet).



Roll Housing
The roll housing is bolted to the base in 3 sections: front, center, and rear. This permits easy roll removal, as the rolls can be taken out the front, back, or top of the mill. Large stainless steel doors provide ample access to service areas, such as the feeder components and magnet, cheek plates (saddle plates), and scrapers. Smaller sample access doors permit flake sampling on stream. Standard housing-to-shaft seals are synthetic fiber brushes. With greater steam levels, UHMW PE spool-type seals are used to prevent steam, heat, and moisture from escaping the mill housing.



OPTIONS

Feeders
Pin feeder (see separate product sheet)

Vibratory Feeder (see separate product sheet)

Conditioning Chambers (steam)
(see separate product sheet)

Hydraulic power unit
Stand-alone in various sizes (see separate product sheet)

Controls and console
Electro-hydraulic stand-alone controls (see separate product sheet)

Magnet
Full width of infeed for dry applications

Roskamp Champion
2975 Airline Circle
Waterloo, IA 50703
(319) 232-8444
fax: (319) 236-0481
tlx: 287549

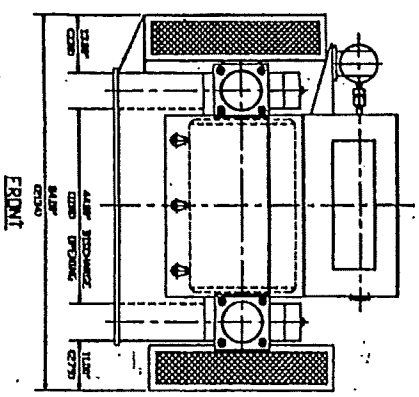
Company policy is one of continuous improvement of our products and we therefore reserve the right to change specifications without notice.

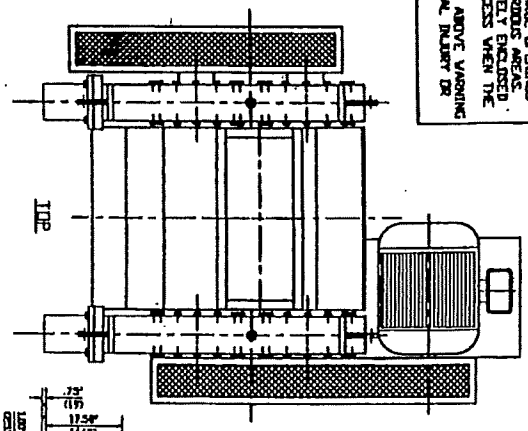
CPM
Part of worldwide Ingersoll-Rand

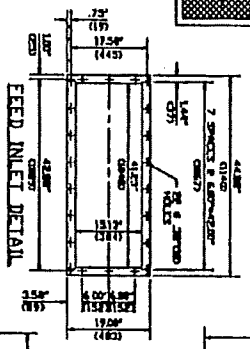
Exhibit D2

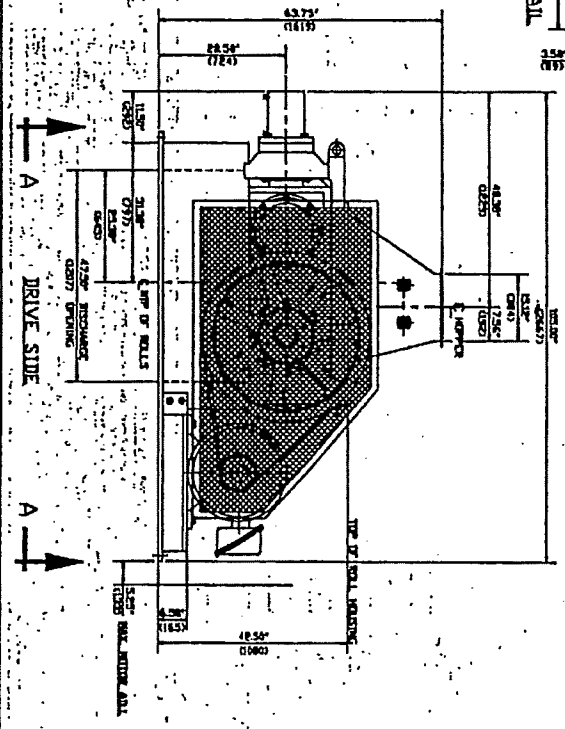
IMPORTANT NOTE

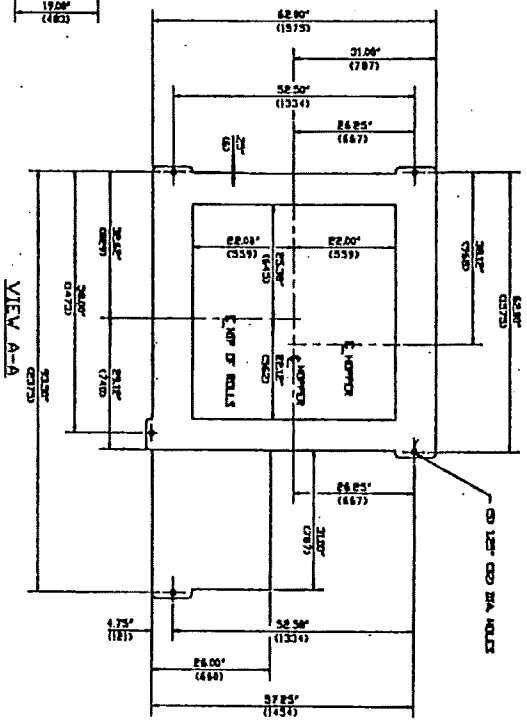
ALL INLET AND DISCHARGE OPENINGS ARE POTENTIALLY HAZARDOUS AREAS. THEY MUST BE COMPLETELY ENCLOSED TO PREVENT HUMAN ACCESS WHEN THE MACHINES ARE RUNNING. FAILURE TO OBEY THE ABOVE WARNING MAY RESULT IN PERSONAL INJURY OR EQUIPMENT DAMAGE.











NOTE: MILL WEIGHT (LESS MOTOR) = 19,000 LBS. (8,618 Kg.)

D-30531

THIS DIMENSION SHEET IS FOR REFERENCE ONLY UNLESS PROPERLY ENDORSED.

CERTIFIED FOR _____

CUSTOMER NO. _____ CPM NO. _____

CERTIFIED BY _____ DATE. _____

REVISIONS			
10-7-98	MRY	13845	
DRAWING RELEASE			
INIT	10-6-98		
INIT	10-7-98		

CPM
Part of worldwide Bühler-Kahl

GENERAL DIMENSION DRAWING

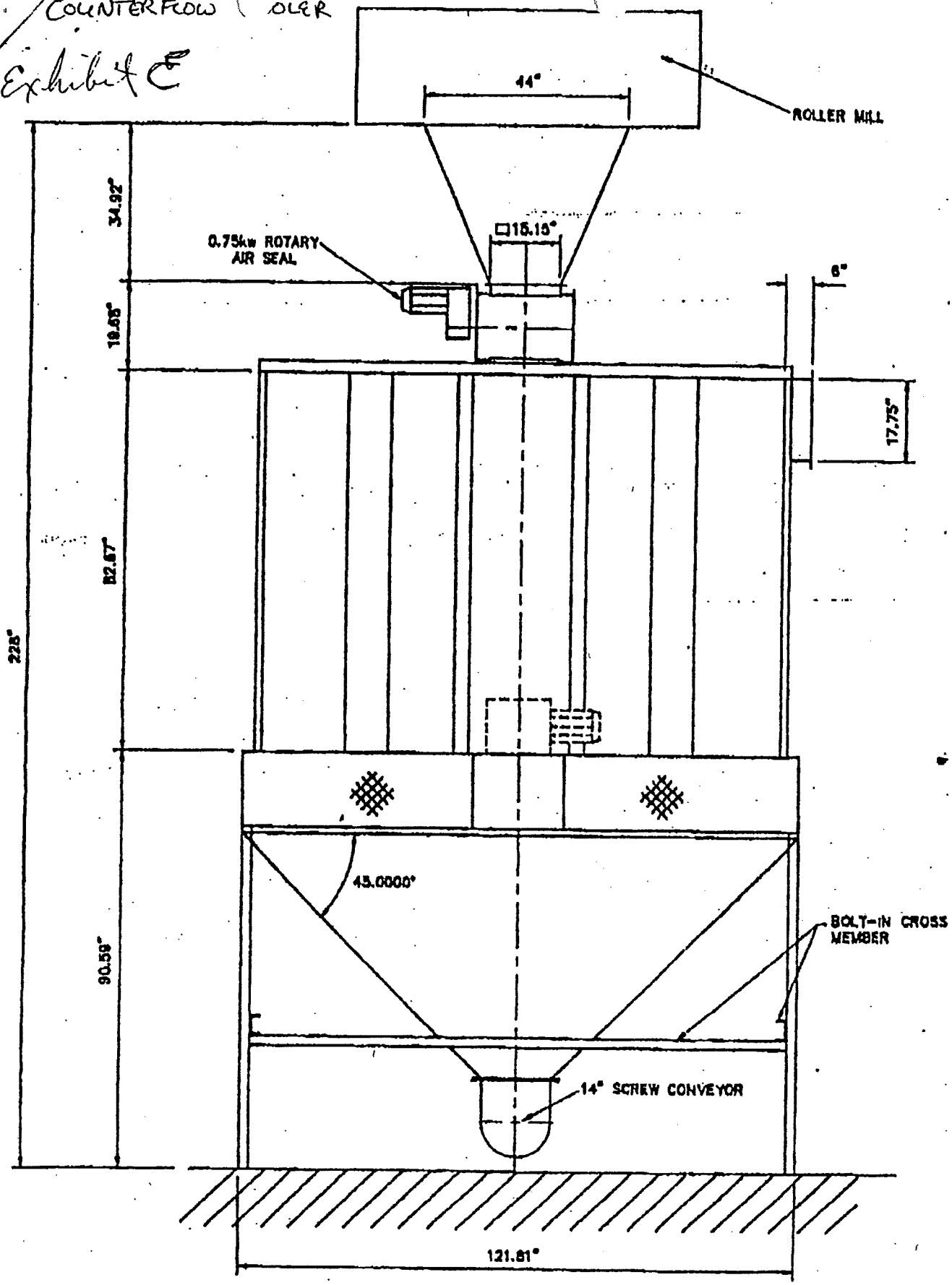
24 X 42 MARK III FLAKING MILL
WITH MODULAR PIN/ROLL FEEDER

GENERAL DIMENSION DRAWING

CALIFORNIA PELLET MILL CO. | D-30531 | 1

COUNTERFLOW (OLER

Exhibit E



COUNTER FLOW COOLER

Exhibit E

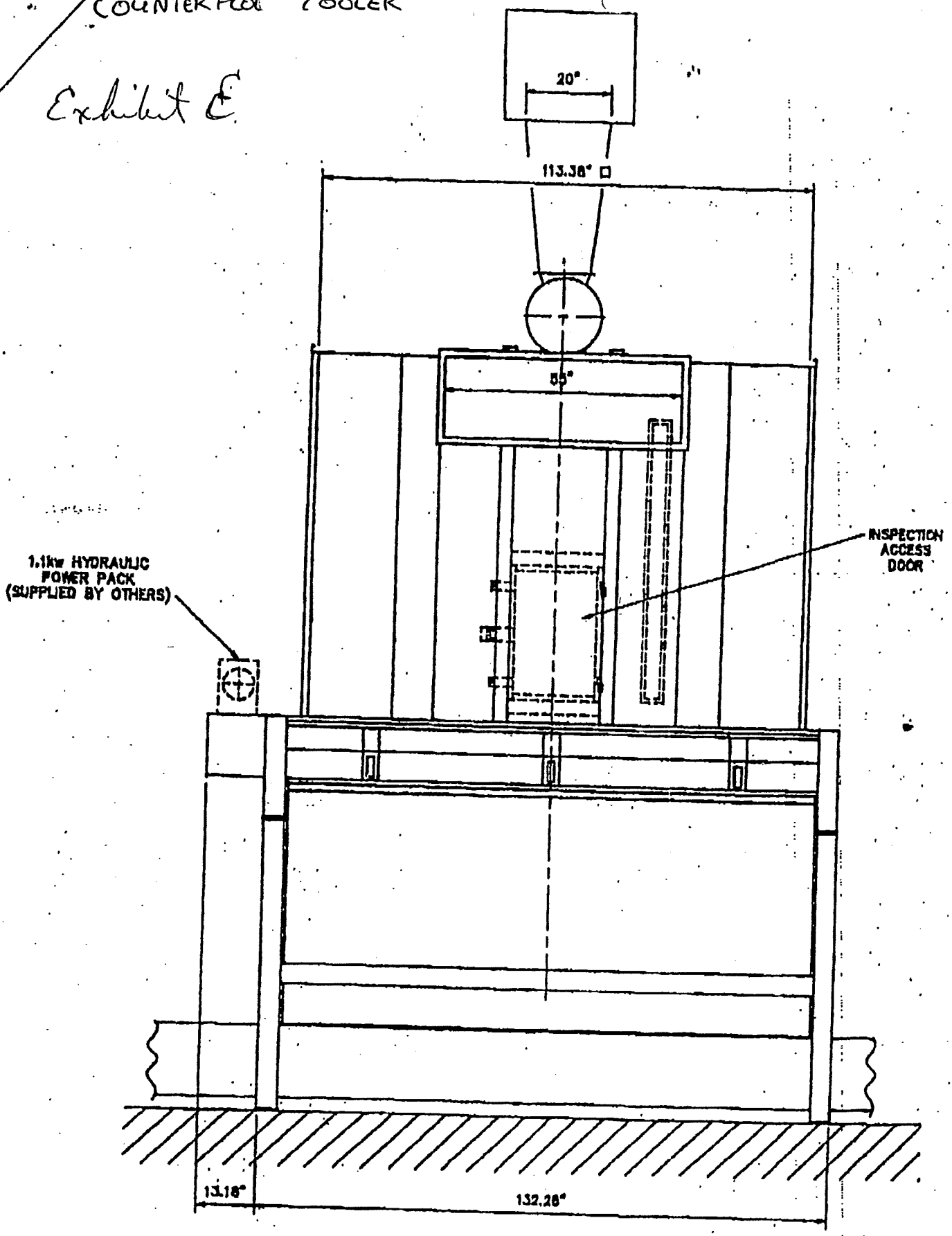


EXHIBIT F

CALCULATIONS FOR EMISSIONS

I. Emission Factors Used:
- A. Receiving - .6 lbs/ton from Table 6.4-1
- B. Shipping - .3 lbs/ton from Table 6.4-1
- C. Flaking - .2 lbs/ton from Talbe 6.4-6

II. Whole Cottonseed Transload Process

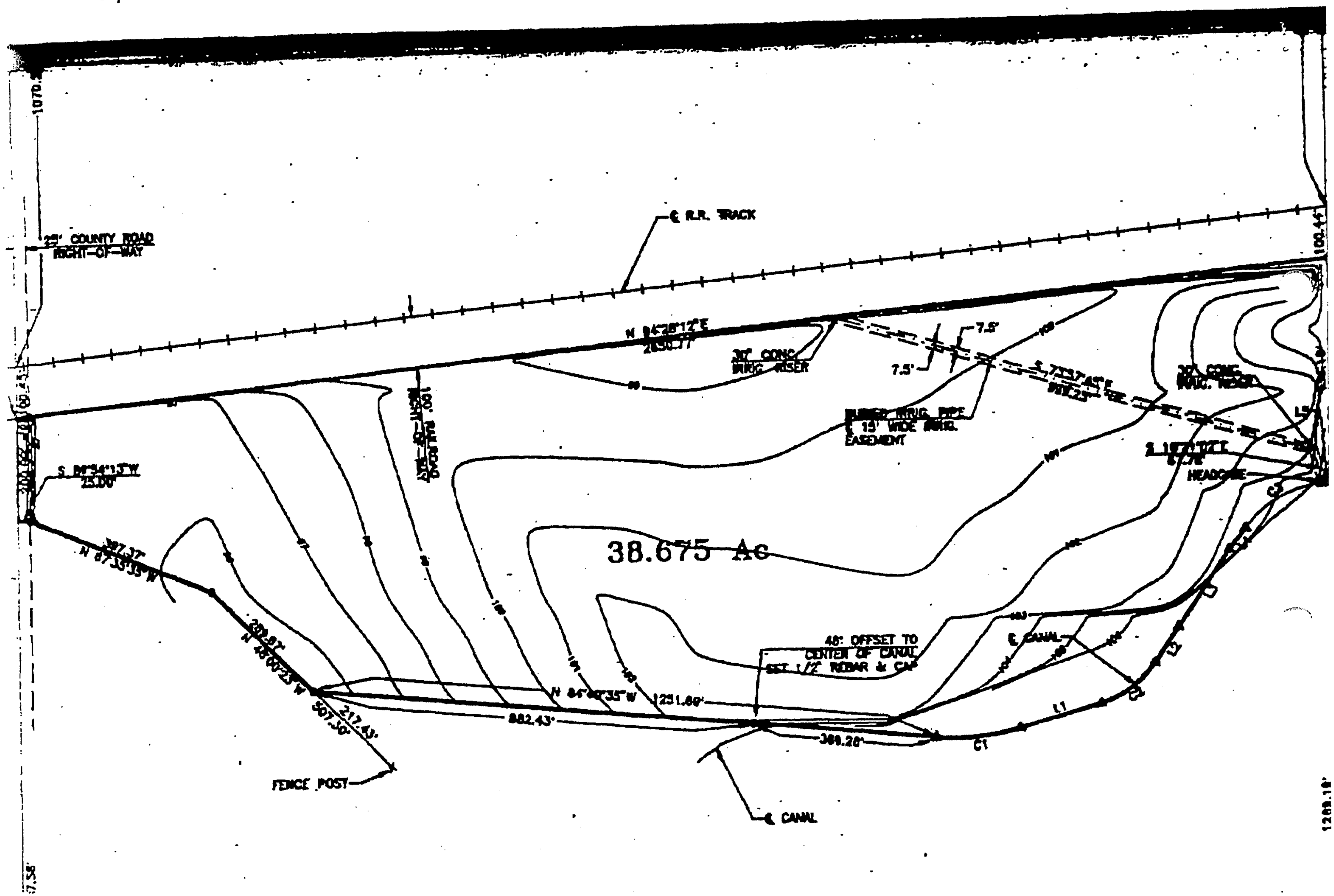
Process	Projected Sales Ton/y	Current Sales Ton/y
A. Transloading	50,000	18,000
Emission Factor (Receiving Table 6.4-1	.6 lb/ton	.6 lb/ton
Emission Totals lbs/y	30,000	10,800
Emission Totals tons/y	15	5.4

III. Grain And Commodity Receiving/Processing

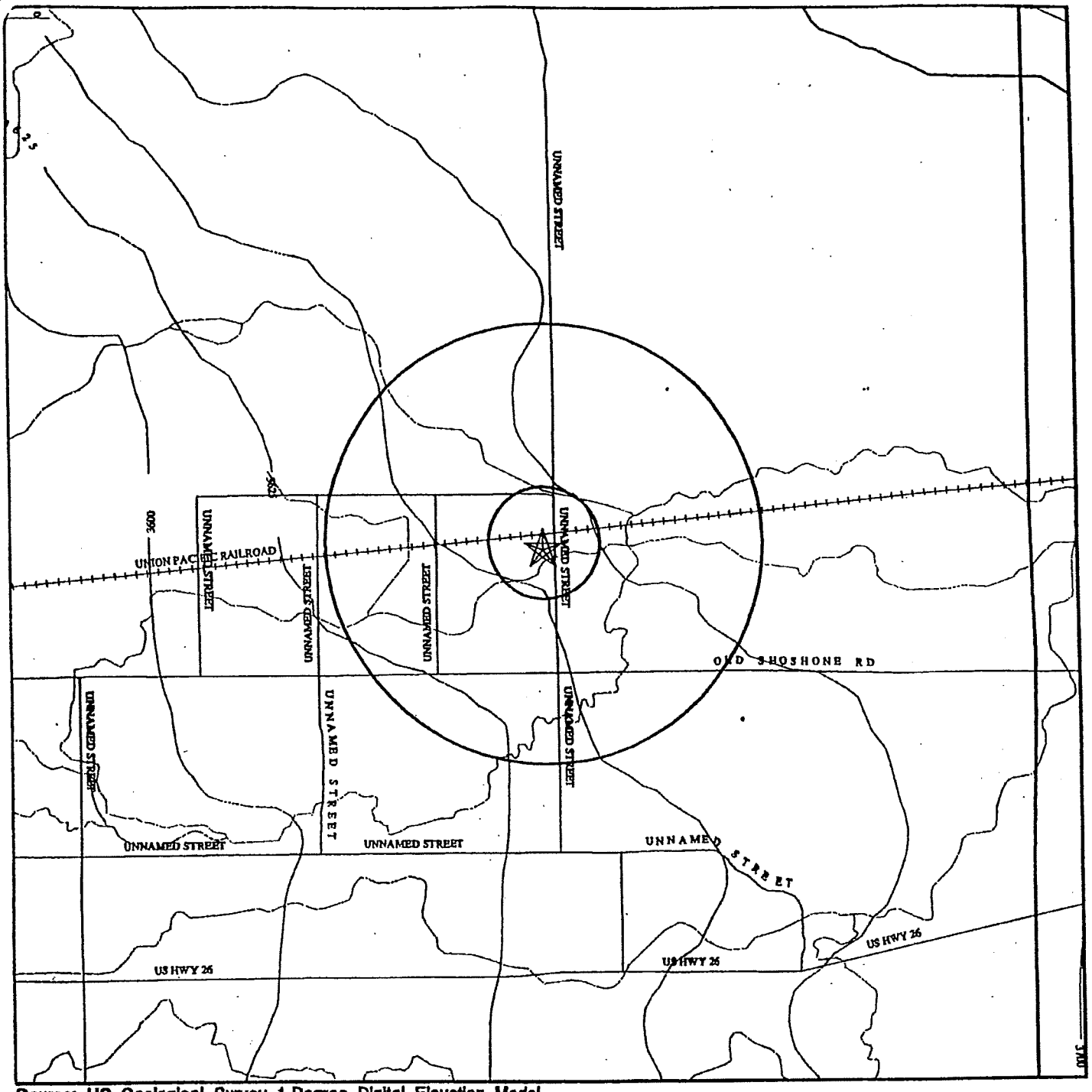
Process		
A. Receiving	100,000	40,000
Emission factor receiving table 6.4-1	.6 lb/ton	.6 lb/ton
Emission total lbs/y	60,000	24,000
Emission total tons/y	30	12
B. Shipping	100,000	40,000
Emission factor shipping table 6.4-1	.3 lb/ton	.3 lb/ton
Emission totals lbs/y	30,000	12,000
Emission totals tons/y	15	6
C. Flaking Process (Both Roller Mills)	75,000	30,000
Emission factor flaking table 6.4-6	.2 lbs/ton	.2 lbs/ton
Emission totals lbs/y	15,000	6,000
Emission totals ton/y	7.5	3

IV. Site Total Emission	67.5 tons/year	26.4 tons/year

Exhibit G


℄ R.R. TRACK
25' COUNTY ROAD RIGHT-OF-WAY
N 84°28'12"E
30" CONC. IRRIG. RISER
BURIED IRRIG. PIPE & 15' WIDE IRRIG. EASEMENT
30" CONC. IRRIG. RISER
HEADGATE
S 88°54'13"W
25.00'
38.675 Ac
48' OFFSET TO CENTER OF CANAL
SET 1/2" REBAR & CAP
N 84°00'35"W
1251.69'
882.43'
℄ CANAL
FENCE POST
℄ CANAL
C1
L1

TOPOGRAPHIC MAP - 074789.1r - Land O Lakes



Source: US Geological Survey 1-Degree Digital Elevation Model
Compiled 09/15/92

0 1/4 1/2 1 2
Miles

- Major Roads
- Contour lines (25 foot interval unless otherwise shown)
- Waterways
- Earthquake epicenter, Richter 5 or greater.
- (F)(S) - Closest well according to (F)ederal or (S)tate database in quadrant.
- (P) - Closest public water supply well.

TARGET PROPERTY:	2300 Road East	CUSTOMER:	Land O Lakes
ADDRESS:	2300 Road East	CONTACT:	Inez Lang
CITY/STATE/ZIP:	Gooding ID 83330	INQUIRY #:	074789.1r
LAT/LONG:	42.9505 / 114.6339	DATE:	April 24, 1995

Exhibit H

LAND O'LAKES, INC.
WESTERN FEED DIVISION

GOODING, ID. PROJECT

LIST OF ADJACENT LAND OWNERS TO PROPOSED PURCHASE OF JOHN CLARKSON PORTION OF T 5 S RANGE R 15 E, SECT 35, IN THE NORTH HALF N.E. AND SOUTH HALF OF N.E. QUARTER & NORTH HALF OF S.E. QUARTER. NORTH PORTION THEREOF APPROXIMATELY 40 ACRES.

1. BILL ARKOOSH
   2368 E 1775 SOUTH
   GOODING, ID. 83330

2. AVENMORE WEST INC.
   1728 S 2300 EAST
   GOODING, ID. 83330

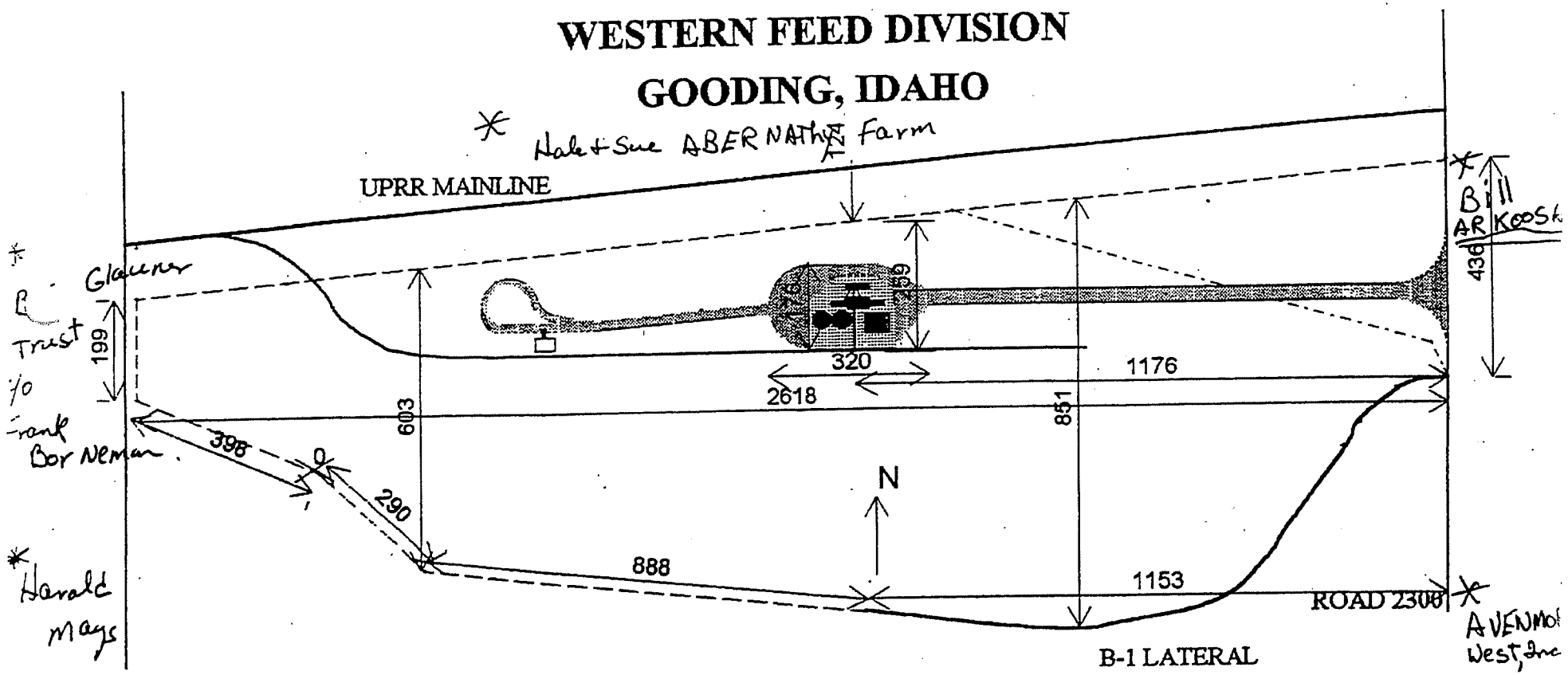
3. JOHN CLARKSON
   2262 E 1775 SOUTH
   GOODING, ID. 83330

4. B.F. GLAUNER TRUST
   C/O FRANK BORNEMAN
   2242 EAST 1700 SOUTH
   GOODING, ID. 83330

5. HAROLD MAYS
   2214 E 1775 SOUTH
   GOODING, ID. 83330

6. HALE & SUE ABERNATHY
   1710 S 2250 EAST
   GOODING, ID. 83330

LAND O LAKES, INC.
WESTERN FEED DIVISION
GOODING, IDAHO



John Clarkson Farm

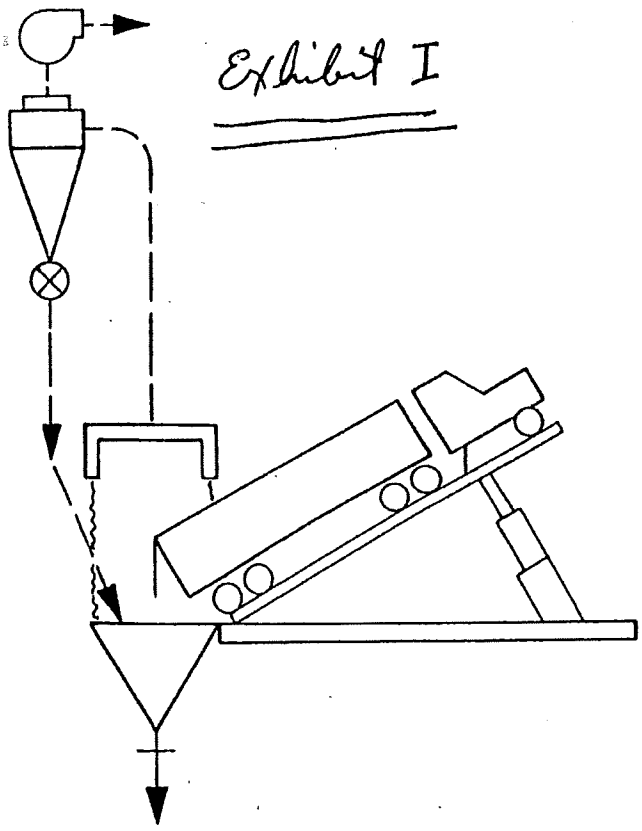


Figure 53-2. Truck dump unloading system.

The construction of the unloading pit, type of transporter, material free-fall distance, unloading rate, material characteristics, and ambient conditions are all significant factors contributing to dust generation. Of these six factors, the material characteristics and type of transporter are frequently not controllable by the feed manufacturer.

Hopper bottom unloading allows greater control over dust generation than truck dumping, as mass flow and free-fall distance can be more strictly regulated. Deep unloading pits used in truck dumping operations to allow for material surge are not necessary for hopper bottom unloading operations because greater mass flow control can be exercised.

In truck dumping operations, the angle of inclination and interparticle friction govern mass flow. Consequently, the operator cannot effectively control the surging flow. Conversely, in hopper bottom unloading, mass flow can be accurately regulated by using shallow unloading pits and screw conveyors, as shown in Figure 53-1. This application, termed the choke-feed method, eliminates material free-fall and surging mass flow rates. Since the feed manufacturer cannot completely control the type of railcar or truck supplying the plant, both types of transporters must be serviced; however, the choke-feed method minimizes dust generation.

Boxcars emptied by front-end loaders or power shovels constitute another type of unloading system. As in truck dumping operations, the material is allowed to free-fall from the transporter into the unloading pit, thereby producing a dust cloud. Besides generating dust, this system consumes inordinate manpower. Therefore, if possible, ingredient suppliers should be required to employ self-unloading transporters.

Occasionally, ingredients are transported from the rail cars and trucks by pneumatic conveyors. The material is usually blown through a cyclone receiver, which separates the materials from the air. The air is discharged to the atmosphere and the material to a storage bin. Infrequently, the material is expelled directly into a storage bin and the excess air emitted through a bin vent filter. A vent is required on the storage bin to relieve air displaced by the entering materials.

Bulk Material Conveyance

Bulk material is conveyed to storage and processing equipment by conveying mechanisms that include screw conveyors, belt conveyors, pneumatic conveyors, oscillating conveyors, drag conveyors, bucket elevators, and gravity flow. The type of conveyor, its application, and the operating procedure all greatly affect dust generation.

Screw conveyors are among the oldest and simplest methods used to move bulk materials. A screw conveyor consists of a rotary screw mounted inside a conveying trough. For each rotation of the screw the material is channeled along the trough by the spiralled flange. A screw conveyor can transport bulk material horizontally or at inclines of 90 degrees. Screw conveyors are easily covered making them dust tight; however, allowance for air displacement must be made. The displaced air should be discharged to an air pollution control device to recover valuable product and to protect the environment. Screw conveyors are an excellent and simple method of controlling dust.

Belt conveyors are widely used to transport bulk materials due to their simple and inexpensive operating characteristics. They can be troughed or flat, but are not as adaptable to inclined conveyance as screw conveyors. Also, they are not as easily enclosed as screw conveyors, which results in dustier operations. Therefore, in dust sensitive areas, it is advisable to use screw conveyors. Also, screw conveyors are more compact than belt conveyors. This characteristic is very important in space limited areas. Thus, belt conveyors can be successfully applied when the material is relatively dust-free and space is not a major factor.

Pneumatic conveyors were originally used to control dust. Some advantages of pneumatic conveying include ease of installation, layout flexibility, multiple feed and discharge points, low maintenance requirements, self-cleaning capability, and dust control. Some disadvantages include high operational cost compared to mechanical systems, high initial costs that can exceed capital expenditures for a mechanical system, and limited material applicability.

Since pneumatic conveyors operate by blowing or sucking material through a pipe, dust containment is an inherent property of the system. Dust is generated but is conveyed along with the material. Due to the relative weight of the dust compared to the material, the dust remains suspended in the air when the material is discharged. However, the suspended particles are easily directed to an air pollution device to separate them from the air. The air is discharged to the atmosphere and the dust is returned to the process. Although pneumatic conveyors are environmentally desirable, operating costs may be prohibitive.

Oscillating conveyors move material by the forward and upward repetitive motion of a trough. They can handle a wide variety of material, can easily be made dust tight, and are relatively compact. By varying the oscillating speed, dust generation can be minimized. Their major disadvantage is that a single drive is effective for a maximum length of only 100 feet.

Oscillating conveyors, properly operated, can keep dust concentrations to a minimum; however, for long transitions they

Chapter 53

Air Pollution Control

Glenn J. Boresi
Ralston Purina Company

Industry has a responsibility to assist in maintaining environmental conditions at a level that will assure the health and welfare of man, animal, and vegetation. To fulfill this responsibility, the complex ecological cycle of nature must be preserved. Great strides toward achieving this have been made as a result of government's legislative initiative and industry's technological cooperation.

One problem, which is constantly being improved, is air pollution. In feed manufacturing, the primary air pollutant is particulate matter, i.e., dust, while the secondary pollutant is sulfur dioxide. The handling of grain, starting with receiving and ending with shipping, generates particulates. Generation of particulates can, in certain circumstances and under certain conditions, have deleterious effects including, but not limited to, the following:

- Precursor to dust explosions in confined areas.
- Toxic to man and animals via the respiratory system as a result of physical interference with respiratory passages.
- Aggravates symptoms of individuals suffering from respiratory diseases.
- Obscures visibility.
- Corrosive depending on the particulate's chemical characteristics.

Sulfur dioxide is generated in the fuel combustion process used to produce steam. Due to the low amount of steam required, sulfur dioxide emissions from feed plants are not usually a major concern; however, they should not be dismissed. Some of the effects of sulfur dioxide in the atmosphere remain the subject of intense debate; these effects can, under certain conditions and circumstances:

- Constrict respiratory passages that aggravate the symptoms of individuals suffering from heart and lung disease.
- Be toxic to plants' foliage.
- Corrode textiles, building materials, paints, and metal.
- Be a precursor to acid rain.
- Obscure visibility.

Because of these effects, the potential impact on the environment must be fully appreciated, particularly since acceptable sulfur dioxide emission rates can usually be achieved by using low sulfur content fuels.

The remainder of this chapter discusses how pollutants are generated in feed manufacturing, how they are typically controlled, and the framework of air pollution control legislation. It is important to keep in mind that it is the air pollution regulations that ultimately determine the required level of control. It is equally important to realize that air pollution regulations are constantly being updated and that they have built-in flexibility in certain cases.

GENERATION OF POLLUTANTS

Particulate matter, i.e., dust, is generated when ingredients or finished products are flowing in mass with or without the assistance of mechanical systems. The amount of dust generated is a function of the material's characteristics including moisture content, density, texture, and component configuration; and the processing equipment's operating characteristics including agitation, processing rate, air flow rate, material conveyance method, and moisture control.

Since many factors affect dust generation and an awareness of the mechanics involved is necessary to minimize its incidence, the phases of material handling and the manufacturing process must be analyzed separately. Feed manufacturing and material handling operations have been discussed in Sections III and IV; therefore, this chapter concentrates on the mechanics of dust generation by specific operation.

Bulk Material Receiving

Ingredients are shipped to feed manufacturing plants by rail cars and trucks. The type of truck or rail car determines the type of unloading system that is used.

Railroad hopper cars, hopper-bottom trucks, trailers, and dump trucks are self-unloaded by gravity flow into subgrade unloading hoppers. Mass flow rates from these transporters can be regulated to accommodate the capacity of the unloading pit. Several self-unloading, gravity flow systems are available because different systems are required for different transporter types. Figures 53-1 and 53-2 illustrate hopper bottom and truck dump unloading systems.

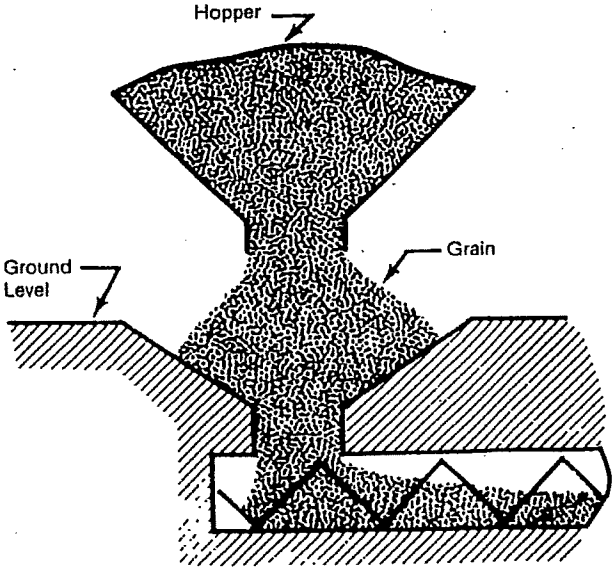


Figure 53-1. Hopper bottom unloading system.

APPENDIX C – FACILITY DRAFT COMMENTS

The facility had no comments on the draft permit on June 29, 2016.

APPENDIX D – PROCESSING FEE

PTC Fee Calculation

Instructions:
Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company: Glanbia Food, Inc. - Gooding
Address: 1728 S 2300 East
City: Gooding
State: ID
Zip Code: 83330
Facility Contact: Dane Higdem
Title: Director EHS
AIRS No.: 047-00008

N Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N

Y Did this permit require engineering analysis? Y/N

N Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO_X	0.0	0	0.0
SO_2	0.0	0	0.0
CO	0.0	0	0.0
PM10	3.3	0	3.3
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
Total:	3.3	0	**3.3**
Fee Due	**$ 2,500.00**		

Comments: