Statement of Basis

Permit to Construct No. P-2012.0003
Project ID 61135

Chobani Idaho, Inc.
Twin Falls, Idaho

Facility ID 083-00138

Final

April 12, 2013
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.

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ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

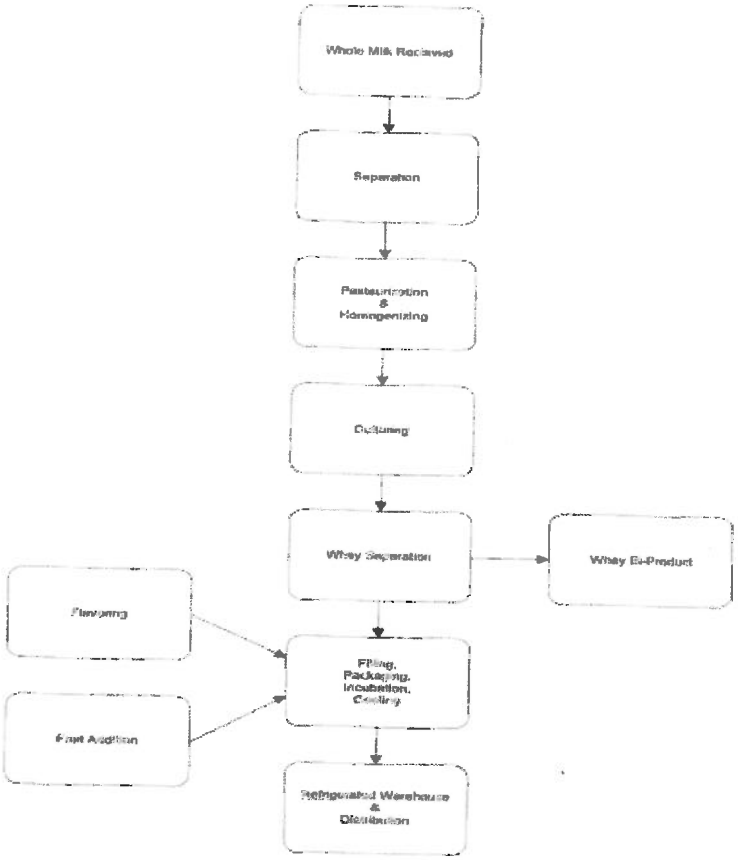
AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
ASTM	American Society for Testing and Materials
Btu	British thermal units
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
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
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
IC	internal combustion
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometers
lb/hr	pounds per hour
m	meters
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
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
PAH	polyaromatic hydrocarbons
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
POM	polycyclic organic matter
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
RICE	reciprocating internal combustion engines
Rules	*Rules for the Control of Air Pollution in Idaho*
scf	standard cubic feet

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
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

Chobani Idaho, Inc. (Chobani) is a yogurt production facility. Below is a process flow diagram of the yogurt making process.



Numerous operations are conducted at the facility is support of yogurt production. These include five natural gas-fired boilers, one anhydrous ammonia refrigeration system containing eight chillers, and eight one cell cooling towers. In addition, three natural gas make-up air unit heaters, eight natural gas roof top unit heaters, and eight natural gas infrared heaters are used to provide building heat to the offices and facility buildings.

Chobani is purchasing a waste water pre-treatment facility (WWPTF) from the City of Twin Falls that is being constructed to the southwest of the Chobani facility, on a parcel of Chobani property. The WWPTF will treat the effluent waste water from the dairy processing plant exclusively.

Biogas is generated in a USAB (anaerobic) reactor during the waste water pre-treatment process. A boiler will be used to heat effluent wastewater to ensure that the appropriate process temperature is maintained for pre-treatment. The boiler will combust biogas generated from the USAB reactor as the primary fuel with natural gas as a secondary fuel. Any excess biogas produced will be distributed to the candlestick flare and burned off. The boiler and flare will not operate simultaneously.

A diesel-fired emergency IC engine will be used to generate electricity at the WWPTF in case of an electric power failure. An additional diesel-fired emergency IC engine will be used to power the boiler as well as for future demand to ensure the effluent wastewater is heated in case of an electric power failure.

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 4, 2012	P-2012.0003, Initial PTC, Permit status (A, but will become S upon issuance of this permit)

Application Scope

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

The applicant has proposed to:

- Incorporate the City of Twin Falls WWPTF PTC, P-2012.0025 PROJ 61036 which includes an emergency IC engine and a candlestick flare
- Install and operate an additional boiler capable of combusting either biogas or natural gas and an additional emergency IC engine.

Application Chronology

November 29, 2012	DEQ received an application.
December 4, 2012	DEQ received an application fee.
December 10 – December 26, 2012	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action.
December 21, 2012	DEQ determined that the application was incomplete.
January 9, 2013	DEQ received a revised application from the applicant.
February 6, 2013	DEQ determined that the application was complete.
February 25, 2013	DEQ made available the draft permit and statement of basis for peer and regional office review.
March 18, 2013	DEQ made available the draft permit and statement of basis for applicant review.
April 4, 2013	DEQ received the permit processing fee.
April 12, 2013	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 No.	Sources	Emission Point ID No.
Cleaver Brooks Boiler Nos. 1-5 Boiler1 – Boiler5	Boiler 1 through 5 Manufacturer: Cleaver Brooks Model: CBLE-700-800 Rated Capacity: 32.659 MMBtu/hr each Fuel: Natural Gas	Exit height: 15.85 m Exit diameter: 0.61 m Exit flow rate: 18.86 m/s Exit temperature: 472.04 K
Boiler Room Make-Up Air Unit BRMAU1	Manufacturer: Rupp Air Model: RAM 225 Rated Capacity: 3,586,957 Btu/hr Fuel: Natural Gas	Exit height: 14.63 m Exit diameter: 1.27 m Exit flow rate: 15.24 m/s Exit temperature: 313 K
Lab Make-Up Air Unit LABMAU	Manufacturer: Aaron Model: RN-050 Rated Capacity: 810,000 Btu/hr Fuel: Natural Gas	Exit height: 14.63 m Exit diameter: 0.50 m Exit flow rate: 15.24 m/s Exit temperature: 313 K
Battery Make-Up Air Unit BATTMAU	Manufacturer: Rupp Air Model: RAM 222 Rated Capacity: 3,586,957 Btu/hr Fuel: Natural Gas	Exit height: 14.63 m Exit diameter: 1.27 m Exit flow rate: 15.24 m/s Exit temperature: 313 K
Main Office Roof Top Unit Heater Nos. 1-6 RTU1 – RTU6	RTU 1 through 6 Manufacturer: Carrier Model: 48A5,T,030 Rated Capacity: 525,000 Btu/hr each Fuel: Natural Gas	Exit height: 14.63 m Exit diameter: 0.50 m Exit flow rate: 15.24 m/s Exit temperature: 313 K
Meeting/RR/Plant Offices/ Maintenance Office Roof Top Unit PLANT	Manufacturer: Carrier Model: 48A5,S,020 Rated Capacity: 350,000 Btu/hr Fuel: Natural Gas	Exit height: 14.63 m Exit diameter: 0.50 m Exit flow rate: 15.24 m/s Exit temperature: 313 K
Maintenance/Part/Fab Roof Top Unit MAINT	Manufacturer: Carrier Model: 48A5,S,060 Rated Capacity: 1,164,000 Btu/hr Fuel: Natural Gas	Exit height: 14.63 m Exit diameter: 0.50 m Exit flow rate: 15.24 m/s Exit temperature: 313 K
Receiving Bay Infrared Heater Nos. 1-8 IRH1 – IRH8	Manufacturer: Reznor Model: VR-200-60 Rated Capacity: 200,000 Btu/hr Fuel: Natural Gas	Exit height: 8.53 m
Eight One Cell Cooling Towers Nos. 1-8 CT01 – CT08	Max Flow Rate: 34,140 gpm TDS Blowdown: 1500 mg/L or ppmw Drift Eliminators: 0.00005 gal drift/gal flow	Exit height: 23.47 m Exit diameter: 3.96 m Exit flow rate: 11.43 m/s Exit temperature: 300 K
Anhydrous Ammonia Refrigeration System (8 Chillers) REFRIG	Rated Capacity: 14,850 lbs	
N/A	Anaerobic Digester #1 Storage capacity: 250,000 gallons Gas generation capacity: 278,400 scf/day	N/A
N/A	Anaerobic Digester #2 Storage capacity: 250,000 gallons	N/A

	Gas generation capacity: 278,400 scf/day	
Calorix Boiler Boiler6	Boiler 6 Manufacturer: Calorix Model: Calorix Rated Capacity: 8 MMBtu/hr each Fuel: Biogas or Natural Gas	Exit height: 9 m Exit diameter: 0.36 m Exit flow rate: 11.74 m/s Exit temperature: 323.3 K
Flare	Candlestick Flare Manufacturer: Varec Model: 244W Series Heat input rating: 6.96 MMBtu/hr	Exit height: 6.6 m Exit diameter: 0.33 m Exit flow rate: 20 m/s Exit temperature: 1273 K
Emergency Generator 1 GEN1	Emergency IC Engine Manufacturer: Cummins Model: DSGAD Maximum power rating: 324 hp Fuel: ULSD	Exit height: 3.05 m Exit diameter: 0.20 m Exit flow rate: 47.34 m/s Exit temperature: 679 K
Emergency Generator 2 GEN2	Emergency IC Engine Manufacturer: Caterpillar Model: CAT C15ATAAC Maximum power rating: 469 hp Fuel: ULSD	Exit height: 3.05 m Exit diameter: 0.20 m Exit flow rate: 121.6 m/s Exit temperature: 689 K

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 five natural gas-fired boilers, one natural gas or biogas boiler, three natural gas-fired make-up air units, eight natural gas-fired roof top unit heaters, eight natural gas-fired infrared heaters, eight one cell cooling towers, one anhydrous ammonia refrigeration system, one flare, and two emergency IC engines at the facility (see Appendix A) associated with this proposed project. Emissions estimates of criteria pollutants, greenhouse gases (GHG), hazardous air pollutants (HAP), and toxic air pollutants (TAP) were based on emission factors from AP-42, vendor information, South Coast Air Quality Management District, manufacturer data, operation of 8,760 hours per year, and process information specific to the facility for this project.

Pre-Project Potential to Emit

Pre-project Potential to Emit is used to establish the change in emissions at a facility as a result of this project.

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]
Boiler1	0.33	1.45	0.02	0.09	2.32	10.16	1.18	5.17	0.13	0.57	3851.20	16,868.25
Boiler2	0.33	1.45	0.02	0.09	2.32	10.16	1.18	5.17	0.13	0.57	3851.20	16,868.25
Boiler3	0.33	1.45	0.02	0.09	2.32	10.16	1.18	5.17	0.13	0.57	3851.20	16,868.25
Boiler4	0.33	1.45	0.02	0.09	2.32	10.16	1.18	5.17	0.13	0.57	3851.20	16,868.25
Boiler5	0.33	1.45	0.02	0.09	2.32	10.16	1.18	5.17	0.13	0.57	3851.20	16,868.25
BRMAU1	0.03	0.13	0.002	0.01	0.35	1.53	0.30	1.31	0.02	0.09	423.01	1,852.79
LABMAU	0.009	0.04	0.0005	0.002	0.08	0.35	0.07	0.31	0.005	0.02	95.52	418.36
BATTMAU	0.03	0.13	0.002	0.01	0.35	1.53	0.30	1.31	0.02	0.09	423.01	1,852.79
RTU1	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
RTU2	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
RTU3	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
RTU4	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
RTU5	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
RTU6	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
PLANT	0.002	0.01	0.0002	0.0009	0.03	0.13	0.03	0.13	0.002	0.01	41.26	180.70
MAINT	0.009	0.04	0.0007	0.003	0.11	0.48	0.10	0.44	0.009	0.04	137.24	601.10
IRH1	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH2	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH3	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH4	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH5	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH6	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH7	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH8	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
CT01-CT08	0.25	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REFRIG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pre-Project Totals	**2.03**	**8.90**	**0.11**	**0.49**	**12.98**	**56.86**	**7.10**	**31.15**	**0.73**	**3.20**	**20936.24**	**91700.85**

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.

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]
Boiler1	0.33	1.45	0.02	0.09	2.32	10.16	1.18	5.17	0.13	0.57	3851.20	16,868.25
Boiler2	0.33	1.45	0.02	0.09	2.32	10.16	1.18	5.17	0.13	0.57	3851.20	16,868.25
Boiler3	0.33	1.45	0.02	0.09	2.32	10.16	1.18	5.17	0.13	0.57	3851.20	16,868.25
Boiler4	0.33	1.45	0.02	0.09	2.32	10.16	1.18	5.17	0.13	0.57	3851.20	16,868.25
Boiler5	0.33	1.45	0.02	0.09	2.32	10.16	1.18	5.17	0.13	0.57	3851.20	16,868.25
Boiler6	0.06	0.30	3.95	17.30	0.39	1.70	0.66	2.90	0.04	0.20	938.17	4109.19
BRMAU1	0.03	0.13	0.002	0.01	0.35	1.53	0.30	1.31	0.02	0.09	423.01	1,852.79
LABMAU	0.009	0.04	0.0005	0.002	0.08	0.35	0.07	0.31	0.005	0.02	95.52	418.36
BATTMAU	0.03	0.13	0.002	0.01	0.35	1.53	0.30	1.31	0.02	0.09	423.01	1,852.79
RTU1	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
RTU2	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
RTU3	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
RTU4	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
RTU5	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
RTU6	0.005	0.02	0.0003	0.0013	0.05	0.22	0.04	0.18	0.002	0.01	61.94	271.31
PLANT	0.002	0.01	0.0002	0.0009	0.03	0.13	0.03	0.13	0.002	0.01	41.26	180.70
MAINT	0.009	0.04	0.0007	0.003	0.11	0.48	0.10	0.44	0.009	0.04	137.24	601.10
IRH1	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH2	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH3	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH4	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH5	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH6	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH7	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
IRH8	0.002	0.01	0.0001	0.0005	0.02	0.09	0.02	0.09	0.001	0.0047	23.57	103.25
CT01-CT08	0.25	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
REFRIG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FLARE	0.04	0.18	3.38	14.80	0.24	1.05	1.30	5.69	0.21	0.92	575.97	2522.73
GEN1	0.11	0.01	0.01	0.0005	2.14	0.11	1.86	0.09	0.04	0.002	36.61	160.33
GEN2	0.05	0.003	0.006	0.0003	3.46	0.17	0.52	0.03	0.04	0.002	37.39	163.77
Post Project Totals	**2.28**	**9.39**	**7.45**	**32.59**	**19.21**	**59.89**	**11.44**	**39.86**	**1.06**	**4.32**	**22524.38**	**98656.87**

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.

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
Pre-Project Potential to Emit	2.03	8.90	0.11	0.49	12.98	56.86	7.10	31.15	0.73	3.20	20936.24	91700.85
Post Project Potential to Emit	2.28	9.39	7.45	32.59	19.21	59.89	11.44	39.86	1.06	4.32	22524.38	98656.87
Changes in Potential to Emit	**0.26**	**0.49**	**7.34**	**32.10**	**6.23**	**3.03**	**4.34**	**8.71**	**0.33**	**1.12**	**1588.14**	**6956.02**

Non-Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of non-carcinogenic toxic air pollutants (TAP) is provided in the following table.

Pre- and post-project, as well as the change in, non-carcinogenic TAP emissions are presented in the following table:

Table 5 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR NON-CARCINOGENIC TOXIC AIR POLLUTANTS

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Post Project 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Change in 24-hour Average Emissions Rates for Units at the Facility (lb/hr)	Non-Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Ammonia	0.00	4.00E-02	4.00E-02	1.2	No
Acrolein	0.00	7.33E-04	7.33E-04	0.017	No
Barium	7.60E-04	7.94E-04	3.40E-05	0.033	No
Cobalt	1.45E-05	1.52E-05	7.00E-07	0.0033	No
Copper	1.47E-04	1.53E-04	6.00E-06	0.013	No
Hexane	2.68E-01	3.26E-01	5.80E-02	12	No
Hydrogen Sulfide	0.00	2.00E-01	2.00E-01	0.933	No
Manganese	6.57E-05	6.87E-05	3.00E-06	0.067	No
Molybdenum	1.90E-04	1.98E-04	8.00E-06	0.333	No
Pentane	4.50E-01	4.73E-01	2.26E-02	118	No
Selenium	4.14E-06	4.33E-06	1.90E-07	0.013	No
Toluene	5.90E-04	3.86E-03	3.27E-03	25	No
Vanadium	3.97E-04	4.15E-04	1.80E-05	0.003	No
Xylenes	0.00	2.26E-03	2.26E-03	29	No
Zinc	5.00E-03	5.23E-03	2.30E-04	0.333	No

None of the PTEs for non-carcinogenic TAP were exceeded as a result of this project. Therefore, modeling is not required for any non-carcinogenic TAP because none of the 24-hour average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

Carcinogenic TAP Emissions

A summary of the estimated PTE for emissions increase of carcinogenic toxic air pollutants (TAP) is provided in the following table.

Table 6 PRE- AND POST PROJECT POTENTIAL TO EMIT FOR CARCINOGENIC TOXIC AIR POLLUTANTS

Carcinogenic Toxic Air Pollutants	Pre-Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Post Project Annual Average Emissions Rates for Units at the Facility (lb/hr)	Change in Annual Average Emissions Rates for Units at the Facility (lb/hr)	Carcinogenic Screening Emission Level (lb/hr)	Exceeds Screening Level? (Y/N)
Acetaldehyde	0.00	6.08E-03	6.08E-03	3.0E-03	Yes
Arsenic	3.46E-05	3.62E-05	1.60E-06	1.5E-06	Yes
Benzene	3.64E-04	8.74E-03	8.38E-03	8.0E-04	Yes
Benzo(a)pyrene	2.08E-07	2.17E-07	9.00E-09	2.0E-06	No
Beryllium	2.08E-06	2.17E-06	9.00E-08	2.8E-05	No
1,3-Butadiene	0.00	3.10E-04	3.10E-04	2.4E-05	Yes
Cadmium	1.90E-04	1.99E-04	9.00E-06	3.7E-06	Yes
Chromium	2.42E-04	2.53E-04	1.10E-05	3.3E-02	No
Formaldehyde	1.30E-02	2.98E-02	1.68E-02	5.1E-04	Yes
3-Methylchloranthrene	3.12E-07	3.26E-07	1.40E-08	2.5E-06	No
Naphthalene	1.06E-04	1.49E-04	4.30E-05	9.1E-05	No
Nickel	3.64E-04	3.80E-04	1.60E-05	2.7E-05	No
PAH[b]	0.00	1.12E-04	1.12E-04	9.1E-05	Yes
POM (7-PAH)[a]	1.99E-06	2.08E-06	9.00E-08	2.0E-06	No

a) Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. The total is compared to benzo(a)pyrene.

b) Polynuclear Aromatic Hydrocarbons (PAH) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,l)perylene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene.

Several of the PTEs for carcinogenic TAP were exceeded as a result of this project. The TAP emissions are conservative estimates of emissions from the facility's natural gas combustion sources and not from the production process. Therefore, modeling is required for acetaldehyde, arsenic, benzene, 1,3-butadiene, cadmium, formaldehyde, and PAH because the annual average carcinogenic screening ELs identified in IDAPA 58.01.01.586 were exceeded.

Post Project HAP Emissions

The following table presents the post project potential to emit for HAP 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 7 HAZARDOUS AIR POLLUTANTS EMISSIONS POTENTIAL TO EMIT SUMMARY

Hazardous Air Pollutants	PTE (T/yr)
Benzene	6.23E-03
1,3-Butadiene	1.55E-05
3-Methylchloranthrene	1.43E-06
Benzo(a)pyrene	1.03E-06
Formaldehyde	0.09
Hexane	1.43
Naphthalene	4.87E-04
Toluene	2.87E-03
2-Methylnapthalene	1.83E-05
7,12-Dimethylbenz(a)anthracene	1.22E-05
Acenaphthene	1.37E-06
Acenaphyhylene	1.37E-06
Acetaldehyde	3.05E-04
Acrolein	3.67E-05
Anthracene	1.83E-06
Dichlorobenzene	9.13E-04
Flouranthene	2.28E-06
Fluorene	2.13E-06
Phenanthrene	1.29E-05
Xylenes	1.13E-04
Benzo(a)anthracene	2.10E-06
Benzo(b)fluoranthene	1.47E-06
Benzo(g,h,i)perylene	1.11E-06
Benzo(k)fluoranthene	1.49E-06
Chrysene	1.57E-06
Dibenzo(a,h)anthracene	1.19E-06
Indeno(1,2,3-cd)pyrene	1.58E-06
Mercury	2.07E-04
Arsenic	1.59E-04
Nickel	1.67E-03
Beryllium	9.54E-06
Cadmium	8.75E-04
Chromium	1.11E-03
Cobalt	6.70E-05
Manganese	3.02E-04
Molybdenum	8.75E-04
Selenium	1.91E-05
Totals	**1.54**

Ambient Air Quality Impact Analyses

As presented in the Modeling Memo in Appendix B, the estimated emission rates of $PM_{2.5}$, SO_2, NO_x, and TAPs from this project were 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 Twin Falls 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.

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 the 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 2.4, 3.4, 4.4, and 5.4.

Rules for Control of Odors (IDAPA 58.01.01.775)

IDAPA 58.01.01.750 .....Rules for Control of Odors

Section 776.01 states that no person shall allow, suffer, cause, or permit the emission of odorous gases, liquids, or solids into the atmosphere in such quantities as to cause air pollution. These requirements are assured by Permit Condition 2.7 and 3.3.

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[1] Criteria pollutant thresholds in Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002.

Standards for New and Minor Sources (IDAPA 58.01.01.676-677)

IDAPA 58.01.01.676.....Standards for New Sources

New fuel burning equipment located at this facility, with a maximum rated input of ten (10) million BTU per hour or more, and minor fuel burning equipment with a maximum rated input of less than ten million BTU per hour, are subject to a particulate matter limitation of 0.015 gr/dscf of effluent gas corrected to 3% oxygen by volume when combusting gaseous fuels. Fuel-Burning Equipment is defined as any furnace, boiler, apparatus, stack and all appurtenances thereto, used in the process of burning fuel for the primary purpose of producing heat or power by indirect heat transfer. This requirement is assured by Permit Condition 2.3.

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.

NSPS Applicability (40 CFR 60)

The facility is subject to the requirements of 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE). The two emergency IC engines are a 175 kW Cummins diesel CI engine manufactured in 2011and a 350 kW Caterpillar diesel CI engine manufactured in 2012.

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

§ 60.4200 *Am I subject to this Subpart?*

(a) The provisions of this Subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (3) of this section. For the purposes of this Subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are:

(i) Manufactured after April 1, 2006 and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005.

(b) The provisions of this Subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

(c) If you are an owner or operator of an area source subject to this Subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this Subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this Subpart applicable to area sources.

(d) Stationary CI ICE may be eligible for exemption from the requirements of this Subpart as described in 40 CFR part 1068, Subpart C (or the exemptions described in 40 CFR part 89, Subpart J and 40 CFR part 94, Subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

Both IC engines are new engines which will be constructed after July 11, 2005. Therefore the engines are subject to the Subpart.

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

The permittee is not the manufacturer of the engines and therefore this requirement is not applicable.

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

The permittee is not the manufacturer of the engines. Therefore, this requirement is not applicable.

§ 60.4203 How long must my engines meet the emission standards if I am a stationary CI internal combustion engine manufacturer?

The permittee is not the manufacturer of the engines and therefore this requirement is not applicable.

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

The IC engines are emergency engines and therefore this requirement is not applicable.

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

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 to this subpart. Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

The IC engines must comply with the emission standards for new nonroad CI engines in §60.4202.

The subpart requires that the permittee comply with Table 1 per 40 CFR 89.112.

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

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

The permittee must operate the IC engines for the life of the units in accordance with manufacturer-approved methods.

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

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this Subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this Subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for non-road diesel fuel.

The permittee has stated that they will operate the IC engines in accordance with 40 CFR 80.510(b). The fuel sulfur content cannot exceed 15 ppm or 0.0015% by weight. All emissions calculations assume that percentage.

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

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.

A non-resettable hour meter shall be installed on the IC engines.

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

The permittee is not the manufacturer of the IC engines and therefore this requirement is not applicable.

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

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in §60.4204(b) or §60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this Subpart and must comply with the emission standards specified in §60.4205(c), you must comply by purchasing an engine certified to the emission standards in §60.4204(b), or §60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's specifications.

The permittee is subject to 60.4205(b), therefore the IC engines must be installed and configured according to the manufacturer's specifications.

(f) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Emergency stationary ICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. For owners and operators of emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in this section, is prohibited.

Maintenance and testing of the IC engines shall not exceed 100 hours per year.

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

A performance test on the IC engines is not required and therefore this requirement is not applicable.

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

A performance test on the IC engines is not required and the engines are less than 30 liters per cylinder. Therefore this requirement is not applicable.

§ 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

The IC engines do not meet the criteria set forth in the subpart requiring notification unless they are uncertified.

The facility is subject to the requirements of 40 CFR 60 Subpart Dc – Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units.

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

The five Cleaver-Brooks boilers at this facility only combust natural gas as fuel. Therefore, the only sections of this subpart that are applicable to the five boilers at this facility are the Applicability and Delegation of Authority specified in § CFR 60.40c(a), the Recordkeeping requirements of § CFR 60.48c(g) and (i), and the Reporting requirements of § CFR 60.48c(a), (a)(1), and (a)(3). The new Calorix boiler is not subject to the subpart as the capacity of the boiler is less than 10 MMBTU per hour.

§ 60.40c Applicability and delegation of authority

(a) Except as provided in paragraphs (d), (e), (f), and (g) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, §60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units that meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in §60.41c.

The five Cleaver-Brooks natural gas-fired boilers are rated at between 10 MMBtu/hr and 100 MMBtu/hr and were constructed after June 9, 1989. Therefore, these five natural gas-fired boilers are subject to some of the requirements of this subpart.

§ 60.41c Definitions

The definitions of this section apply to the five Cleaver-Brooks natural gas-fired boilers at this facility.

§ 60.48c Reporting and recordkeeping requirements

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by §60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §60.42c, or §60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

Section (a) requires that the facility submit notification of the date of construction and actual startup, as provided by §60.7 of this part. This notification shall include the design heat input capacity, fuels to be combusted, and the anticipated operating annual capacity factor based on each individual fuel fired.

(g)(1) 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.

(2) 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_2standard, 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.

(3) 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_2standard, 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.

Section (g) requires that the facility maintain records of the amount of fuel combusted in each boiler during each calendar month or the total amount of natural gas delivered to the facility each calendar month.

(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.

Section (i) requires that the facility maintain records for two years following the date of such record.

NESHAP Applicability (40 CFR 61)

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

MACT Applicability (40 CFR 63)

Because the facility has cooling towers, boilers, heaters, and internal combustion engines, the following MACT requirements may apply to this facility:

- 40 CFR 63, Subpart Q – National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers
- 40 CFR 63, Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters
- 40 CFR 63, Subpart JJJJJJ – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

- 40 CFR 63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines

Please refer to the Statement of Basis for P-2012.0003 PROJ 60981 issued May 4, 2012 for a breakdown of the non-applicability of Subparts Q, DDDDD, and JJJJJ. Because the two internal combustion engines are subject to 40 CFR 60, Subpart IIII, they demonstrate compliance with 40 CFR 63, Subpart ZZZZ by complying with 40 CFR 60, Subpart IIII.

Permit Conditions Review

This section describes the permit conditions that have been added, revised, modified or deleted as a result of this permitting action.

Permit Condition 3.1 provides a process description of the anaerobic digester process and Calorix Boiler at this facility.

Permit Condition 3.2 provides a description of the control devices used on the anaerobic digester equipment and Calorix boiler at this facility.

Permit Condition 3.3 establishes that there are to be no emissions of odorous gases, liquids, or solids from the anaerobic digester operations into the atmosphere in such quantities that cause air pollution.

Permit Condition 3.4 establishes a 20% opacity limit for the Calorix Boiler or functionally equivalent openings associated with the Calorix Boiler.

Permit Condition 3.5 establishes that average annual concentration of hydrogen sulfide (H_2S) of the biogas entering the flare or Calorix boiler shall not exceed 4,000 ppmv. The H_2S concentration limitation was proposed by the Applicant and was subsequently used during the ambient air quality modeling analysis.

Permit Condition 3.6 establishes a daily biogas production limit for the anaerobic digester operations as proposed by the Applicant.

Permit Condition 3.7 establishes that biogas produced from the on-site anaerobic digesters shall only be combusted in the Candlestick Flare or the Calorix Boiler but not simultaneously as proposed by the Applicant.

Permit Condition 3.8 establishes that the Calorix Boiler shall combust only biogas or natural gas as proposed by the Applicant.

Permit Condition 3.9 establishes that the permittee monitor and record odor complaints to demonstrate compliance with odor permit condition.

Permit Condition 3.10 establishes the opacity monitoring for the Calorix Boiler.

Permit Condition 3.11 establishes that the permittee monitor biogas H_2S concentration to demonstrate compliance with H_2S concentration limit permit condition.

Permit Condition 3.12 establishes that the permittee monitor biogas production to demonstrate compliance with biogas combustion limit permit condition.

Permit Condition 4.1 provides a process description of the candlestick flare process at this facility.

Permit Condition 4.2 provides a description of the control devices used on the candlestick flare equipment at this facility.

Permit Condition 4.3 establishes hourly and annual emissions limits for PM_{10}, SO_2, NO_X, CO, and VOC emissions from the candlestick flare at this facility.

Permit Condition 4.4 establishes a 20% opacity limit for the Candlestick Flare or functionally equivalent openings associated with the Candlestick Flare.

Permit Condition 4.5 establishes that the Candlestick Flare shall have a flare ignition system in order to assure proper operation of the flare.

Permit Condition 4.6 establishes that the Candlestick Flare shall only combust biogas as fuel as proposed by the Applicant.

Permit Condition 4.7 establishes that the flare ignition system must be monitored using an ultraviolet beam sensor, infrared sensor, or an alternative equivalent device to demonstrate compliance with flare ignition system permit condition.

Permit Condition 4.8 establishes the opacity monitoring for the Candlestick Flare.

Permit Condition 5.1 provides a process description of the diesel-fired emergency standby IC engines at this facility.

Permit Condition 5.2 provides a description of the control devices used on the diesel-fired emergency standby IC engines at this facility.

Permit Condition 5.3 establishes hourly and annual emissions limits for PM_{10}, SO_2, NO_X, CO, and VOC emissions from the IC Engines at this facility.

Permit Condition 5.4 establishes a 20% opacity limit for the IC Engines stack or functionally equivalent openings associated with the IC Engines.

Permit Condition 5.5 establishes that the IC Engines shall only combust diesel fuel oil with a maximum sulfur content of 0.0015% (15 ppm) by weight as fuel as proposed by the Applicant.

Permit Condition 5.6 establishes weekly and annual hourly operational limits for the IC Engines as proposed by the Applicant. The weekly and annual hourly operational limits were proposed by the Applicant and were subsequently used during the ambient air quality modeling analysis.

Permit Condition 5.7 establishes operation and maintenance requirements for the IC Engines as required by 40 CFR 60, IIII for Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

Permit Condition 5.8 establishes engine replacement requirements for the IC Engines as required by 40 CFR 60, IIII for Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

Permit Condition 5.9 establishes that the IC Engines be equipped with a non-resettable hour meter as required by 40 CFR 60, IIII for Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

Permit Condition 5.10 establishes that the federal requirements of 40 CFR Part 60 are incorporated by reference into the requirements of this permit per current DEQ guidance.

Permit Condition 5.11 incorporates 40 CFR 60, Subpart A – General Provisions.

Permit Condition 5.12 establishes that the permittee monitor and record weekly operation of the IC Engines to demonstrate compliance with the IC Engine operating limit permit condition.

Permit Condition 5.13 establishes that the permittee shall maintain delivery receipts showing the percent sulfur content by weight for each shipment of fuel oil to demonstrate compliance with the fuel oil sulfur content permit condition.

Permit Condition 5.14 establishes that the permittee shall maintain records of the operation and maintenance of the IC engine to demonstrate compliance with the operation and maintenance permit condition.

Permit Condition 5.15 establishes the opacity monitoring for the IC engine stack.

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

AgroFarma Twin Falls - Chobani Facility Baseline Emission Estimate Summary

Criteria Pollutants		PM_{10}[1]		$PM_{2.5}$[1]		NOx		SO_2		CO		VOC		Lead		HAPs		GHGs - CO2e	
Emissions Unit Name	Stack ID	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	Short ton/year
Cleaver Brooks CBLE-700-800 NG Boiler 1	BOILER1	0.33	1.45	0.33	1.45	2.32	10.16	0.02	0.09	1.18	5.17	0.13	0.57	1.60E-05	7.01E-05	0.06	0.26	3851.20	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 2	BOILER2	0.33	1.45	0.33	1.45	2.32	10.16	0.02	0.09	1.18	5.17	0.13	0.57	1.60E-05	7.01E-05	0.06	0.26	3851.20	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 3	BOILER3	0.33	1.45	0.33	1.45	2.32	10.16	0.02	0.09	1.18	5.17	0.13	0.57	1.60E-05	7.01E-05	0.06	0.26	3851.20	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 4	BOILER4	0.33	1.45	0.33	1.45	2.32	10.16	0.02	0.09	1.18	5.17	0.13	0.57	1.60E-05	7.01E-05	0.06	0.26	3851.20	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 5	BOILER5	0.33	1.45	0.33	1.45	2.32	10.16	0.02	0.09	1.18	5.17	0.13	0.57	1.60E-05	7.01E-05	0.06	0.26	3851.20	16,868.24
Boiler Room MAU 1 - Rupp Air RAM 225 (50,000 cfm, direct fired)	BRMAU 1	0.03	0.13	0.03	0.13	0.35	1.53	0.002	0.01	0.30	1.31	0.02	0.09	1.76E-06	7.71E-06	0.01	0.03	423.01	1,852.79
Lab MAU - Aaron RN-050 (6,000 cfm, indirect fired RTU)	LABMAU	0.01	0.04	0.01	0.04	0.08	0.35	0.0005	0.002	0.07	0.31	0.004	0.02	3.97E-07	1.74E-06	1.51E-03	0.01	95.52	418.36
Battery MAU - Rupp Air RAM 222 (42,000 cfm, direct fired)	BATTMAU	0.03	0.13	0.03	0.13	0.35	1.53	0.002	0.01	0.30	1.31	0.02	0.09	1.76E-06	7.71E-06	0.01	0.03	423.01	1,852.79
Main Office RTU 1 - Carrier 48A5,T,030 (indirect fired)	RTU1	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	2.57E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Main Office RTU 2 - Carrier 48A5,T,030 (indirect fired)	RTU2	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	2.57E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Main Office RTU 3 - Carrier 48A5,T,030 (indirect fired)	RTU3	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	2.57E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Main Office RTU 4 - Carrier 48A5,T,030 (indirect fired)	RTU4	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	2.57E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Main Office RTU 5 - Carrier 48A5,T,030 (indirect fired)	RTU5	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	2.57E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Main Office RTU 5 - Carrier 48A5,T,030 (indirect fired)	RTU6	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	1.72E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Meeting/RR/Plant Offices/Maintenance Office RTU - Carrier 48A5,S,020 (indirect fired)	PLANT	0.003	0.01	0.003	0.01	0.03	0.13	0.0002	0.0009	0.03	0.13	0.002	0.01	1.72E-07	7.53E-07	6.47E-04	2.83E-03	41.26	180.70
Maintenance/Parts/Fab RTU - Carrier 48A5,S,060 (indirect fired)	MAINT	0.01	0.04	0.01	0.04	0.11	0.48	0.0007	0.003	0.10	0.44	0.01	0.04	5.71E-07	2.50E-06	2.16E-03	0.01	137.24	601.10
Reznor VR-2—60 Receiving Bay IRH 1	IRH1	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 2	IRH2	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 3	IRH3	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 4	IRH4	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 5	IRH5	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 6	IRH6	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 7	IRH7	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 8	IRH8	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
8 One Cell Cooling Towers	CT01-CT8	0.25	1.10	0.25	1.10	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Anhydrous Ammonia Refrigeration System (8 Chillers)	REFRIG	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Baseline Totals		2.02	8.90	2.02	8.90	12.98	56.86	0.11	0.49	7.10	31.15	0.73	3.20	8.69E-05	3.81E-04	0.33	1.42	20,936.24	91,700.80

[1]Assumes $PM_{2.5}$ and PM_{10} emissions are equal to PM emissions.

AgroFarma Twin Falls - Chobani Changes in Potential to Emit for Regulated Air Pollutants

Source	PM_{10}		$PM_{2.5}$		NOx		SO_2		CO		VOC		Lead		HAPs		GHGs - CO2e	
	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	Short ton/year
Pre-Project Facility Total	2.02	8.90	2.02	8.90	12.98	56.86	0.11	0.49	7.10	31.15	0.73	3.20	8.69E-05	3.81E-04	0.33	1.42	20,936.24	91,700.80
Post Project Totals	2.28	9.39	4.31	9.49	19.21	59.89	7.45	32.59	11.44	39.86	1.06	4.32	9.08E-05	3.98E-04	0.58	1.51	22,524.38	98,656.82
Changes to Potential to Emit	0.26	0.49	2.29	0.59	6.23	3.03	7.34	32.10	4.34	8.71	0.33	1.12	3.90E-06	1.70E-05	0.25	0.09	1,588.14	6,956.02

AgroFarma Twin Falls - Chobani New Facility Baseline Emission Estimate Summary

Emissions Unit Name	Stack ID	PM_{10}[1]		$PM_{2.5}$[1]		NOx		SO_2		CO		VOC		Lead		HAPs		GHGs - CO2e	
		lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	ton/year	lb/hour	Short ton/year
Cleaver Brooks CBLE-700-800 NG Boiler 1	BOILER1	0.33	1.45	0.33	1.45	2.32	10.16	0.02	0.09	1.18	5.17	0.13	0.57	1.60E-05	7.01E-05	0.06	0.26	3851.20	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 2	BOILER2	0.33	1.45	0.33	1.45	2.32	10.16	0.02	0.09	1.18	5.17	0.13	0.57	1.60E-05	7.01E-05	0.06	0.26	3851.20	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 3	BOILER3	0.33	1.45	0.33	1.45	2.32	10.16	0.02	0.09	1.18	5.17	0.13	0.57	1.60E-05	7.01E-05	0.06	0.26	3851.20	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 4	BOILER4	0.33	1.45	0.33	1.45	2.32	10.16	0.02	0.09	1.18	5.17	0.13	0.57	1.60E-05	7.01E-05	0.06	0.26	3851.20	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 5	BOILER5	0.33	1.45	0.33	1.45	2.32	10.16	0.02	0.09	1.18	5.17	0.13	0.57	1.60E-05	7.01E-05	0.06	0.26	3851.20	16,868.24
Calorix Dual Gas Boiler	BOILER6	0.06	0.30	0.06	0.30	0.39	1.70	3.95	17.30	0.66	2.90	0.04	0.20	3.92E-06	1.72E-05	0.01	0.06	938.17	4,109.19
Boiler Room MAU 1 - Rupp Air RAM 225 (50,000 cfm, direct fired)	BRMAU 1	0.03	0.13	0.03	0.13	0.35	1.53	0.002	0.01	0.30	1.31	0.02	0.09	1.76E-06	7.71E-06	0.01	0.03	423.01	1,852.79
Lab MAU - Aaron RN-050 (6,000 cfm, indirect fired RTU)	LABMAU	0.01	0.04	0.01	0.04	0.08	0.35	0.0005	0.002	0.07	0.31	0.004	0.02	3.97E-07	1.74E-06	1.51E-03	0.01	95.52	418.36
Battery MAU - Rupp Air RAM 222 (42,000 cfm, direct fired)	BATTMAU	0.03	0.13	0.03	0.13	0.35	1.53	0.002	0.01	0.30	1.31	0.02	0.09	1.76E-06	7.71E-06	0.01	0.03	423.01	1,852.79
Main Office RTU 1 - Carrier 48A5,T,030 (indirect fired)	RTU1	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	2.57E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Main Office RTU 2 - Carrier 48A5,T,030 (indirect fired)	RTU2	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	2.57E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Main Office RTU 3 - Carrier 48A5,T,030 (indirect fired)	RTU3	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	2.57E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Main Office RTU 4 - Carrier 48A5,T,030 (indirect fired)	RTU4	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	2.57E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Main Office RTU 5 - Carrier 48A5,T,030 (indirect fired)	RTU5	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	2.57E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Main Office RTU 5 - Carrier 48A5,T,030 (indirect fired)	RTU6	0.004	0.02	0.004	0.02	0.05	0.22	0.0003	0.0014	0.04	0.18	0.003	0.01	1.72E-07	1.13E-06	9.72E-04	4.27E-03	61.94	271.31
Meeting/RR/Plant Offices/Maintenance Office RTU - Carrier 48A5,S,020 (indirect fired)	PLANT	0.003	0.01	0.003	0.01	0.03	0.13	0.0002	0.0009	0.03	0.13	0.002	0.01	1.72E-07	7.53E-07	6.47E-04	2.83E-03	41.26	180.70
Maintenance/Parts/Fab RTU - Carrier 48A5,S,060 (indirect fired)	MAINT	0.01	0.04	0.01	0.04	0.11	0.48	0.0007	0.003	0.10	0.44	0.01	0.04	5.71E-07	2.50E-06	2.15E-03	0.01	137.24	601.10
Reznor VR-2—60 Receiving Bay IRH 1	IRH1	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 2	IRH2	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 3	IRH3	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 4	IRH4	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 5	IRH5	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 6	IRH6	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 7	IRH7	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
Reznor VR-2—60 Receiving Bay IRH 8	IRH8	0.001	0.01	0.001	0.01	0.02	0.09	0.0001	0.0005	0.02	0.09	0.001	0.0047	9.80E-08	4.29E-07	3.70E-04	1.63E-03	23.57	103.25
8 One Cell Cooling Towers	CT01-CT8	0.25	1.10	0.25	1.10	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Anhydrous Ammonia Refrigeration System (8 Chillers)	REFRIG	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Flare	FLARE	0.04	0.18	0.04	0.18	0.24	1.05	3.38	14.80	1.30	5.69	0.21	0.92			0.21	0.03	575.97	2,522.73
Emergency Generator 1	GEN1	0.11	0.01	2.14	0.11	2.14	0.11	0.01	5.00E-04	1.86	0.09	0.04	0.002	–	–	0.01	1.00E-03	36.61	160.33
Emergency Generator 2	GEN2	0.05	0.003	0.05	0.003	3.46	0.17	0.006	2.80E-04	0.52	0.03	0.04	0.002	–	–	1.50E-02	7.44E-04	37.39	163.77
Post Project Totals		2.28	9.39	4.31	9.49	19.21	59.89	7.45	32.59	11.44	39.36	1.06	4.32	9.08E-05	3.98E-04	0.59	1.51	22,524.38	98,656.52

[1]Assumes $PM_{2.5}$ and PM_{10} emissions are equal to PM emissions.

AgroFarma Twin Falls - Chobani Pre and Post Project Potential to Emit for Non-Carcinogenic and Carcinogenic Toxic Air Pollutants

Non-Carcinogenic Toxic Air Pollutants	Pre-Project 24 Hour Average Emission Rates (lb/hour)	Post Project 24 Hour Average Emission Rates (lb/hour)	Change in 24 Hour Average Emission Rates (lb/hour)	Screening Level	Exceeds Screening Level (Y/N)
Ammonia	0.00E+00	4.00E-02	4.00E-02	1.2	No
Acrolein	0.00E+00	7.33E-04	7.33E-04	0.017	No
Pentane	4.50E-01	6.16E-04	-4.49E-01	1.18E+02	No
Hexane	2.68E-01	3.26E-01	5.80E-02	1.20E+01	No
Hydrogen Sulfide	0.00E+00	2.00E-01	2.00E-01	9.33E-01	No
Toluene	5.90E-04	3.86E-03	3.27E-03	2.50E+01	No
Cobalt	1.45E-05	1.52E-05	7.00E-07	3.30E-03	No
Manganese	6.57E-05	6.87E-05	3.00E-06	6.70E-02	No
Molybdenum	1.90E-04	1.98E-04	8.00E-06	3.33E-01	No
Selenium	4.14E-06	4.33E-06	1.90E-07	1.30E-02	No
Vanadium	3.97E-04	4.15E-04	1.80E-05	3.00E-03	No
Xylenes	0.00E+00	2.26E-03	2.26E-03	2.90E+01	No
Zinc	5.00E-03	5.23E-03	2.30E-04	3.33E-01	No
Barium	7.60E-04	7.94E-04	3.40E-05	3.30E-02	No
Copper	1.47E-04	1.53E-04	6.00E-06	1.30E-02	No

Carcinogenic Toxic Air Pollutants	Pre-Project Annual Average Emission Rates (lb/hour)	Post Project Annual Average Emission Rates (lb/hour)	Change in Annual Average Emission Rates (lb/hour)	Screening Level	Exceeds Screening Level (Y/N)
Acetaldehyde	0.00E+00	6.08E-03	6.08E-03	3.00E-03	Yes
Benzene	3.64E-04	8.74E-03	8.38E-03	8.00E-04	Yes
1,3-Butadiene	0.00E+00	3.10E-04	3.10E-04	2.40E-05	Yes
3-Methylchloranthrene	3.12E-07	3.26E-07	1.40E-08	2.50E-06	No
Benzo(a)pyrene*	2.08E-07	2.17E-07	9.00E-09	2.00E-06	No
Formaldehyde	1.30E-02	2.98E-02	1.68E-02	5.10E-04	Yes
POM (7-PAH)[4]	1.99E-06	2.08E-06	9.00E-08	2.00E-06	Yes
PAH	0.00E+00	1.12E-04	1.12E-04	9.10E-05	Yes
Arsenic	3.46E-05	3.62E-05	1.60E-06	1.50E-06	Yes
Nickel	3.64E-04	3.80E-04	1.60E-05	2.75E-05	Yes
Beryllium	2.08E-06	2.17E-06	9.00E-08	2.80E-05	No
Cadmium	1.90E-04	1.99E-04	9.00E-06	3.70E-06	Yes
Chromium	2.42E-04	2.53E-04	1.10E-05	3.30E-02	No
Naphthalene	1.06E-04	1.49E-04	4.30E-05	9.10E-05	Yes

AgroFarma Twin Falls - Chobani Facility Baseline Emission Estimate Summary

Toxic Air Pollutant Emissions Inventory

Non-Carcinogenic Toxic Air Pollutants (sum of all emissions)	Ammonia	Acrolein	Pentane	Hexane	Hydrogen Sulfide	Naphthalene (Carcinogen)	Toluene	Cobalt	Manganese	Molybdenum	Selenium	Vanadium	Xylenes	Zinc	Barium	Copper
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Cleaver Brooks Boiler 1	–		8.32E-02	5.76E-02		1.95E-05	1.09E-04	2.63E-06	1.22E-05	3.62E-05	7.63E-07	7.36E-05		9.28E-04	1.41E-04	2.72E-05
Cleaver Brooks Boiler 2	–		8.32E-02	5.76E-02		1.95E-05	1.09E-04	2.63E-06	1.22E-05	3.62E-05	7.63E-07	7.36E-05		9.28E-04	1.41E-04	2.72E-05
Cleaver Brooks Boiler 3	–		8.32E-02	5.76E-02		1.95E-05	1.09E-04	2.63E-06	1.22E-05	3.62E-05	7.63E-07	7.36E-05		9.28E-04	1.41E-04	2.72E-05
Cleaver Brooks Boiler 4	–		8.32E-02	5.76E-02		1.95E-05	1.09E-04	2.63E-06	1.22E-05	3.62E-05	7.63E-07	7.36E-05		9.28E-04	1.41E-04	2.72E-05
Cleaver Brooks Boiler 5	–		8.32E-02	5.76E-02		1.95E-05	1.09E-04	2.63E-06	1.22E-05	3.62E-05	7.63E-07	7.36E-05		9.28E-04	1.41E-04	2.72E-05
Calorix Boiler 6	1.63E-02		2.03E-02	1.40E-02		4.76E-06	2.65E-05	6.55E-07	2.98E-06	8.58E-06	1.87E-07	1.79E-05		2.28E-04	3.43E-05	6.63E-06
Boiler Room MAU 1	–		9.15E-03	8.34E-03		2.15E-06	1.20E-05	2.96E-07	1.34E-06	3.87E-06	8.45E-08	8.10E-06		1.02E-04	1.55E-05	2.99E-06
Lab MAU	–		2.06E-03	1.43E-03		4.84E-07	2.70E-06	6.67E-08	3.02E-07	8.73E-07	1.91E-08	1.83E-06		2.30E-05	3.49E-06	6.75E-07
Battery MAU	–		9.15E-03	8.34E-03		2.15E-06	1.20E-05	2.96E-07	1.34E-06	3.87E-06	8.45E-08	8.10E-06		1.02E-04	1.55E-05	2.99E-06
Main Office RTU 1	–		1.34E-03	9.27E-04		3.14E-07	1.75E-06	4.33E-08	1.96E-07	5.67E-07	1.24E-08	1.18E-06		1.49E-05	2.27E-06	4.38E-07
Main Office RTU 2	–		1.34E-03	9.27E-04		3.14E-07	1.75E-06	4.33E-08	1.96E-07	5.67E-07	1.24E-08	1.18E-06		1.49E-05	2.27E-06	4.38E-07
Main Office RTU 3	–		1.34E-03	9.27E-04		3.14E-07	1.75E-06	4.33E-08	1.96E-07	5.67E-07	1.24E-08	1.18E-06		1.49E-05	2.27E-06	4.38E-07
Main Office RTU 4	–		1.34E-03	9.27E-04		3.14E-07	1.75E-06	4.33E-08	1.96E-07	5.67E-07	1.24E-08	1.18E-06		1.49E-05	2.27E-06	4.38E-07
Main Office RTU 5	–		1.34E-03	9.27E-04		3.14E-07	1.75E-06	4.33E-08	1.96E-07	5.67E-07	1.24E-08	1.18E-06		1.49E-05	2.27E-06	4.38E-07
Main Office RTU 6	–		1.34E-03	9.27E-04		0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00
Meeting/RR/Plant Offices/Maintenance	–		8.92E-04	6.17E-04		3.14E-07	1.75E-06	4.33E-08	1.96E-07	5.67E-07	1.24E-08	1.18E-06		1.49E-05	2.27E-06	4.38E-07
Office RTU						2.09E-07	1.17E-06	2.88E-08	1.30E-07	3.77E-07	8.23E-09	7.89E-07		9.95E-06	1.51E-06	2.92E-07
Maintenance/Parts/Fab RTU	–		8.92E-04	6.17E-04		2.09E-07	1.17E-06	2.88E-08	1.30E-07	3.77E-07	8.23E-09	7.89E-07		9.95E-06	1.51E-06	2.92E-07
Receiving Bay IRH 1	–		5.10E-04	3.53E-04		1.20E-07	6.66E-07	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00		0.00E+00	0.00E+00	0.00E+00
Receiving Bay IRH 2	–		5.10E-04	3.53E-04		1.20E-07	6.63E-07	1.65E-08	7.45E-08	2.16E-07	4.70E-09	4.51E-07		5.68E-06	8.62E-07	1.67E-07
Receiving Bay IRH 3	–		5.10E-04	3.53E-04		1.20E-07	6.63E-07	1.65E-08	7.45E-08	2.16E-07	4.70E-09	4.51E-07		5.68E-06	8.62E-07	1.67E-07
Receiving Bay IRH 4	–		5.10E-04	3.53E-04		1.20E-07	6.63E-07	1.65E-08	7.45E-08	2.16E-07	4.70E-09	4.51E-07		5.68E-06	8.62E-07	1.67E-07
Receiving Bay IRH 5	–		5.10E-04	3.53E-04		1.20E-07	6.63E-07	1.65E-08	7.45E-08	2.16E-07	4.70E-09	4.51E-07		5.68E-06	8.62E-07	1.67E-07
Receiving Bay IRH 6	–		5.10E-04	3.53E-04		1.20E-07	6.66E-07	1.65E-08	7.45E-08	2.16E-07	4.70E-09	4.51E-07		5.68E-06	8.62E-07	1.67E-07
Receiving Bay IRH 7	–		5.10E-04	3.53E-04		1.20E-07	6.63E-07	1.65E-08	7.45E-08	2.16E-07	4.70E-09	4.51E-07		5.68E-06	8.62E-07	1.67E-07
Receiving Bay IRH 8	–		5.10E-04	3.53E-04		1.20E-07	6.66E-07	1.65E-08	7.45E-08	2.16E-07	4.70E-09	4.51E-07		5.68E-06	8.62E-07	1.67E-07
Anhydrous Ammonia Refrigeration System (11 Chillers)*	2.23		–	–		–	–	–	–	–	–	–		–	–	–
Flare	0.02				2.00E-01											
Emergency Generator 1		3.63E-04				1.89E-05	1.80E-03						1.12E-03			
Emergency Generator 2		3.70E-04				1.94E-05	1.84E-03						1.14E-03			
Total Emissions Rate	0.04	7.33E-04	6.16E-04	3.28E-01	2.00E-01	1.49E-04	3.88E-03	1.62E-05	5.87E-05	1.96E-04	4.33E-08	4.15E-04	2.26E-03	5.23E-03	7.94E-04	1.53E-04
IDAPA 58.01.01.585 Screening Emission Level	1.2	0.017	1.18E+02	1.20E+01	9.33E-01	9.10E-05	2.50E+01	3.30E-03	6.70E-02	3.33E-01	1.30E-02	3.00E-03	2.90E+01	3.33E-01	3.30E-02	1.30E-02
Exceed's Screening Level?	Below	Below	Below	Below	Below	Exceeds	Below	Below	Below	Below	Below	Below	Below	Below	Below	Below

*Emissions from the anhydrous ammonia refrigeration system are not included, as under normal operations, the system will not release emissions to the ambient air. In the event of a system backup, an instantaneous release would occur from a pressure relase valve. Therefore, as ammonia is only released from the anhydrous ammonia refrigeration system, it will not require dispersion modeling. It is not included in the screening level comparison for modeling.

AgroFarma Twin Falls - Chobani Facility Baseline Emission Estimate Summary

Toxic Air Pollutant Emissions Inventory

Carcinogenic Toxic Air Pollutants (sum of all emissions)	Acetaldehyde	Benzene	1,3-Butadiene	3-Methylchloranthrene	Benzo(a)pyrene*	Formaldehyde	POM (7-PAH)[6]	PAH	Arsenic	Nickel	Beryllium	Cadmium	Chromium
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Cleaver Brooks Boiler 1		6.72E-05		5.76E-08	3.84E-08	2.40E-03	3.85E-07		6.40E-06	6.72E-05	3.84E-07	3.52E-05	4.48E-05
Cleaver Brooks Boiler 2		6.72E-05		5.76E-08	3.84E-08	2.40E-03	3.85E-07		6.40E-06	6.72E-05	3.84E-07	3.52E-05	4.48E-05
Cleaver Brooks Boiler 3		6.72E-05		5.76E-08	3.84E-08	2.40E-03	3.85E-07		6.40E-06	6.72E-05	3.84E-07	3.52E-05	4.48E-05
Cleaver Brooks Boiler 4		6.72E-05		5.76E-08	3.84E-08	2.40E-03	3.85E-07		6.40E-06	6.72E-05	3.84E-07	3.52E-05	4.48E-05
Cleaver Brooks Boiler 5		6.72E-05		5.76E-08	3.84E-08	2.40E-03	3.85E-07		6.40E-06	6.72E-05	3.84E-07	3.52E-05	4.48E-05
Calorix Boiler 6		3.42E-05		1.40E-08	9.36E-09	5.85E-04	8.87E-08	2.36E-06	1.56E-06	1.64E-05	9.36E-08	8.58E-06	1.09E-05
Boiler Room MAU 1		7.39E-06		6.34E-09	4.22E-09	2.64E-04	4.44E-08		7.04E-07	7.39E-06	4.22E-08	3.87E-06	4.93E-06
Lab MAU		1.67E-06		1.43E-09	9.53E-10	5.96E-05	1.00E-08		1.59E-07	1.67E-06	9.53E-09	8.73E-07	1.11E-06
Battery MAU		7.39E-06		6.34E-09	4.22E-09	2.64E-04	4.44E-08		7.04E-07	7.39E-06	4.22E-08	3.87E-06	4.93E-06
Main Office RTU 1		1.08E-06		9.27E-10	6.18E-10	3.86E-05	6.49E-09		1.03E-07	1.08E-06	6.18E-09	5.67E-07	7.21E-07
Main Office RTU 2		1.08E-06		9.27E-10	6.18E-10	3.86E-05	6.49E-09		1.03E-07	1.08E-06	6.18E-09	5.67E-07	7.21E-07
Main Office RTU 3		1.08E-06		9.27E-10	6.18E-10	3.86E-05	6.49E-09		1.03E-07	1.08E-06	6.18E-09	5.67E-07	7.21E-07
Main Office RTU 4		1.08E-06		9.27E-10	6.18E-10	3.86E-05	6.49E-09		1.03E-07	1.08E-06	6.18E-09	5.67E-07	7.21E-07
Main Office RTU 5		1.08E-06		9.27E-10	6.18E-10	3.86E-05	6.49E-09		1.03E-07	1.08E-06	6.18E-09	5.67E-07	7.21E-07
Main Office RTU 6		1.08E-06		9.27E-10	6.18E-10	3.86E-05	6.49E-09		1.03E-07	1.08E-06	6.18E-09	5.67E-07	7.21E-07
Meeting/RR/Plant Offices/Maintenance Office RTU		7.20E-07		6.17E-10	4.12E-10	2.57E-05	4.32E-09		6.86E-08	7.20E-07	4.12E-09	3.77E-07	4.80E-07
Maintenance/Parts/Fab RTU		7.20E-07		6.17E-10	4.12E-10	2.57E-05	4.32E-09		6.86E-08	7.20E-07	4.12E-09	3.77E-07	4.80E-07
Receiving Bay IRH 1		4.12E-07		3.53E-10	2.35E-10	1.47E-05	2.47E-09		3.92E-08	4.12E-07	2.35E-09	2.16E-07	2.74E-07
Receiving Bay IRH 2		4.12E-07		3.53E-10	2.35E-10	1.47E-05	2.47E-09		3.92E-08	4.12E-07	2.35E-09	2.16E-07	2.74E-07
Receiving Bay IRH 3		4.12E-07		3.53E-10	2.35E-10	1.47E-05	2.47E-09		3.92E-08	4.12E-07	2.35E-09	2.16E-07	2.74E-07
Receiving Bay IRH 4		4.12E-07		3.53E-10	2.35E-10	1.47E-05	2.47E-09		3.92E-08	4.12E-07	2.35E-09	2.16E-07	2.74E-07
Receiving Bay IRH 5		4.12E-07		3.53E-10	2.35E-10	1.47E-05	2.47E-09		3.92E-08	4.12E-07	2.35E-09	2.16E-07	2.74E-07
Receiving Bay IRH 6		4.12E-07		3.53E-10	2.35E-10	1.47E-05	2.47E-09		3.92E-08	4.12E-07	2.35E-09	2.16E-07	2.74E-07
Receiving Bay IRH 7		4.12E-07		3.53E-10	2.35E-10	1.47E-05	2.47E-09		3.92E-08	4.12E-07	2.35E-09	2.16E-07	2.74E-07
Receiving Bay IRH 8		4.12E-07		3.53E-10	2.35E-10	1.47E-05	2.47E-09		3.92E-08	4.12E-07	2.35E-09	2.16E-07	2.74E-07
Ammonia Refrigeration		–		–	–	–	–		–	–	–	–	–
Flare		9.38E-04				6.90E-03		8.28E-05					
Emergency Generator 1	3.01E-03	3.66E-03	1.53E-04			4.63E-03		1.35E-05					
Emergency Generator 2	3.07E-03	3.74E-03	1.57E-04			4.72E-03		1.37E-05					
Total Emissions Rate	6.08E-03	8.74E-03	3.10E-04	3.20E-07	2.17E-07	2.98E-02	2.02E-06	1.12E-04	3.62E-05	3.80E-04	2.17E-06	1.99E-04	2.53E-04
Carcinogenic Screening Emission Level 58.01.01.586	3.00E-03	8.00E-04	2.40E-05	2.50E-06	2.00E-06	5.10E-04	2.00E-06	9.10E-05	1.50E-05	2.75E-05	2.80E-05	3.70E-06	3.30E-02
Exceeds Screening Level?	Exceed	Exceed	Exceed	Below	Below	Exceed	Exceed	Exceed	Exceed	Exceed	Below	Exceed	Below

AgroFarma Twin Falls - Chobani Facility Baseline Emission Estimate Summary
Hazardous Air Pollutant Emissions Inventory

HAP Pollutants	CAS No.	PTE (tons/year)
Benzene	71-43-2	6.23E-03
1,3-Butadiene	106-99-0	1.55E-05
3-Methylchloranthrene	56-49-5	1.43E-06
Benzo(a)pyrene*	50-32-8	1.03E-06
Formaldehyde	50-00-0	0.09
Hexane	110-54-3	1.43
Naphthalene	91-20-3	4.87E-04
Toluene	108-88-3	2.87E-03
2-Methylnapthalene	97-57-6	1.83E-05
7, 12 - Dimethylbenz(a)anthracene		1.22E-05
Acenaphthene	83-32-9	1.37E-06
Acenaphyhylene	203-96-8	1.37E-06
Acetaldehyde	75-07-0	3.05E-04
Acrolein	107-02-8	3.67E-05
Anthracene	120-12-7	1.83E-06
Dichlorobenzene	25321-22-6	9.13E-04
Flouranthene	206-44-0	2.28E-06
Fluorene	86-73-7	2.13E-06
Phenanthrene	85-01-8	1.29E-05
Xylenes	1330-20-7	1.13E-04
Benzo(a)anthracene*	56-55-3	2.10E-06
Benzo(b)fluoranthene*	205-82-3	1.47E-06
Benzo(g,h,i)perylene	191-24-2	1.11E-06
Benzo(k)fluoranthene*	205-82-3	1.49E-06
Chrysene*	218-01-9	1.57E-06
Dibenzo(a,h)anthracene*	53-70-3	1.19E-06
Indeno(1,2,3-cd)pyrene*	193-39-5	1.58E-06
Metals		
Mercury	7439-97-6	2.07E-04
Arsenic	7440-38-2	1.59E-04
Nickel	7440-02-0	1.67E-03
Beryllium	7440-41-7	9.54E-06
Cadmium	7440-43-9	8.75E-04
Chromium	7440-47-3	1.11E-03
Cobalt	7440-48-4	6.70E-05
Manganese	7439-96-5	3.02E-04
Molybdenum	7439-98-7	8.75E-04
Selenium	7782-49-2	1.91E-05
	Total	**1.54**

AgroFarma Twin Falls - Chobani Facility Baseline Emission Estimate Summary
GHGs Pollutants

Criteria Pollutants Emissions Unit Name	Stack ID	CO_2 Metric Tons/Yr	CO_2 Short Tons/Yr	N_2O Metric Tons/Yr	N_2O Short Tons/Yr	CH_4 Metric Tons/Yr	CH_4 Short Tons/Yr	CO2e Metric Tons/Yr	CO2e Short Tons/Yr
Cleaver Brooks CBLE-700-800 NG Boiler 1	BOILER1	15287.79	16851.73	2.88E-02	3.18E-02	2.88E-01	3.18E-01	15,302.77	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 2	BOILER2	15287.79	16851.73	2.88E-02	3.18E-02	2.88E-01	3.18E-01	15,302.77	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 3	BOILER3	15287.79	16851.73	2.88E-02	3.18E-02	2.88E-01	3.18E-01	15,302.77	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 4	BOILER4	15287.79	16851.73	2.88E-02	3.18E-02	2.88E-01	3.18E-01	15,302.77	16,868.24
Cleaver Brooks CBLE-700-800 NG Boiler 5	BOILER5	15287.79	16851.73	2.88E-02	3.18E-02	2.88E-01	3.18E-01	15,302.77	16,868.24
Calorix Boiler	BOILER6	3724.19	4,105.17	2.74E-02	3.02E-02	1.39E-01	7.74E-02	3,727.84	4,109.19
Boiler Room MAU 1 - Rupp Air RAM 225 (50,000 cfm, direct fired)	BRMAU1	1679.23	1851.02	3.17E-03	3.49E-03	3.00E-02	3.31E-02	1,680.84	1,852.79
Lab MAU - Ason RN-050 (6,000 cfm, indirect fired RTU)	LABMAU	379.10	417.88	7.15E-04	7.88E-04	1.00E-02	1.10E-02	379.53	418.36
Battery MAU - Rupp Air RAM 222 (42,000 cfm, direct fired)	BATTMAU	1679.23	1851.02	3.17E-03	3.49E-03	3.00E-02	3.31E-02	1,680.84	1,852.79
Main Office RTU 1 - Carrier 48A5,T,030 (Indirect fired)	RTU1	245.89	271.04	4.64E-04	5.11E-04	4.64E-03	5.11E-03	246.13	271.31
Main Office RTU 2 - Carrier 48A5,T,030 (Indirect fired)	RTU2	245.89	271.04	4.64E-04	5.11E-04	4.64E-03	5.11E-03	246.13	271.31
Main Office RTU 3 - Carrier 48A5,T,030 (Indirect fired)	RTU3	245.89	271.04	4.64E-04	5.11E-04	4.64E-03	5.11E-03	246.13	271.31
Main Office RTU 4 - Carrier 48A5,T,030 (Indirect fired)	RTU4	245.89	271.04	4.64E-04	5.11E-04	4.64E-03	5.11E-03	246.13	271.31
Main Office RTU 5 - Carrier 48A5,T,030 (Indirect fired)	RTU5	245.89	271.04	4.64E-04	5.11E-04	4.64E-03	5.11E-03	246.13	271.31
Main Office RTU 6 - Carrier 48A5,T,030 (Indirect fired)	RTU6	245.89	271.04	4.64E-04	5.11E-04	4.64E-03	5.11E-03	246.13	271.31
Meeting/RR/Plant Offices/Maintenance Office RTU Carrier 48A5,S,020 (Indirect fired RTU)	PLANT	163.77	180.52	3.09E-04	3.41E-04	3.09E-03	3.41E-03	163.93	180.70
Maintenance/Parts/Fab RTU Carrier 48A5,S,060 (Indirect fired RTU)	MAINT	544.78	600.51	1.03E-03	1.14E-03	1.00E-02	1.10E-02	545.31	601.10
Reznor VR-2—60 Receiveing Bay IRH 1	IRH1	93.58	103.15	1.77E-04	1.95E-04	1.77E-03	1.95E-03	93.67	103.25
Reznor VR-2—60 Receiveing Bay IRH 2	IRH2	93.58	103.15	1.77E-04	1.95E-04	1.77E-03	1.95E-03	93.67	103.25
Reznor VR-2—60 Receiveing Bay IRH 3	IRH3	93.58	103.15	1.77E-04	1.95E-04	1.77E-03	1.95E-03	93.67	103.25
Reznor VR-2—60 Receiveing Bay IRH 4	IRH4	93.58	103.15	1.77E-04	1.95E-04	1.77E-03	1.95E-03	93.67	103.25
Reznor VR-2—60 Receiveing Bay IRH 5	IRH5	93.58	103.15	1.77E-04	1.95E-04	1.77E-03	1.95E-03	93.67	103.25
Reznor VR-2—60 Receiveing Bay IRH 6	IRH6	93.58	103.15	1.77E-04	1.95E-04	1.77E-03	1.95E-03	93.67	103.25
Reznor VR-2—60 Receiveing Bay IRH 7	IRH7	93.58	103.15	1.77E-04	1.95E-04	1.77E-03	1.95E-03	93.67	103.25
Reznor VR-2—60 Receiveing Bay IRH 8	IRH8	93.58	103.15	1.77E-04	1.95E-04	1.77E-03	1.95E-03	93.67	103.25
Flare	FLARE	2277.13	2510.08	2.76E-02	3.04E-02	1.40E-01	1.54E-01	2288.61	2,522.73
Emergency Generator 1	GEN1	144.96	159.79	1.20E-03	1.32E-03	5.90E-03	6.50E-03	145.45	160.33
Emergency Generator 2	GEN2	148.07	163.22	1.20E-03	1.32E-03	6.00E-03	6.61E-03	148.08	163.77
Total		89,403.39	98,549.30	0.21	0.24	1.86	1.97	89,500.42	98,659.82

Note: Cells highlighted in yellow are worst case between using Natural Gas va Digester Gas and used to estimate total emissions

AgroFarms Twin Falls - Chobani Facility Emission Estimates
MAUs (NG)
Annual Operation 8,760 hours/year

Criteria Pollutant	Emission Factor[1]	Unit	Boiler Room MAU 1 - Rapp Air RAM 225 (60,000 cfm, direct fired) Input MMBTU/hr	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Lab MAU - Aaon RN-060 (9,000 cfm, indirect fired RTU) Input MMBTU/hr	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Battery MAU - Rapp Air RAM 222 (42,000 cfm, direct fired) Input MMBTU/hr	Emission Rate (lb/hr)	Emission Rate (ton/yr)
Total Particulate Matter (PM)	7.6	lb/10^6SCF	3.667	0.03	0.13	0.810	0.01	0.04	3.667	0.03	0.13
Nitrogen Oxides (NOx)	100	lb/10^6SCF	3.667	0.35	1.53	0.810	0.08	0.35	3.667	0.35	1.53
Sulfur Dioxide (SO_2)	0.6	lb/10^6SCF	3.667	2.11E-03	9.24E-03	0.810	4.76E-04	2.08E-03	3.667	2.11E-03	9.24E-03
Carbon Monoxide (CO)	84	lb/10^6SCF	3.667	0.30	1.31	0.810	0.07	0.31	3.667	0.30	1.31
VOC	5.5	lb/10^6SCF	3.667	0.02	0.09	0.810	4.37E-03	1.91E-02	3.667	0.02	0.09
Lead	5.00E-04	lb/10^6SCF	3.667	1.76E-06	7.71E-06	0.810	3.97E-07	1.74E-06	3.667	1.76E-06	7.71E-06

Toxic Air Pollutants Non-metals[2]	CAS No.	CAA 112(b) HAP	EPA AP-42 Natural Gas Emission Factor (lb/10^6 scf)	Boiler Room MAU 1 - Rapp Air RAM 225 (60,000 cfm, direct fired) Input 10^6SCF/hr	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL	Lab MAU - Aaon RN-060 (9,000 cfm, indirect fired RTU) Input 10^6SCF/hr	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL	Battery MAU - Rapp Air RAM 222 (42,000 cfm, direct fired) Input 10^6SCF/hr	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL
Pentane	109-66-0	No	2.60E+00	3.52E-03	9.15E-03	4.01E-02	1.18E+02	Below	7.94E-04	2.06E-03	9.02E-03	1.18E+02	Below	3.52E-03	9.15E-03	4.01E-02	1.18E+02	Below
Benzene	71-43-2	Yes	2.10E-03	3.52E-03	7.39E-06	3.24E-05	8.00E-04	Below	7.94E-04	1.67E-03	7.31E-06	8.00E-04	Below	3.52E-03	7.39E-06	3.24E-05	8.00E-04	Below
3-Methylchloranthrene	56-49-5	Yes	1.80E-06	3.52E-03	6.34E-09	2.78E-08	2.50E-05	Below	7.94E-04	1.43E-09	6.26E-09	2.50E-05	Below	3.52E-03	6.34E-09	2.78E-08	2.50E-05	Below
Benzo(a)pyrene*	50-32-8	Yes	1.20E-06	3.52E-03	4.22E-09	1.85E-08	2.00E-05	Below	7.94E-04	9.53E-10	4.17E-09	2.00E-05	Below	3.52E-03	4.22E-09	1.85E-08	2.00E-05	Below
Formaldehyde	50-00-0	Yes	7.50E-02	3.52E-03	2.64E-04	1.16E-03	5.10E-04	Below	7.94E-04	5.96E-05	2.61E-04	5.10E-04	Below	3.52E-03	2.64E-04	1.16E-03	5.10E-04	Below
POM (7-PAH)[3]		Yes		3.52E-03	4.44E-08	1.95E-07	2.00E-08	Below	7.94E-04	1.00E-08	4.38E-08	2.00E-08	Below	3.52E-03	4.44E-08	1.95E-07	2.00E-08	Below
Hexane	110-54-3	Yes	1.80E+00	3.52E-03	6.34E-03	2.78E-02	1.20E+01	Below	7.94E-04	1.43E-03	6.26E-03	1.20E+01	Below	3.52E-03	6.34E-03	2.78E-02	1.20E+01	Below
Naphthalene	91-20-3	Yes	6.10E-04	3.52E-03	2.15E-06	9.42E-06	9.10E-05	Below	7.94E-04	4.84E-07	2.12E-06	9.10E-05	Below	3.52E-03	2.15E-06	9.42E-06	9.10E-05	Below
Toluene	108-88-3	Yes	3.40E-03	3.52E-03	1.20E-05	5.26E-05	2.50E+01	Below	7.94E-04	2.70E-06	1.18E-05	2.50E+01	Below	3.52E-03	1.20E-05	5.26E-05	2.50E+01	Below
2-Methylnaphthalene	91-57-6	Yes	2.40E-05	3.52E-03	8.45E-08	3.70E-07			7.94E-04	1.91E-08	8.37E-08			3.52E-03	8.45E-08	3.70E-07		
7, 12 - Dimethylbenz(a)anthracene		Yes	1.60E-05	3.52E-03	5.63E-08	2.47E-07			7.94E-04	1.27E-08	5.56E-08			3.52E-03	5.63E-08	2.47E-07		
Acenaphthene	83-32-9	Yes	1.80E-06	3.52E-03	6.34E-09	2.78E-08			7.94E-04	1.43E-09	6.26E-09			3.52E-03	6.34E-09	2.78E-08		
Acenaphthylene	208-96-8	Yes	1.80E-06	3.52E-03	6.34E-09	2.78E-08			7.94E-04	1.43E-09	6.26E-09			3.52E-03	6.34E-09	2.78E-08		
Anthracene	120-12-7	Yes	2.40E-06	3.52E-03	8.45E-09	3.70E-08			7.94E-04	1.91E-09	8.37E-09			3.52E-03	8.45E-09	3.70E-08		
Dichlorobenzene	25321-22-6	Yes	1.20E-03	3.52E-03	4.22E-06	1.85E-05			7.94E-04	9.53E-07	4.17E-06			3.52E-03	4.22E-06	1.85E-05		
Fluoranthene	206-44-0	Yes	3.00E-06	3.52E-03	1.06E-08	4.64E-08			7.94E-04	2.38E-09	1.04E-08			3.52E-03	1.06E-08	4.64E-08		
Fluorene	86-73-7	Yes	2.80E-06	3.52E-03	9.86E-09	4.32E-08			7.94E-04	2.22E-09	9.72E-09			3.52E-03	9.86E-09	4.32E-08		
Phenanthrene	85-01-8	Yes	1.70E-05	3.52E-03	5.98E-08	2.62E-07			7.94E-04	1.35E-08	5.91E-08			3.52E-03	5.98E-08	2.62E-07		
Benzo(a)anthracene*	56-55-3	Yes	1.80E-06	3.52E-03	6.34E-09	2.78E-08			7.94E-04	1.43E-09	6.26E-09			3.52E-03	6.34E-09	2.78E-08		
Benzo(b)fluoranthene*	205-82-3	Yes	1.80E-06	3.52E-03	6.34E-09	2.78E-08			7.94E-04	1.43E-09	6.26E-09			3.52E-03	6.34E-09	2.78E-08		
Benzo(g,h,i)perylene	191-24-2	Yes	1.20E-06	3.52E-03	4.22E-09	1.85E-08			7.94E-04	9.53E-10	4.17E-09			3.52E-03	4.22E-09	1.85E-08		
Benzo(k)fluoranthene*	205-82-3	Yes	1.80E-06	3.52E-03	6.34E-09	2.78E-08			7.94E-04	1.43E-09	6.26E-09			3.52E-03	6.34E-09	2.78E-08		
Chrysene*	218-01-9	Yes	1.80E-06	3.52E-03	6.34E-09	2.78E-08			7.94E-04	1.43E-09	6.26E-09			3.52E-03	6.34E-09	2.78E-08		
Dibenzo(a,h)anthracene*	53-70-3	Yes	1.20E-06	3.52E-03	4.22E-09	1.85E-08			7.94E-04	9.53E-10	4.17E-09			3.52E-03	4.22E-09	1.85E-08		
Indeno(1,2,3-cd)pyrene*	193-39-5	Yes	1.80E-06	3.52E-03	6.34E-09	2.78E-08			7.94E-04	1.43E-09	6.26E-09			3.52E-03	6.34E-09	2.78E-08		

Toxic Air Pollutants Metals[4]	CAS Number	CAA 112(b) HAP	Emission Factor (lb/10^6 scf)	Boiler Room MAU 1 - Rapp Air RAM 225 (60,000 cfm, direct fired) Input 10^6SCF/hr	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL	Lab MAU - Aaon RN-060 (9,000 cfm, indirect fired RTU) Input 10^6SCF/hr	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL	Battery MAU - Rapp Air RAM 222 (42,000 cfm, direct fired) Input 10^6SCF/hr	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL
Mercury	7439-97-6	Yes	2.60E-04	3.52E-03	9.15E-07	4.01E-06			7.94E-04	2.06E-07	9.02E-07			3.52E-03	9.15E-07	4.01E-06		
Arsenic	7440-38-2	Yes	2.00E-04	3.52E-03	7.04E-07	3.08E-06	1.50E-06	Below	7.94E-04	1.59E-07	6.96E-07	1.50E-06	Below	3.52E-03	7.04E-07	3.08E-06	1.50E-06	Below
Nickel	7440-02-0	Yes	2.10E-03	3.52E-03	7.39E-06	3.24E-05	2.75E-05	Below	7.94E-04	1.67E-06	7.31E-06	2.75E-05	Below	3.52E-03	7.39E-06	3.24E-05	2.75E-05	Below
Beryllium	7440-41-7	Yes	1.20E-05	3.52E-03	4.22E-08	1.85E-07	2.80E-05	Below	7.94E-04	9.53E-10	4.17E-09	2.80E-05	Below	3.52E-03	4.22E-08	1.85E-07	2.80E-05	Below
Cadmium	7440-43-9	Yes	1.10E-03	3.52E-03	3.87E-06	1.70E-05	3.70E-06	Exceeds	7.94E-04	8.73E-07	3.82E-06	3.70E-06	Below	3.52E-03	3.87E-06	1.70E-05	3.70E-06	Exceeds
Chromium	7440-47-3	Yes	1.40E-03	3.52E-03	4.93E-06	2.16E-05	3.30E-02	Below	7.94E-04	1.11E-06	4.86E-06	3.30E-02	Below	3.52E-03	4.93E-06	2.16E-05	3.30E-02	Below
Cobalt	7440-48-4	Yes	8.40E-05	3.52E-03	2.96E-07	1.30E-06	3.30E-03	Below	7.94E-04	6.67E-08	2.92E-07	3.30E-03	Below	3.52E-03	2.96E-07	1.30E-06	3.30E-03	Below
Manganese	7439-96-5	Yes	3.80E-04	3.52E-03	1.34E-06	5.87E-06	6.70E-02	Below	7.94E-04	3.02E-07	1.32E-06	6.70E-02	Below	3.52E-03	1.34E-06	5.87E-06	6.70E-02	Below
Molybdenum	7439-98-7	Yes	1.10E-03	3.52E-03	3.87E-06	1.70E-05	3.33E-01	Below	7.94E-04	8.73E-07	3.82E-06	3.33E-01	Below	3.52E-03	3.87E-06	1.70E-05	3.33E-01	Below
Selenium	7782-49-2	Yes	2.40E-05	3.52E-03	8.45E-08	3.70E-07	1.30E-02	Below	7.94E-04	1.91E-08	8.37E-08	1.30E-02	Below	3.52E-03	8.45E-08	3.70E-07	1.30E-02	Below
Vanadium	1314-62-1	No	2.30E-03	3.52E-03	8.10E-06	3.55E-05	3.00E-03	Below	7.94E-04	1.83E-06	8.02E-06	3.00E-03	Below	3.52E-03	8.10E-06	3.55E-05	3.00E-03	Below
Zinc	7440-66-6	No	2.90E-02	3.52E-03	1.02E-04	4.47E-04	3.33E-01	Below	7.94E-04	2.30E-05	1.01E-04	3.33E-01	Below	3.52E-03	1.02E-04	4.47E-04	3.33E-01	Below
Barium	7440-39-3	No	4.40E-03	3.52E-03	1.55E-05	6.79E-05	3.30E-02	Below	7.94E-04	3.49E-06	1.53E-05	3.30E-02	Below	3.52E-03	1.55E-05	6.79E-05	3.30E-02	Below
Copper	7440-50-8	No	8.50E-04	3.52E-03	2.99E-06	1.31E-05	1.30E-02	Below	7.94E-04	6.75E-07	2.96E-06	1.30E-02	Below	3.52E-03	2.99E-06	1.31E-05	1.30E-02	Below
			Total Non-Metal HAPs	6.63E-03	2.91E-02				Total Non-Metal HAPs	1.60E-03	9.66E-03			Total Non-Metal HAPs	6.63E-03	2.91E-02		
			Total Metal HAPs	2.34E-05	1.03E-04				Total Metal HAPs	5.29E-06	2.31E-05			Total Metal HAPs	2.34E-05	1.03E-04		
			Total HAPs	0.01	0.03				Total HAPs	1.51E-03	0.01			Total HAPs	0.01	0.03		

Notes:
[1] Criteria Pollutant emission factors for small uncontrolled boilers as stated AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-1 and 1.4-2. PM emission factor is assumed to equal PM10.
Conversion Factor: 1020 BTU/SCF
[2] Toxic Air Pollutants emission factors from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3.
[3] Polycyclic Organic Matter (POM) is considered as one TAP consisting of benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3,-cd)pyrene, and benzo(a)pyrene. Compounds constituting POM are designated as *.
[4] Toxic Air Pollutant Metal emission factors from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4.

AgroFarma Twin Falls - Chobani Facility Emission Estimates
MAUs (NG)
Annual Operation 8,760 hours/year

Green House Gases	EF (Natural Gas) kg/MMBtu	HHV	Reference	Boiler Room MAU 1 - Rapp Air RAM 225 (50,000 cfm, direct fired) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[6,8,7] (metric ton/yr)	Lab MAU - Aaon RN-050 (8,000 cfm, indirect fired RTU) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[6,8,7] (metric ton/yr)	Battery MAU - Rapp Air RAM 222 (42,000 cfm, direct fired) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[6,8,7] (metric ton/yr)
CO_2	53.02	1.026E-03	40 CFR 98 Subpart C Equation C-1 Tier 1	3,517	30,808,920	1679.23	794	6,955,440	379.10	3,517	30,808,920	1679.23
N_2O	1.0E-04	1.026E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	3,517	30,808,920	3.17E-03	794	6,955,440	7.15E-04	3,517	30,808,920	3.17E-03
CH_4	1.0E-03	1.026E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	3,517	30,808,920	0.03	794	6,955,440	0.01	3,517	30,808,920	0.03
CO2e			40 CFR 98 Part A			1,680.84			379.53			1,680.84

Notes

[6]Eqn C-1: $CO_2 = 1 \times 10^{-3} \times$ Fuel x HHV x EF
Fuel = Volume of fuel combusted per year, (SCF/Year)
EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)
HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)
1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[8]Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-6} \times$ Fuel x HHV x EF
Fuel = Volume of fuel combusted per year, (SCF/Year)
EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)
HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)
1×10^{-6} = Conversion Factor from Kilograms to Metric Tons

[7]CO_2e = (GWP CO_2 x CO_2 metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP N_2O x N_2O metric ton/yr)
Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1

GWP CO_2 =	1.00
GWP CH_4 =	21.00
GWP N_2O =	310.00

AgroFarma Twin Falls - Chobani Facility Emission Estimate
IRHs (BG)
Annual Operation 8,760 hours/year

Toxic Air Pollutants Non-metals [2]	CAS No.	CAA 112(b) HAP	EPA AP-42 Natural Gas Emission Factor (lb/10⁶ scf)	Razmor VR-2—60 Receiving Bay IRH 1 Input (10⁶SCF/hr)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL
Pentane	109-66-0	No	2.60E+00	1.96E-04	5.10E-04	2.23E-03	1.18E+02	Below
Benzene	71-43-2	Yes	2.10E-03	1.96E-04	4.12E-07	1.80E-06	8.00E-04	Below
3-Methylchloranthrene	56-49-5	Yes	1.80E-06	1.96E-04	3.53E-10	1.55E-09	2.50E-06	Below
Benzo(a)pyrene*	50-32-8	Yes	1.20E-06	1.96E-04	2.35E-10	1.03E-09	2.00E-06	Below
Formaldehyde	50-00-0	Yes	7.50E-02	1.96E-04	1.47E-05	6.44E-05	5.10E-04	Below
POM (7-PAH)[3]		Yes		1.96E-04	2.47E-09	1.08E-08	2.00E-06	Below
Hexane	110-54-3	Yes	1.80E+00	1.96E-04	3.53E-04	1.55E-03	1.20E+01	Below
Naphthalene	91-20-3	Yes	6.10E-04	1.96E-04	1.20E-07	5.26E-07	9.10E-05	Below
Toluene	108-88-3	Yes	3.40E-03	1.96E-04	6.66E-07	2.92E-06	2.50E+01	Below
2-Methylnaphthalene	91-57-6	Yes	2.40E-05	1.96E-04	4.70E-09	2.06E-08		
7, 12 - Dimethylbenz(a)anthracene		Yes	1.60E-05	1.96E-04	3.14E-09	1.38E-08		
Acenaphthene	83-32-9	Yes	1.80E-06	1.96E-04	3.53E-10	1.55E-09		
Acenaphthylene	203-96-8	Yes	1.80E-06	1.96E-04	3.53E-10	1.55E-09		
Anthracene	120-12-7	Yes	2.40E-06	1.96E-04	4.70E-10	2.06E-09		
Dichlorobenzene	25321-22-6	Yes	1.20E-03	1.96E-04	2.35E-07	1.03E-06		
Fluoranthene	206-44-0	Yes	3.00E-06	1.96E-04	5.88E-10	2.58E-09		
Fluorene	86-73-7	Yes	2.80E-06	1.96E-04	5.49E-10	2.40E-09		
Phenanthrene	85-01-8	Yes	1.70E-05	1.96E-04	3.33E-09	1.46E-08		
Benzo(a)anthracene*	56-55-3	Yes	1.80E-06	1.96E-04	3.53E-10	1.55E-09		
Benzo(b)fluoranthene*	205-82-3	Yes	1.80E-06	1.96E-04	3.53E-10	1.55E-09		
Benzo(g,h,i)perylene	191-24-2	Yes	1.20E-06	1.96E-04	2.35E-10	1.03E-09		
Benzo(k)fluoranthene*	205-82-3	Yes	1.80E-06	1.96E-04	3.53E-10	1.55E-09		
Chrysene*	218-01-9	Yes	1.80E-06	1.96E-04	3.53E-10	1.55E-09		
Dibenzo(a,h)anthracene*	53-70-3	Yes	1.20E-06	1.96E-04	2.35E-10	1.03E-09		
Indeno(1,2,3-cd)pyrene*	193-39-5	Yes	1.80E-06	1.96E-04	3.53E-10	1.55E-09		

Toxic Air Pollutants Non-metals [2]	Razmor VR-2—60 Receiving Bay IRH 2 Input (10⁶SCF/hr)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL
Pentane	1.96E-04	5.10E-04	2.23E-03	1.18E+02	Below
Benzene	1.96E-04	4.12E-07	1.80E-06	8.00E-04	Below
3-Methylchloranthrene	1.96E-04	3.53E-10	1.55E-09	2.50E-06	Below
Benzo(a)pyrene*	1.96E-04	2.35E-10	1.03E-09	2.00E-06	Below
Formaldehyde	1.96E-04	1.47E-05	6.44E-05	5.10E-04	Below
POM (7-PAH)[3]	1.96E-04	2.47E-09	1.08E-08	2.00E-06	Below
Hexane	1.96E-04	3.53E-04	1.55E-03	1.20E+01	Below
Naphthalene	1.96E-04	1.20E-07	5.26E-07	9.10E-05	Below
Toluene	1.96E-04	6.66E-07	2.92E-06	2.50E+01	Below
2-Methylnaphthalene	1.96E-04	4.70E-09	2.06E-08		
7, 12 - Dimethylbenz(a)anthracene	1.96E-04	3.14E-09	1.38E-08		
Acenaphthene	1.96E-04	3.53E-10	1.55E-09		
Acenaphthylene	1.96E-04	3.53E-10	1.55E-09		
Anthracene	1.96E-04	4.70E-10	2.06E-09		
Dichlorobenzene	1.96E-04	2.35E-07	1.03E-06		
Fluoranthene	1.96E-04	5.88E-10	2.58E-09		
Fluorene	1.96E-04	5.49E-10	2.40E-09		
Phenanthrene	1.96E-04	3.33E-09	1.46E-08		
Benzo(a)anthracene*	1.96E-04	3.53E-10	1.55E-09		
Benzo(b)fluoranthene*	1.96E-04	3.53E-10	1.55E-09		
Benzo(g,h,i)perylene	1.96E-04	2.35E-10	1.03E-09		
Benzo(k)fluoranthene*	1.96E-04	3.53E-10	1.55E-09		
Chrysene*	1.96E-04	3.53E-10	1.55E-09		
Dibenzo(a,h)anthracene*	1.96E-04	2.35E-10	1.03E-09		
Indeno(1,2,3-cd)pyrene*	1.96E-04	3.53E-10	1.55E-09		

Toxic Air Pollutants Non-metals [2]	Razmor VR-2—60 Receiving Bay IRH 3 Input (10⁶SCF/hr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL
Pentane	1.96E-04	5.10E-04	2.23E-03	1.18E+02	Below
Benzene	1.96E-04	4.12E-07	1.80E-06	8.00E-04	Below
3-Methylchloranthrene	1.96E-04	3.53E-10	1.55E-09	2.50E-06	Below
Benzo(a)pyrene*	1.96E-04	2.35E-10	1.03E-09	2.00E-06	Below
Formaldehyde	1.96E-04	1.47E-05	6.44E-05	5.10E-04	Below
POM (7-PAH)[3]	1.96E-04	2.47E-09	1.08E-08	2.00E-06	Below
Hexane	1.96E-04	3.53E-04	1.55E-03	1.20E+01	Below
Naphthalene	1.96E-04	1.20E-07	5.26E-07	9.10E-05	Below
Toluene	1.96E-04	6.66E-07	2.92E-06	2.50E+01	Below
2-Methylnaphthalene	1.96E-04	4.70E-09	2.06E-08		
7, 12 - Dimethylbenz(a)anthracene	1.96E-04	3.14E-09	1.38E-08		
Acenaphthene	1.96E-04	3.53E-10	1.55E-09		
Acenaphthylene	1.96E-04	3.53E-10	1.55E-09		
Anthracene	1.96E-04	4.70E-10	2.06E-09		
Dichlorobenzene	1.96E-04	2.35E-07	1.03E-06		
Fluoranthene	1.96E-04	5.88E-10	2.58E-09		
Fluorene	1.96E-04	5.49E-10	2.40E-09		
Phenanthrene	1.96E-04	3.33E-09	1.46E-08		
Benzo(a)anthracene*	1.96E-04	3.53E-10	1.55E-09		
Benzo(b)fluoranthene*	1.96E-04	3.53E-10	1.55E-09		
Benzo(g,h,i)perylene	1.96E-04	2.35E-10	1.03E-09		
Benzo(k)fluoranthene*	1.96E-04	3.53E-10	1.55E-09		
Chrysene*	1.96E-04	3.53E-10	1.55E-09		
Dibenzo(a,h)anthracene*	1.96E-04	2.35E-10	1.03E-09		
Indeno(1,2,3-cd)pyrene*	1.96E-04	3.53E-10	1.55E-09		

Toxic Air Pollutants Metals [4]	CAS Number	CAA 112(b) HAP	Emission Factor (lb/10⁶ scf)	Razmor VR-2—60 Receiving Bay IRH 1 Input (10⁶SCF/hr)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL
Mercury	7439-97-6	Yes	2.60E-04	1.96E-04	5.10E-08	2.23E-07		
Arsenic	7440-38-2	Yes	2.00E-04	1.96E-04	3.92E-08	1.72E-07	1.50E-06	Below
Nickel	7440-02-0	Yes	2.10E-03	1.96E-04	4.12E-07	1.80E-06	2.75E-05	Below
Beryllium	7440-41-7	Yes	1.20E-05	1.96E-04	2.35E-09	1.03E-08	2.80E-05	Below
Cadmium	7440-43-9	Yes	1.10E-03	1.96E-04	2.16E-07	9.46E-07	3.70E-06	Below
Chromium	7440-47-3	Yes	1.40E-03	1.96E-04	2.74E-07	1.20E-06	3.30E-02	Below
Cobalt	7440-48-4	Yes	8.40E-05	1.96E-04	1.65E-08	7.23E-08	3.30E-03	Below
Manganese	7439-96-5	Yes	3.80E-04	1.96E-04	7.45E-08	3.26E-07	6.70E-02	Below
Molybdenum	7439-98-7	Yes	1.10E-03	1.96E-04	2.16E-07	9.46E-07	3.33E-01	Below
Selenium	7782-49-2	Yes	2.40E-05	1.96E-04	4.70E-09	2.06E-08	1.30E-02	Below
Vanadium	1314-62-1	No	2.30E-03	1.96E-04	4.51E-07	1.98E-06	3.00E-03	Below
Zinc	7440-66-6	No	2.90E-02	1.96E-04	5.68E-06	2.49E-05	3.33E-01	Below
Barium	7440-39-3	No	4.40E-03	1.96E-04	8.62E-07	3.78E-06	3.30E-02	Below
Copper	7440-50-8	No	8.50E-04	1.96E-04	1.67E-07	7.31E-07	1.30E-02	Below
			Total Non-Metal HAPs		3.69E-04	1.62E-03		
			Total Metal HAPs		1.31E-06	5.72E-06		
			Total HAPs		3.70E-04	1.63E-03		

Toxic Air Pollutants Metals [4]	Razmor VR-2—60 Receiving Bay IRH 2 Input (10⁶SCF/hr)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL
Mercury	1.96E-04	5.10E-08	2.23E-07		
Arsenic	1.96E-04	3.92E-08	1.72E-07	1.50E-06	Below
Nickel	1.96E-04	4.12E-07	1.80E-06	2.75E-05	Below
Beryllium	1.96E-04	2.35E-09	1.03E-08	2.80E-05	Below
Cadmium	1.96E-04	2.16E-07	9.46E-07	3.70E-06	Below
Chromium	1.96E-04	2.74E-07	1.20E-06	3.30E-02	Below
Cobalt	1.96E-04	1.65E-08	7.23E-08	3.30E-03	Below
Manganese	1.96E-04	7.45E-08	3.26E-07	6.70E-02	Below
Molybdenum	1.96E-04	2.16E-07	9.46E-07	3.33E-01	Below
Selenium	1.96E-04	4.70E-09	2.06E-08	1.30E-02	Below
Vanadium	1.96E-04	4.51E-07	1.98E-06	3.00E-03	Below
Zinc	1.96E-04	5.68E-06	2.49E-05	3.33E-01	Below
Barium	1.96E-04	8.62E-07	3.78E-06	3.30E-02	Below
Copper	1.96E-04	1.67E-07	7.31E-07	1.30E-02	Below
Total Non-Metal HAPs		3.69E-04	1.62E-03		
Total Metal HAPs		1.31E-06	5.72E-06		
Total HAPs		3.70E-04	1.63E-03		

Toxic Air Pollutants Metals [4]	Razmor VR-2—60 Receiving Bay IRH 3 Input (10⁶SCF/hr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL
Mercury	1.96E-04	5.10E-08	2.23E-07		
Arsenic	1.96E-04	3.92E-08	1.72E-07	1.50E-06	Below
Nickel	1.96E-04	4.12E-07	1.80E-06	2.75E-05	Below
Beryllium	1.96E-04	2.35E-09	1.03E-08	2.80E-05	Below
Cadmium	1.96E-04	2.16E-07	9.46E-07	3.70E-06	Below
Chromium	1.96E-04	2.74E-07	1.20E-06	3.30E-02	Below
Cobalt	1.96E-04	1.65E-08	7.23E-08	3.30E-03	Below
Manganese	1.96E-04	7.45E-08	3.26E-07	6.70E-02	Below
Molybdenum	1.96E-04	2.16E-07	9.46E-07	3.33E-01	Below
Selenium	1.96E-04	4.70E-09	2.06E-08	1.30E-02	Below
Vanadium	1.96E-04	4.51E-07	1.98E-06	3.00E-03	Below
Zinc	1.96E-04	5.68E-06	2.49E-05	3.33E-01	Below
Barium	1.96E-04	8.62E-07	3.78E-06	3.30E-02	Below
Copper	1.96E-04	1.67E-07	7.31E-07	1.30E-02	Below
Total Non-M		3.69E-04	1.62E-03		Total N
Total Metal		1.31E-06	5.72E-06		T
Total HAPs		3.70E-04	1.63E-03		

Notes:

[1] Criteria Pollutant emission factors for small uncontrolled boilers as stated AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-1 and 1.4-2. PM emission factor is assumed to equal PM10.
Conversion Factor: 1020 BTU/SCF

[2] Toxic Air Pollutants emission factors from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3.

[3] Polycyclic Organic Matter (POM) is considered as one TAP consisting of benzo(a)pyrene, benzo(a)anthracene, benzo(b)flouranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3,-cd)pyrene, and benzo(a)pyrene. Compounds constituting POM are designated as *.

[4] Toxic Air Pollutant Metal emission factors from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4.

AgroFarma Twin Falls - Chobani Facility Emission Estimate

IRHs (NG)

Annual Operation 8,760 hours/year

Emission Unit	Input MMBTU/hr
Reznor VR-2—60 Receiveing Bay IRH 1	0.200
Reznor VR-2—60 Receiveing Bay IRH 2	0.200
Reznor VR-2—60 Receiveing Bay IRH 3	0.200
Reznor VR-2—60 Receiveing Bay IRH 4	0.200
Reznor VR-2—60 Receiveing Bay IRH 5	0.200
Reznor VR-2—60 Receiveing Bay IRH 6	0.200
Reznor VR-2—60 Receiveing Bay IRH 7	0.200
Reznor VR-2—60 Receiveing Bay IRH 8	0.200

		Reznor VR-2—60 Receiveing Bay IRH 1		Reznor VR-2—60 Receiveing Bay IRH 2		Reznor VR-2—60 Receiveing Bay IRH 3		Reznor VR-2—60 Receiveing Bay IRH 4		Reznor VR-2—60 Receiveing Bay IRH 5		Reznor VR-2—60 Receiveing Bay IRH 6		Reznor VR-2—60 Receiveing Bay IRH 7		Reznor VR-2—60 Receiveing Bay IRH 8	
Criteria Pollutant	Emission Factor[a] lb/10^6SCF	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)
Total Particulate Matter (PM)	7.6	1.49E-03	0.01	1.49E-03	0.01	1.49E-03	0.01	1.49E-03	0.01	1.49E-03	0.01	1.49E-03	0.01	1.49E-03	0.01	1.49E-03	0.01
Nitrogen Oxides (NOx)	100	0.02	0.09	0.02	0.09	0.02	0.09	0.02	0.09	0.02	0.09	0.02	0.09	0.02	0.09	0.02	0.09
Sulfur Dioxide (SO_2)	0.6	1.18E-04	5.17E-04	1.18E-04	5.17E-04	1.18E-04	5.17E-04	1.18E-04	5.17E-04	1.18E-04	5.17E-04	1.18E-04	5.17E-04	1.18E-04	5.17E-04	1.18E-04	5.17E-04
Carbon Monoxide (CO)	84	0.02	0.09	0.02	0.09	0.02	0.09	0.02	0.09	0.02	0.09	0.02	0.09	0.02	0.09	0.02	0.09
VOC	5.5	1.08E-03	4.73E-03	1.08E-03	4.73E-03	1.08E-03	4.73E-03	1.08E-03	4.73E-03	1.08E-03	4.73E-03	1.08E-03	4.73E-03	1.08E-03	4.73E-03	1.08E-03	4.73E-03
Lead	5.00E-04	9.80E-08	4.29E-07	9.80E-08	4.29E-07	9.80E-08	4.29E-07	9.80E-08	4.29E-07	9.80E-08	4.29E-07	9.80E-08	4.29E-07	9.80E-08	4.29E-07	9.80E-08	4.29E-07

AgroFarma Twin Falls - Chobani Fac
IRHs (NG)
Annual Operation 8,760

Toxic Air Pollutants Non-metals [2]	CAS No.	Raznor VR-2—60 Receiving Bay IRH 4 Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL	Raznor VR-2—60 Receiving Bay IRH 5 Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL
		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)	
Pentane	109-66-0	1.96E-04	5.10E-04	2.23E-03	1.18E+02	Below	1.96E-04	5.10E-04	2.23E-03	1.18E+02	Below
Benzene	71-43-2	1.96E-04	4.12E-07	1.80E-06	8.00E-04	Below	1.96E-04	4.12E-07	1.80E-06	8.00E-04	Below
3-Methylchloranthrene	56-49-5	1.96E-04	3.53E-10	1.55E-09	2.50E-06	Below	1.96E-04	3.53E-10	1.55E-09	2.50E-06	Below
Benzo(a)pyrene*	50-32-8	1.96E-04	2.35E-10	1.03E-09	2.00E-06	Below	1.96E-04	2.35E-10	1.03E-09	2.00E-06	Below
Formaldehyde	50-00-0	1.96E-04	1.47E-05	6.44E-05	5.10E-04	Below	1.96E-04	1.47E-05	6.44E-05	5.10E-04	Below
POM (7-PAH)[3]		1.96E-04	2.47E-09	1.08E-08	2.00E-06	Below	1.96E-04	2.47E-09	1.08E-08	2.00E-06	Below
Hexane	110-54-3	1.96E-04	3.53E-04	1.55E-03	1.20E+01	Below	1.96E-04	3.53E-04	1.55E-03	1.20E+01	Below
Naphthalene	91-20-3	1.96E-04	1.20E-07	5.26E-07	9.10E-05	Below	1.96E-04	1.20E-07	5.26E-07	9.10E-05	Below
Toluene	108-88-3	1.96E-04	6.66E-07	2.92E-06	2.50E+01	Below	1.96E-04	6.66E-07	2.92E-06	2.50E+01	Below
2-Methylnapthalene	97-57-6	1.96E-04	4.70E-09	2.06E-08			1.96E-04	4.70E-09	2.06E-08		
7, 12 - Dimethylbenz(a)anthracene		1.96E-04	3.14E-09	1.38E-08			1.96E-04	3.14E-09	1.38E-08		
Acenaphthene	83-32-9	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Acenaphthylene	203-96-8	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Anthracene	120-12-7	1.96E-04	4.70E-10	2.06E-09			1.96E-04	4.70E-10	2.06E-09		
Dichlorobenzene	25321-22-6	1.96E-04	2.35E-07	1.03E-06			1.96E-04	2.35E-07	1.03E-06		
Flouranthene	206-44-0	1.96E-04	5.88E-10	2.58E-09			1.96E-04	5.88E-10	2.58E-09		
Fluorene	86-73-7	1.96E-04	5.48E-10	2.40E-09			1.96E-04	5.48E-10	2.40E-09		
Phenanthrene	85-01-8	1.96E-04	3.33E-09	1.46E-08			1.96E-04	3.33E-09	1.46E-08		
Benzo(a)anthracene*	56-55-3	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Benzo(b)fluoranthene*	205-82-3	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Benzo(g,h,i)perylene	191-24-2	1.96E-04	2.35E-10	1.03E-09			1.96E-04	2.35E-10	1.03E-09		
Benzo(k)fluoranthene*	205-82-3	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Chrysene*	218-01-9	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Dibenzo(a,h)anthracene*	53-70-3	1.96E-04	2.35E-10	1.03E-09			1.96E-04	2.35E-10	1.03E-09		
Indeno(1,2,3-cd)pyrene*	193-39-5	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		

Toxic Air Pollutants Metals [4]	CAS Number	Raznor VR-2—60 Receiving Bay IRH 4 Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL	Raznor VR-2—60 Receiving Bay IRH 5 Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL
		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)	
Mercury	7439-97-6	1.96E-04	5.10E-08	2.23E-07			1.96E-04	5.10E-08	2.23E-07		
Arsenic	7440-38-2	1.96E-04	3.92E-08	1.72E-07	1.50E-06	Below	1.96E-04	3.92E-08	1.72E-07	1.50E-06	Below
Nickel	7440-02-0	1.96E-04	4.12E-07	1.80E-06	2.75E-05	Below	1.96E-04	4.12E-07	1.80E-06	2.75E-05	Below
Beryllium	7440-41-7	1.96E-04	2.35E-09	1.03E-08	2.80E-05	Below	1.96E-04	2.35E-09	1.03E-08	2.80E-05	Below
Cadmium	7440-43-9	1.96E-04	2.16E-07	9.46E-07	3.70E-06	Below	1.96E-04	2.16E-07	9.46E-07	3.70E-06	Below
Chromium	7440-47-3	1.96E-04	2.74E-07	1.20E-06	3.30E-02	Below	1.96E-04	2.74E-07	1.20E-06	3.30E-02	Below
Cobalt	7440-48-4	1.96E-04	1.65E-08	7.23E-08	3.30E-03	Below	1.96E-04	1.65E-08	7.23E-08	3.30E-03	Below
Manganese	7439-96-5	1.96E-04	7.46E-08	3.26E-07	6.70E-02	Below	1.96E-04	7.46E-08	3.26E-07	6.70E-02	Below
Molybdenum	7439-98-7	1.96E-04	2.16E-07	9.46E-07	3.33E-01	Below	1.96E-04	2.16E-07	9.46E-07	3.33E-01	Below
Selenium	7782-49-2	1.96E-04	4.70E-09	2.06E-08	1.30E-02	Below	1.96E-04	4.70E-09	2.06E-08	1.30E-02	Below
Vanadium	1314-62-1	1.96E-04	4.51E-07	1.98E-06	3.00E-03	Below	1.96E-04	4.51E-07	1.98E-06	3.00E-03	Below
Zinc	7440-66-6	1.96E-04	5.68E-06	2.49E-05	3.33E-01	Below	1.96E-04	5.68E-06	2.49E-05	3.33E-01	Below
Barium	7440-39-3	1.96E-04	8.62E-07	3.78E-06	3.30E-02	Below	1.96E-04	8.62E-07	3.78E-06	3.30E-02	Below
Copper	7440-50-8	1.96E-04	1.67E-07	7.31E-07	1.30E-02	Below	1.96E-04	1.67E-07	7.31E-07	1.30E-02	Below
		Non-Metal HAPs	3.69E-04	1.62E-03			Total Non-Metal HAPs	3.69E-04	1.62E-03		Tot
		otal Metal HAPs	1.31E-06	5.72E-06			Total Metal HAPs	1.31E-06	5.72E-06		
		Total HAPs	3.70E-04	1.63E-03			Total HAPs	3.70E-04	1.63E-03		

AgroFarma Twin Falls - Chobani Fac
IRHs (NG)
Annual Operation 8,760

Toxic Air Pollutants Non-metals [2]	CAS No.	Reznor VR-2—60 Receiving Bay IRH 6 Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL	Reznor VR-2—60 Receiving Bay IRH 7 Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL	Reznor VR-2—60 Receiving Bay IRH 8 Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL
		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/yr)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)	
Pentane	109-66-0	1.96E-04	5.10E-04	2.23E-03	1.18E+02	Below	1.96E-04	5.10E-04	2.23E-03	1.18E+02	Below	1.96E-04	5.10E-04	2.23E-03	1.18E+02	Below
Benzene	71-43-2	1.96E-04	4.12E-07	1.80E-06	8.00E-04	Below	1.96E-04	4.12E-07	1.80E-06	8.00E-04	Below	1.96E-04	4.12E-07	1.80E-06	8.00E-04	Below
3-Methylchloranthrene	56-49-5	1.96E-04	3.53E-10	1.55E-09	2.50E-06	Below	1.96E-04	3.53E-10	1.55E-09	2.50E-06	Below	1.96E-04	3.53E-10	1.55E-09	2.50E-06	Below
Benzo(a)pyrene*	50-32-8	1.96E-04	2.35E-10	1.03E-09	2.00E-06	Below	1.96E-04	2.35E-10	1.03E-09	2.00E-06	Below	1.96E-04	2.35E-10	1.03E-09	2.00E-06	Below
Formaldehyde	50-00-0	1.96E-04	1.47E-05	6.44E-05	5.10E-04	Below	1.96E-04	1.47E-05	6.44E-05	5.10E-04	Below	1.96E-04	1.47E-05	6.44E-05	5.10E-04	Below
POM (7-PAH)[3]		1.96E-04	2.47E-09	1.08E-08	2.00E-06	Below	1.96E-04	2.47E-09	1.08E-08	2.00E-06	Below	1.96E-04	2.47E-09	1.08E-08	2.00E-06	Below
Hexane	110-54-3	1.96E-04	3.53E-04	1.55E-03	1.20E+01	Below	1.96E-04	3.53E-04	1.55E-03	1.20E+01	Below	1.96E-04	3.53E-04	1.55E-03	1.20E+01	Below
Naphthalene	91-20-3	1.96E-04	1.20E-07	5.26E-07	9.10E-05	Below	1.96E-04	1.20E-07	5.26E-07	9.10E-05	Below	1.96E-04	1.20E-07	5.26E-07	9.10E-05	Below
Toluene	108-88-3	1.96E-04	6.66E-07	2.92E-06	2.50E+01	Below	1.96E-04	6.66E-07	2.92E-06	2.50E+01	Below	1.96E-04	6.66E-07	2.92E-06	2.50E+01	Below
2-Methylnapthalene	91-57-6	1.96E-04	4.70E-09	2.06E-08			1.96E-04	4.70E-09	2.06E-08			1.96E-04	4.70E-09	2.06E-08		
7, 12 - Dimethylbenz(a)anthracene		1.96E-04	3.14E-09	1.38E-08			1.96E-04	3.14E-09	1.38E-08			1.96E-04	3.14E-09	1.38E-08		
Acenaphthene	83-32-9	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Acenaphthylene	203-96-8	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Anthracene	120-12-7	1.96E-04	4.70E-10	2.06E-09			1.96E-04	4.70E-10	2.06E-09			1.96E-04	4.70E-10	2.06E-09		
Dichlorobenzene	25321-22-6	1.96E-04	2.35E-07	1.03E-06			1.96E-04	2.35E-07	1.03E-06			1.96E-04	2.35E-07	1.03E-06		
Flouranthene	206-44-0	1.96E-04	5.88E-10	2.58E-09			1.96E-04	5.88E-10	2.58E-09			1.96E-04	5.88E-10	2.58E-09		
Fluorene	86-73-7	1.96E-04	5.49E-10	2.40E-09			1.96E-04	5.49E-10	2.40E-09			1.96E-04	5.49E-10	2.40E-09		
Phenanthrene	85-01-8	1.96E-04	3.33E-09	1.46E-08			1.96E-04	3.33E-09	1.46E-08			1.96E-04	3.33E-09	1.46E-08		
Benzo(a)anthracene*	56-55-3	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Benzo(b)fluoranthene*	205-82-3	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Benzo(g,h,i)perylene	191-24-2	1.96E-04	2.35E-10	1.03E-09			1.96E-04	2.35E-10	1.03E-09			1.96E-04	2.35E-10	1.03E-09		
Benzo(k)fluoranthene*	205-82-3	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Chrysene*	218-01-9	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		
Dibenzo(a,h)anthracene*	53-70-3	1.96E-04	2.35E-10	1.03E-09			1.96E-04	2.35E-10	1.03E-09			1.96E-04	2.35E-10	1.03E-09		
Indeno(1,2,3-cd)pyrene*	193-39-5	1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09			1.96E-04	3.53E-10	1.55E-09		

Toxic Air Pollutants Metals [4]	CAS Number	Reznor VR-2—60 Receiving Bay IRH 6 Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL	Reznor VR-2—60 Receiving Bay IRH 7 Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL	Reznor VR-2—60 Receiving Bay IRH 8 Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL
		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/yr)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)	
Mercury	7439-97-6	1.96E-04	5.10E-08	2.23E-07			1.96E-04	5.10E-08	2.23E-07			1.96E-04	5.10E-08	2.23E-07		
Arsenic	7440-38-2	1.96E-04	3.92E-08	1.72E-07	1.50E-06	Below	1.96E-04	3.92E-08	1.72E-07	1.50E-06	Below	1.96E-04	3.92E-08	1.72E-07	1.50E-06	Below
Nickel	7440-02-0	1.96E-04	4.12E-07	1.80E-06	2.75E-05	Below	1.96E-04	4.12E-07	1.80E-06	2.75E-05	Below	1.96E-04	4.12E-07	1.80E-06	2.75E-05	Below
Beryllium	7440-41-7	1.96E-04	2.35E-09	1.03E-08	2.80E-05	Below	1.96E-04	2.35E-09	1.03E-08	2.80E-05	Below	1.96E-04	2.35E-09	1.03E-08	2.80E-05	Below
Cadmium	7440-43-9	1.96E-04	2.16E-07	9.46E-07	3.70E-06	Below	1.96E-04	2.16E-07	9.46E-07	3.70E-06	Below	1.96E-04	2.16E-07	9.46E-07	3.70E-06	Below
Chromium	7440-47-3	1.96E-04	2.74E-07	1.20E-06	3.30E-02	Below	1.96E-04	2.74E-07	1.20E-06	3.30E-02	Below	1.96E-04	2.74E-07	1.20E-06	3.30E-02	Below
Cobalt	7440-48-4	1.96E-04	1.65E-08	7.23E-08	3.30E-03	Below	1.96E-04	1.65E-08	7.23E-08	3.30E-03	Below	1.96E-04	1.65E-08	7.23E-08	3.30E-03	Below
Manganese	7439-96-5	1.96E-04	7.45E-08	3.26E-07	6.70E-02	Below	1.96E-04	7.45E-08	3.26E-07	6.70E-02	Below	1.96E-04	7.45E-08	3.26E-07	6.70E-02	Below
Molybdenum	7439-98-7	1.96E-04	2.16E-07	9.46E-07	3.33E-01	Below	1.96E-04	2.16E-07	9.46E-07	3.33E-01	Below	1.96E-04	2.16E-07	9.46E-07	3.33E-01	Below
Selenium	7782-49-2	1.96E-04	4.70E-09	2.06E-08	1.30E-02	Below	1.96E-04	4.70E-09	2.06E-08	1.30E-02	Below	1.96E-04	4.70E-09	2.06E-08	1.30E-02	Below
Vanadium	1314-62-1	1.96E-04	4.51E-07	1.98E-06	3.00E-03	Below	1.96E-04	4.51E-07	1.98E-06	3.00E-03	Below	1.96E-04	4.51E-07	1.98E-06	3.00E-03	Below
Zinc	7440-66-6	1.96E-04	5.68E-06	2.49E-05	3.33E-01	Below	1.96E-04	5.68E-06	2.49E-05	3.33E-01	Below	1.96E-04	5.68E-06	2.49E-05	3.33E-01	Below
Barium	7440-39-3	1.96E-04	8.62E-07	3.78E-06	3.30E-02	Below	1.96E-04	8.62E-07	3.78E-06	3.30E-02	Below	1.96E-04	8.62E-07	3.78E-06	3.30E-02	Below
Copper	7440-50-8	1.96E-04	1.67E-07	7.31E-07	1.30E-02	Below	1.96E-04	1.67E-07	7.31E-07	1.30E-02	Below	1.96E-04	1.67E-07	7.31E-07	1.30E-02	Below
		Total Non-Metal HAPs	3.69E-04	1.62E-03			Total Non-Metal HAPs	3.69E-04	1.62E-03			Total Non-Metal HAPs	3.69E-04	1.62E-03		
		Total Metal HAPs	1.31E-06	5.72E-06			Total Metal HAPs	1.31E-06	5.72E-06			Total Metal HAPs	1.31E-06	5.72E-06		
		Total HAPs	3.70E-04	1.63E-03			Total HAPs	3.70E-04	1.63E-03			Total HAPs	3.70E-04	1.63E-03		

AgroFarma Twin Falls - Chobani Facility Emission Estimate
IRHs (NG)
Annual Operation 8,760 hours/year

Green House Gases	EF (Natural Gas) kg/MMBtu	HHV	Reference	Raznor VR-2—60 Receiveing Bay IRH 1			Raznor VR-2—60 Receiveing Bay IRH 2			Raznor VR-2—60 Receiveing Bay IRH 3			Raznor VR-2—60 Receiveing Bay IRH 4			Raznor VR-2—60 Receiveing Bay IRH 5		
				Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] metric ton/yr
CO_2	53.02	1.028E-03	40 CFR 98 Subpart C Equation C-1 Tier 1	196	1,716,960	93.58	196	1,716,960	93.58	196	1,716,960	93.58	196	1,716,960	93.58	196	1,716,960	93.58
N_2O	1.0E-04	1.028E-03	40 CFR 63 Subpart C Equation C-8 (Tiers 1 & 3)	196	1,716,960	1.77E-04	196	1,716,960	1.77E-04	196	1,716,960	1.77E-04	196	1,716,960	1.77E-04	196	1,716,960	1.77E-04
CH_4	1.0E-03	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	196	1,716,960	1.77E-03	196	1,716,960	1.77E-03	196	1,716,960	1.77E-03	196	1,716,960	1.77E-03	196	1,716,960	1.77E-03
CO2e			40 CFR 98 Part A			93.67			93.67			93.67			93.67			93.67

Notes

[5]Eqn C-1: $CO_2 = 1 \times 10^{-3} \times$ Fuel x HHV x EF
Fuel = Volume of fuel combusted per year, (SCF/Year)
EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)
HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)
1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[6]Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-3} \times$ Fuel x HHV x EF
Fuel = Volume of fuel combusted per year, (SCF/Year)
EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)
HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)
1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[7]CO_2e = (GWP CO_2 x CO_2 metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP N_2O x N_2O metric ton/yr)
Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1

GWP CO_2 =	1.00
GWP CH_4 =	21.00
GWP N_2O =	310.00

AgroFarma Twin Falls - Chobani Fac
IRHs (NG)
Annual Operation 8,760

Green House Gases	EF (Natural Gas) kg/MMBtu	Razner VR-2—60 Receiveing Bay IRH 6 Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Razner VR-2—60 Receiveing Bay IRH 7 Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Razner VR-2—60 Receiveing Bay IRH 8 Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)
CO_2	53.02	196	1,716,960	93.58	196	1,716,960	93.58	196	1,716,960	93.58
N_2O	1.0E-04	196	1,716,960	1.77E-04	196	1,716,960	1.77E-04	196	1,716,960	1.77E-04
CH_4	1.0E-03	196	1,716,960	1.77E-03	196	1,716,960	1.77E-03	196	1,716,960	1.77E-03
CO2e				93.67			93.67			93.67

Notes
[5]Eqn C-1: $CO_2 = 1 \times$
Fuel = Volume of
EF = Fuel-specific
HHV = Default hig
1×10^{-3} = Conver
[6]Eqn C-8: CH_4 or N_2
Fuel = Volume of
EF = Fuel-specific
HHV = Default hig
1×10^{-3} = Conver
[7]CO_2e = (GWP CO_2
Global Warming P
GWP CO_2 =
GWP CH_4 =
GWP N_2O =

Notes
[5]Eqn C-1: $CO_2 = 1 \times 10^{-3} \times$ Fuel x HHV x EF
Fuel = Volume of fuel combusted per year, (SCF/Year)
EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)
HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)
1×10^{-3} = Conversion Factor from Kilograms to Metric Tons
[6]Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-3} \times$ Fuel x HHV x EF
Fuel = Volume of fuel combusted per year, (SCF/Year)
EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)
HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)
1×10^{-3} = Conversion Factor from Kilograms to Metric Tons
[7]CO_2e = (GWP CO_2 x CO_2 metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP N_2O x N_2O metric ton/yr)
Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1
GWP CO_2 = 1.00
GWP CH_4 = 21.00
GWP N_2O = 310.00

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
RTUs (NG)
Annual Operation 8,760 hours/year

Emission Unit	Input (MMBTU/hr)
Main Office RTU 1 Carrier 48A5,T,030 (Indirect fired)	0.525
Main Office RTU 2 Carrier 48A5,T,030 (Indirect fired)	0.525
Main Office RTU 3 Carrier 48A5,T,030 (Indirect fired)	0.525
Main Office RTU 4 Carrier 48A5,T,030 (Indirect fired)	0.525
Main Office RTU 5 Carrier 48A5,T,030 (Indirect fired)	0.525
Main Office RTU 6 Carrier 48A5,T,030 (Indirect fired)	0.525
Meeting/RR/Plant Offices/Maintenance Office RTU Carrier 48A5,S,020 (Indirect fired RTU)	0.350
Maintenance/Parts/Fab RTU Carrier 48A5,S,060 (Indirect fired)	1.164

		Main Office RTU 1 Carrier 48A5,T,030 (Indirect fired)		Main Office RTU 2 Carrier 48A5,T,030 (Indirect fired)		Main Office RTU 3 Carrier 48A5,T,030 (Indirect fired)		Main Office RTU 4 Carrier 48A5,T,030 (Indirect fired)		Main Office RTU 5 Carrier 48A5,T,030 (Indirect fired)		Main Office RTU 6 Carrier 48A5,T,030 (Indirect fired)		Meeting/RR/Plant Offices/Maint Office RTU Carrier 48A5,S,020 (Indirect fired)		Maintenance/Parts/Fab RTU Carrier 48A5,S,060 (Indirect fired)	
Criteria Pollutant	Emission Factor[1] lb/10^6SCF	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)
Total Particulate Matter (PM)	7.6	3.91E-03	0.02	3.91E-03	0.02	3.91E-03	0.02	3.91E-03	0.02	3.91E-03	0.02	3.91E-03	0.02	2.61E-03	0.01	0.01	0.04
Nitrogen Oxides (NOx)	100	0.05	0.22	0.05	0.22	0.05	0.22	0.05	0.22	0.05	0.22	0.05	0.22	0.03	0.13	0.11	0.48
Sulfur Dioxide (SO_2)	0.6	3.09E-04	1.35E-03	3.09E-04	1.35E-03	3.09E-04	1.35E-03	3.09E-04	1.35E-03	3.09E-04	1.35E-03	3.09E-04	1.35E-03	2.06E-04	9.02E-04	6.85E-04	3.00E-03
Carbon Monoxide (CO)	84	0.04	0.18	0.04	0.18	0.04	0.18	0.04	0.18	0.04	0.18	0.04	0.18	0.03	0.13	0.10	0.44
VOC	5.5	2.83E-03	0.01	2.83E-03	0.01	2.83E-03	1.24E-02	2.83E-03	0.01	2.83E-03	0.01	2.83E-03	0.01	1.89E-03	8.28E-03	0.01	0.04
Lead	5.00E-04	2.57E-07	1.13E-06	2.57E-07	1.13E-06	2.57E-07	1.13E-06	2.57E-07	1.13E-06	2.57E-07	1.13E-06	2.57E-07	1.13E-06	1.72E-07	7.53E-07	5.71E-07	2.50E-06

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
RTUs (NG)
Annual Operation 8,760 hours/year

Toxic Air Pollutants Non-metals [2]	CAS No.	CAA 112(b) HAP	EPA AP-42 Natural Gas Emission Factor	Main Office RTU 1 Carrier 48A5,T,030 (Indirect fired)					Main Office RTU 2 Carrier 48A5,T,030 (Indirect fired)					Main Office RTU 3 Carrier 48A5,T,030 (Indirect fired)				
				Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL.	Emission Rate vs. EL.	Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL.	Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL.
			(lb/10^6 scf)	10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/yr)	(lb/hr)	
Pentane	109-66-0	No	2.60E+00	5.15E-04	1.34E-03	5.87E-03	1.18E+02	Below	5.15E-04	1.34E-03	5.87E-03	1.18E+02	Below	5.15E-04	1.34E-03	5.87E-03	1.18E+02	Below
Benzene	71-43-2	Yes	2.10E-03	5.15E-04	1.08E-06	4.73E-06	8.00E-04	Below	5.15E-04	1.08E-06	4.73E-06	8.00E-04	Below	5.15E-04	1.08E-06	4.73E-06	8.00E-04	Below
3-Methylchloranthrene	56-49-5	Yes	1.80E-06	5.15E-04	9.27E-10	4.06E-09	2.50E-06	Below	5.15E-04	9.27E-10	4.06E-09	2.50E-06	Below	5.15E-04	9.27E-10	4.06E-09	2.50E-06	Below
Benzo(a)pyrene*	50-32-8	Yes	1.20E-06	5.15E-04	6.18E-10	2.71E-09	2.00E-06	Below	5.15E-04	6.18E-10	2.71E-09	2.00E-06	Below	5.15E-04	6.18E-10	2.71E-09	2.00E-06	Below
Formaldehyde	50-00-0	Yes	7.50E-02	5.15E-04	3.86E-05	1.69E-04	5.10E-04	Below	5.15E-04	3.86E-05	1.69E-04	5.10E-04	Below	5.15E-04	3.86E-05	1.69E-04	5.10E-04	Below
POM (7-PAH)[3]		Yes		5.15E-04	6.49E-09	2.84E-08	2.00E-06	Below	5.15E-04	6.49E-09	2.84E-08	2.00E-06	Below	5.15E-04	6.49E-09	2.84E-08	2.00E-06	Below
Hexane	110-54-3	Yes	1.80E+00	5.15E-04	9.27E-04	4.06E-03	1.20E+01	Below	5.15E-04	9.27E-04	4.06E-03	1.20E+01	Below	5.15E-04	9.27E-04	4.06E-03	1.20E+01	Below
Naphthalene	91-20-3	Yes	6.10E-04	5.15E-04	3.14E-07	1.38E-06	9.10E-05	Below	5.15E-04	3.14E-07	1.38E-06	9.10E-05	Below	5.15E-04	3.14E-07	1.38E-06	9.10E-05	Below
Toluene	108-88-3	Yes	3.40E-03	5.15E-04	1.75E-06	7.67E-06	2.60E+01	Below	5.15E-04	1.75E-06	7.67E-06	2.50E+01	Below	5.15E-04	1.75E-06	7.67E-06	2.50E+01	Below
2-Methylnapthalene	97-57-6	Yes	2.40E-05	5.15E-04	1.24E-08	5.43E-08			5.15E-04	1.24E-08	5.43E-08			5.15E-04	1.24E-08	5.43E-08		
7, 12 - Dimethylbenz(a)anthracene		Yes	1.60E-05	5.15E-04	8.24E-09	3.61E-08			5.15E-04	8.24E-09	3.61E-08			5.15E-04	8.24E-09	3.61E-08		
Acenaphthene	83-32-9	Yes	1.80E-06	5.15E-04	9.27E-10	4.06E-09												
Acenaphyhylene	203-96-8	Yes	1.80E-06	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Anthracene	120-12-7	Yes	2.40E-06	5.15E-04	1.24E-09	5.43E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Dichlorobenzene	25321-22-6	Yes	1.20E-03	5.15E-04	6.18E-07	2.71E-06			5.15E-04	1.24E-09	5.43E-09			5.15E-04	1.24E-09	5.43E-09		
Flouranthene	206-44-0	Yes	3.00E-06	5.15E-04	1.55E-09	6.79E-09			5.15E-04	6.18E-07	2.71E-06			5.15E-04	6.18E-07	2.71E-06		
Fluorene	86-73-7	Yes	2.80E-06	5.15E-04	1.44E-09	6.31E-09			5.15E-04	1.55E-09	6.79E-09			5.15E-04	1.55E-09	6.79E-09		
Phenanthrene	85-01-8	Yes	1.70E-05	5.15E-04	8.76E-09	3.84E-08			5.15E-04	1.44E-09	6.31E-09			5.15E-04	1.44E-09	6.31E-09		
Benzo(a)anthracene*	56-55-3	Yes	1.80E-06	5.15E-04	9.27E-10	4.06E-09			5.15E-04	8.76E-09	3.84E-08			5.15E-04	8.76E-09	3.84E-08		
Benzo(b)fluoranthene*	205-82-3	Yes	1.80E-06	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Benzo(g,h,i)perylene	191-24-2	Yes	1.20E-06	5.15E-04	6.18E-10	2.71E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Benzo(k)fluoranthene*	205-82-3	Yes	1.80E-06	5.15E-04	9.27E-10	4.06E-09			5.15E-04	6.18E-10	2.71E-09			5.15E-04	6.18E-10	2.71E-09		
Chrysene*	218-01-9	Yes	1.80E-06	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Dibenzo(a,h)anthracene*	53-70-3	Yes	1.20E-06	5.15E-04	6.18E-10	2.71E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
									5.15E-04	6.18E-10	2.71E-09			5.15E-04	6.18E-10	2.71E-09		
Indeno(1,2,3-cd)pyrene*	193-39-5	Yes	1.80E-06	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

RTUs (NG)

Annual Operation 8,760 hours/year

Toxic Air Pollutants Metals [4]	CAS Number	CAA 112(b) HAP	Emission Factor (lb/10^5 scf)	Main Office RTU 1 Carrier 48A5,T,030 (Indirect fired) Input (10^6 SCF/hr)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL	Main Office RTU 2 Carrier 48A5,T,030 (Indirect fired) Input (10^6 SCF/hr)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL	Main Office RTU 3 Carrier 48A5,T,030 (Indirect fired) Input (10^6 SCF/hr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL
Mercury	7439-97-6	Yes	2.60E-04	5.15E-04	1.34E-07	5.87E-07			5.15E-04	1.34E-07	5.87E-07			5.15E-04	1.34E-07	5.87E-07		
Arsenic	7440-38-2	Yes	2.00E-04	5.15E-04	1.03E-07	4.51E-07	1.50E-06	Below	5.15E-04	1.03E-07	4.51E-07	1.50E-06	Below	5.15E-04	1.03E-07	4.51E-07	1.50E-06	Below
Nickel	7440-02-0	Yes	2.10E-03	5.15E-04	1.08E-06	4.73E-06	2.75E-05	Below	5.15E-04	1.08E-06	4.73E-06	2.75E-05	Below	5.15E-04	1.08E-06	4.73E-06	2.75E-05	Below
Beryllium	7440-41-7	Yes	1.20E-05	5.15E-04	6.18E-09	2.71E-08	2.80E-05	Below	5.15E-04	6.18E-09	2.71E-08	2.80E-05	Below	5.15E-04	6.18E-09	2.71E-08	2.80E-05	Below
Cadmium	7440-43-9	Yes	1.10E-03	5.15E-04	5.67E-07	2.48E-06	3.70E-06	Below	5.15E-04	5.67E-07	2.48E-06	3.70E-06	Below	5.15E-04	5.67E-07	2.48E-06	3.70E-06	Below
Chromium	7440-47-3	Yes	1.40E-03	5.15E-04	7.21E-07	3.16E-06	3.30E-02	Below	5.15E-04	7.21E-07	3.16E-06	3.30E-02	Below	5.15E-04	7.21E-07	3.16E-06	3.30E-02	Below
Cobalt	7440-48-4	Yes	8.40E-05	5.15E-04	4.33E-08	1.90E-07	3.30E-03	Below	5.15E-04	4.33E-08	1.90E-07	3.30E-03	Below	5.15E-04	4.33E-08	1.90E-07	3.30E-03	Below
Manganese	7439-96-5	Yes	3.80E-04	5.15E-04	1.96E-07	8.58E-07	6.70E-02	Below	5.15E-04	1.96E-07	8.58E-07	6.70E-02	Below	5.15E-04	1.96E-07	8.58E-07	6.70E-02	Below
Molybdenum	7439-98-7	Yes	1.10E-03	5.15E-04	5.67E-07	2.48E-06	3.33E-01	Below	5.15E-04	5.67E-07	2.48E-06	3.33E-01	Below	5.15E-04	5.67E-07	2.48E-06	3.33E-01	Below
Selenium	7782-49-2	Yes	2.40E-05	5.15E-04	1.24E-08	5.43E-08	1.30E-02	Below	5.15E-04	1.24E-08	5.43E-08	1.30E-02	Below	5.15E-04	1.24E-08	5.43E-08	1.30E-02	Below
Vanadium	1314-62-1	No	2.30E-03	5.15E-04	1.18E-06	5.17E-06	3.00E-03	Below	5.15E-04	1.18E-06	5.17E-06	3.00E-03	Below	5.15E-04	1.18E-06	5.17E-06	3.00E-03	Below
Zinc	7440-66-6	No	2.90E-02	5.15E-04	1.49E-05	6.53E-05	3.33E-01	Below	5.15E-04	1.49E-05	6.53E-05	3.33E-01	Below	5.15E-04	1.49E-05	6.53E-05	3.33E-01	Below
Barium	7440-39-3	No	4.40E-03	5.15E-04	2.27E-06	9.94E-06	3.30E-02	Below	5.15E-04	2.27E-06	9.94E-06	3.30E-02	Below	5.15E-04	2.27E-06	9.94E-06	3.30E-02	Below
Copper	7440-50-8	No	8.50E-04	5.15E-04	4.38E-07	1.92E-06	1.30E-02	Below	5.15E-04	4.38E-07	1.92E-06	1.30E-02	Below	5.15E-04	4.38E-07	1.92E-06	1.30E-02	Below
			Total Non-Metal HAPs		9.69E-04	4.25E-03			Total Non-Metal HAPs	9.69E-04	4.25E-03			Total Non-Mi	9.69E-04	4.25E-03		Total Non-I
			Total Metal HAPs		3.43E-06	1.50E-05			Total Metal HAPs	3.43E-06	1.50E-05			Total Metal H	3.43E-06	1.50E-05		Total I
			Total HAPs		9.72E-04	4.27E-03			Total HAPs	9.72E-04	4.27E-03			Total HAPs	9.72E-04	4.27E-03		

Notes:

[1] Criteria Pollutant emission factors for small uncontrolled boilers as stated AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-1 and 1.4-2. PM emission factor is assumed to equal PM10.
Conversion Factor: 1020 BTU/SCF

[2] Toxic Air Pollutants emission factors from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3.

[3] Polycyclic Organic Matter (POM) is considered as one TAP consisting of benzo(a)pyrene, benzo(a)anthracene, benzo(b)flouranthene, dibenzo(a,h)anthracene, chrysene, indenol(1,2,3,-cd)pyrene, and benzo(a)pyrene. Compounds constituting POM are designated as *.

[4] Toxic Air Pollutant Metal emission factors from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4.

Green House Gases	EF (Natural Gas) kg/MMBtu	HHV	Reference	Main Office RTU 1 Carrier 48A5,T,030 (Indirect fired) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] metric ton/yr	Main Office RTU 2 Carrier 48A5,T,030 (Indirect fired) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Main Office RTU 3 Carrier 48A5,T,030 (Indirect fired) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Main Office RTU 4 Carrier 48A5,T,030 (Indirect fired) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Main Office RTU 5 Carrier 48A5,T,030 (Indirect fired) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] metric ton/y
CO_2	53.02	1.028E-33	40 CFR 98 Subpart C Equation C-1 Tier 1	515	4,511,400	245.89	515	4,511,400	245.89	515	4,511,400	245.89	515	4,511,400	245.89	515	4,511,400	245.89
N_2O	1.0E-04	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	515	4,511,400	4.64E-04	515	4,511,400	4.64E-04	515	4,511,400	4.64E-04	515	4,511,400	4.64E-04	515	4,511,400	4.64E-04
CH_4	1.0E-03	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	515	4,511,400	4.64E-03	515	4,511,400	4.64E-03	515	4,511,400	4.64E-03	515	4,511,400	4.64E-03	515	4,511,400	4.64E-03
CO2e			40 CFR 98 Part A			246.13			246.13			246.13			246.13			246.13

Notes

[5] Eqn C-1: $CO_2 = 1 \times 10^{-3} \times$ Fuel $\times$ HHV $\times$ EF
Fuel = Volume of fuel combusted per year, (SCF/Year)
EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)
HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)
1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[6] Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-3} \times$ Fuel $\times$ HHV $\times$ EF
Fuel = Volume of fuel combusted per year, (SCF/Year)
EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)
HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)
1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[7] CO_2e = (GWP $CO_2 \times CO_2$ metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP $N_2O \times N_2O$ metric ton/yr)
Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1

GWP CO_2 =	1.00
GWP CH_4 =	21.00
GWP N_2O =	310.00

AgroFarma Twin Fall
RTUs (NG)
Annual Operation

Toxic Air Pollutants Non-metals [2]	Main Office RTU 4 Carrier 48A5,T,030 (indirect fired)					Main Office RTU 5 Carrier 48A5,T,030 (indirect fired)					Main Office RTU 6 Carrier 48A5,T,030 (indirect fired)				
	Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL	Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL	Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL
	10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)	
Pentane	5.15E-04	1.34E-03	5.87E-03	1.18E+02	Below	5.15E-04	1.34E-03	5.87E-03	1.18E+02	Below	5.15E-04	1.34E-03	5.87E-03	1.18E+02	Below
Benzene	5.15E-04	1.08E-06	4.73E-06	8.00E-04	Below	5.15E-04	1.08E-06	4.73E-06	8.00E-04	Below	5.15E-04	1.08E-06	4.73E-06	8.00E-04	Below
3-Methylchloranthrene	5.15E-04	9.27E-10	4.06E-09	2.50E-06	Below	5.15E-04	9.27E-10	4.06E-09	2.50E-06	Below	5.15E-04	9.27E-10	4.06E-09	2.50E-06	Below
Benzo(a)pyrene*	5.15E-04	6.18E-10	2.71E-09	2.00E-06	Below	5.15E-04	6.18E-10	2.71E-09	2.00E-06	Below	5.15E-04	6.18E-10	2.71E-09	2.00E-06	Below
Formaldehyde	5.15E-04	3.86E-05	1.69E-04	5.10E-04	Below	5.15E-04	3.86E-05	1.69E-04	5.10E-04	Below	5.15E-04	3.86E-05	1.69E-04	5.10E-04	Below
POM (7-PAH)[3]	5.15E-04	6.49E-09	2.84E-08	2.00E-06	Below	5.15E-04	6.49E-09	2.84E-08	2.00E-06	Below	5.15E-04	6.49E-09	2.84E-08	2.00E-06	Below
Hexane	5.15E-04	9.27E-04	4.06E-03	1.20E+01	Below	5.15E-04	9.27E-04	4.06E-03	1.20E+01	Below	5.15E-04	9.27E-04	4.06E-03	1.20E+01	Below
Naphthalene	5.15E-04	3.14E-07	1.38E-06	9.10E-05	Below	5.15E-04	3.14E-07	1.38E-06	9.10E-05	Below	5.15E-04	3.14E-07	1.38E-06	9.10E-05	Below
Toluene	5.15E-04	1.75E-06	7.67E-06	2.50E+01	Below	5.15E-04	1.75E-06	7.67E-06	2.50E+01	Below	5.15E-04	1.75E-06	7.67E-06	2.50E+01	Below
2-Methylnapthalene	5.15E-04	1.24E-08	5.43E-08			5.15E-04	1.24E-08	5.43E-08			5.15E-04	1.24E-08	5.43E-08		
7, 12 - Dimethylbenz(a)anthracene	5.15E-04	8.24E-09	3.61E-08			5.15E-04	8.24E-09	3.61E-08			5.15E-04	8.24E-09	3.61E-08		
Acenaphthene	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Acenaphthylene	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Anthracene	5.15E-04	1.24E-09	5.43E-09			5.15E-04	1.24E-09	5.43E-09			5.15E-04	1.24E-09	5.43E-09		
Dichlorobenzene	5.15E-04	6.18E-07	2.71E-06			5.15E-04	6.18E-07	2.71E-06			5.15E-04	6.18E-07	2.71E-06		
Flouranthene	5.15E-04	1.55E-09	6.79E-09			5.15E-04	1.55E-09	6.79E-09			5.15E-04	1.55E-09	6.79E-09		
Fluorene	5.15E-04	1.44E-09	6.31E-09			5.15E-04	1.44E-09	6.31E-09			5.15E-04	1.44E-09	6.31E-09		
Phenanthrene	5.15E-04	8.76E-09	3.84E-08			5.15E-04	8.76E-09	3.84E-08			5.15E-04	8.76E-09	3.84E-08		
Benzo(a)anthracene*	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Benzo(b)fluoranthene*	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Benzo(g,h,i)perylene	5.15E-04	6.18E-10	2.71E-09			5.15E-04	6.18E-10	2.71E-09			5.15E-04	6.18E-10	2.71E-09		
Benzo(k)fluoranthene*	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Chrysene*	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		
Dibenzo(a,h)anthracene*	5.15E-04	6.18E-10	2.71E-09			5.15E-04	6.18E-10	2.71E-09			5.15E-04	6.18E-10	2.71E-09		
Indeno(1,2,3-cd)pyrene*	5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09			5.15E-04	9.27E-10	4.06E-09		

AgroFarma Twin Fall
RTUs (NG)
Annual Operation

Toxic Air Pollutants Metals [4]	Main Office RTU 4 Carrier 48A5,T,030 (Indirect fired) Input 10^6SCF/hr	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL
Mercury	5.15E-04	1.34E-07	5.87E-07		
Arsenic	5.15E-04	1.03E-07	4.51E-07	1.50E-06	Below
Nickel	5.15E-04	1.08E-06	4.73E-06	2.75E-05	Below
Beryllium	5.15E-04	6.18E-09	2.71E-08	2.80E-05	Below
Cadmium	5.15E-04	5.67E-07	2.48E-06	3.70E-06	Below
Chromium	5.15E-04	7.21E-07	3.16E-06	3.30E-02	Below
Cobalt	5.15E-04	4.33E-06	1.90E-07	3.30E-03	Below
Manganese	5.15E-04	1.96E-07	8.58E-07	6.70E-02	Below
Molybdenum	5.15E-04	5.67E-07	2.48E-06	3.33E-01	Below
Selenium	5.15E-04	1.24E-08	5.43E-08	1.30E-02	Below
Vanadium	5.15E-04	1.18E-06	5.17E-06	3.00E-03	Below
Zinc	5.15E-04	1.49E-05	6.53E-05	3.33E-01	Below
Barium	5.15E-04	2.27E-06	9.94E-06	3.30E-02	Below
Copper	5.15E-04	4.38E-07	1.92E-06	1.30E-02	Below
	Metal HAPs	9.69E-04	4.25E-03		
	Metal HAPs	3.43E-06	1.50E-05		
	Total HAPs	9.72E-04	4.27E-03		

Toxic Air Pollutants Metals [4]	Main Office RTU 5 Carrier 48A5,T,030 (Indirect fired) Input 10^6SCF/hr	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL
Mercury	5.15E-04	1.34E-07	5.87E-07		
Arsenic	5.15E-04	1.03E-07	4.51E-07	1.50E-06	Below
Nickel	5.15E-04	1.08E-06	4.73E-06	2.75E-05	Below
Beryllium	5.15E-04	6.18E-09	2.71E-08	2.80E-05	Below
Cadmium	5.15E-04	5.67E-07	2.48E-06	3.70E-06	Below
Chromium	5.15E-04	7.21E-07	3.16E-06	3.30E-02	Below
Cobalt	5.15E-04	4.33E-06	1.90E-07	3.30E-03	Below
Manganese	5.15E-04	1.96E-07	8.58E-07	6.70E-02	Below
Molybdenum	5.15E-04	5.67E-07	2.48E-06	3.33E-01	Below
Selenium	5.15E-04	1.24E-08	5.43E-08	1.30E-02	Below
Vanadium	5.15E-04	1.18E-06	5.17E-06	3.00E-03	Below
Zinc	5.15E-04	1.49E-05	6.53E-05	3.33E-01	Below
Barium	5.15E-04	2.27E-06	9.94E-06	3.30E-02	Below
Copper	5.15E-04	4.38E-07	1.92E-06	1.30E-02	Below
	Total Non-Metal HAPs	9.69E-04	4.25E-03		
	Total Metal HAPs	3.43E-06	1.50E-05		
	Total HAPs	9.72E-04	4.27E-03		

Toxic Air Pollutants Metals [4]	Main Office RTU 6 Carrier 48A5,T,030 (Indirect fired) Input 10^6SCF/hr	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585 or 586 EL (lb/hr)	Emission Rate vs. EL
Mercury	5.15E-04	1.34E-07	5.87E-07		
Arsenic	5.15E-04	1.03E-07	4.51E-07	1.50E-06	Below
Nickel	5.15E-04	1.08E-06	4.73E-06	2.75E-05	Below
Beryllium	5.15E-04	6.18E-09	2.71E-08	2.80E-05	Below
Cadmium	5.15E-04	5.67E-07	2.48E-06	3.70E-06	Below
Chromium	5.15E-04	7.21E-07	3.16E-06	3.30E-02	Below
Cobalt	5.15E-04	4.33E-06	1.90E-07	3.30E-03	Below
Manganese	5.15E-04	1.96E-07	8.58E-07	6.70E-02	Below
Molybdenum	5.15E-04	5.67E-07	2.48E-06	3.33E-01	Below
Selenium	5.15E-04	1.24E-08	5.43E-08	1.30E-02	Below
Vanadium	5.15E-04	1.18E-06	5.17E-06	3.00E-03	Below
Zinc	5.15E-04	1.49E-05	6.53E-05	3.33E-01	Below
Barium	5.15E-04	2.27E-06	9.94E-06	3.30E-02	Below
Copper	5.15E-04	4.38E-07	1.92E-06	1.30E-02	Below
	Total Non-Metal HAPs	9.69E-04	4.25E-03		
	Total Metal HAPs	3.43E-06	1.50E-05		
	Total HAPs	9.72E-04	4.27E-03		

Green House Gases	Main Office RTU 6 Carrier 48A5,T,030 (Indirect fired) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Meeting/RR/Plant Offices/Maint Office RTU Carrier 48A5,S,020 (Indirect fired) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)	Maintenance/Parts/Fab RTU Carrier 48A5,S,060 (Indirect fired) Input (SCF/hr)	Input (SCF/yr)	Emission Rate[5,6,7] (metric ton/yr)
CO_2	515	4,511,400	245.89	343	3,004,680	163.77	1,141	9,995,160	544.78
N_2O	515	4,511,400	4.64E-04	343	3,004,680	3.09E-04	1,141	9,995,160	1.03E-03
CH_4	515	4,511,400	4.64E-03	343	3,004,680	3.09E-03	1,141	9,995,160	0.01
CO2e			248.13			163.93			545.31

Notes

[5]Eqn C-1: $CO_2 = 1 \times 10^{-3} \times$ Fuel x HHV x EF
Fuel = Volume of fuel combusted per year, (SCF/Year)
EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)
HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)
1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[6]Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-3} \times$ Fuel x HHV x EF
Fuel = Volume of fuel combusted per year, (SCF/Year)
EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)
HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)
1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[7]CO_2e = (GWP CO_2 x CO_2 metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP N_2O x N_2O metric ton/yr)
Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1

GWP CO_2 =	1.00
GWP CH_4 =	21.00
GWP N_2O =	310.00

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Toxic Air Pollutants Non-metals [2]	Meeting/RR/Plant Offices/Maint Office RTU Carrier 48A5,S,020 (Indirect fired)					Maintenance/Parts/Fab RTU Carrier 48A5,S,060 (Indirect fired)				
	Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL	Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL
	10^6SCF/hr	(lb/hr)	(ton/yr)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)	
Pentane	3.43E-04	8.92E-04	3.91E-03	1.18E+02	Below	1.14E-03	2.96E-03	1.30E-02	1.18E+02	Below
Benzene	3.43E-04	7.20E-07	3.15E-06	8.00E-04	Below	1.14E-03	2.39E-06	1.05E-05	8.00E-04	Below
3-Methylchloranthrene	3.43E-04	6.17E-10	2.70E-09	2.60E-06	Below	1.14E-03	2.05E-09	8.98E-09	2.50E-06	Below
Benzo(a)pyrene*	3.43E-04	4.12E-10	1.80E-09	2.00E-06	Below	1.14E-03	1.37E-09	6.00E-09	2.00E-06	Below
Formaldehyde	3.43E-04	2.57E-05	1.13E-04	5.10E-04	Below	1.14E-03	8.55E-05	3.74E-04	5.10E-04	Below
POM (7-PAH)[3]	3.43E-04	4.32E-09	1.89E-08	2.00E-06	Below	1.14E-03	1.44E-08	6.29E-08	2.00E-06	Below
Hexane	3.43E-04	6.17E-04	2.70E-03	1.20E+01	Below	1.14E-03	2.05E-03	8.98E-03	1.20E+01	Below
Naphthalene	3.43E-04	2.09E-07	9.15E-07	9.10E-05	Below	1.14E-03	6.95E-07	3.04E-06	9.10E-05	Below
Toluene	3.43E-04	1.17E-06	5.12E-06	2.50E+01	Below	1.14E-03	3.88E-06	1.70E-05	2.50E+01	Below
2-Methylnapthalene	3.43E-04	8.23E-09	3.60E-08			1.14E-03	2.74E-08	1.20E-07		
7, 12 - Dimethylbenz(a)anthracene	3.43E-04	5.49E-09	2.40E-08			1.14E-03	1.82E-08	7.97E-08		
Acenaphthene	3.43E-04	6.17E-10	2.70E-09			1.14E-03	2.05E-09	8.98E-09		
Acenaphyhylene	3.43E-04	6.17E-10	2.70E-09			1.14E-03	2.05E-09	8.98E-09		
Anthracene	3.43E-04	8.23E-10	3.60E-09			1.14E-03	2.74E-09	1.20E-08		
Dichlorobenzene	3.43E-04	4.12E-07	1.80E-06			1.14E-03	1.37E-06	6.00E-06		
Flouranthene	3.43E-04	1.03E-09	4.51E-09			1.14E-03	3.42E-09	1.50E-08		
Fluorene	3.43E-04	9.60E-10	4.20E-09			1.14E-03	3.19E-09	1.40E-08		
Phenanthrene	3.43E-04	5.83E-09	2.55E-08			1.14E-03	1.94E-08	8.50E-08		
Benzo(a)anthracene*	3.43E-04	6.17E-10	2.70E-09			1.14E-03	2.05E-09	8.98E-09		
Benzo(b)fluoranthene*	3.43E-04	6.17E-10	2.70E-09			1.14E-03	2.05E-09	8.98E-09		
Benzo(g,h,i)perylene	3.43E-04	4.12E-10	1.80E-09			1.14E-03	1.37E-09	6.00E-09		
Benzo(k)fluoranthene*	3.43E-04	6.17E-10	2.70E-09			1.14E-03	2.05E-09	8.98E-09		
Chrysene*	3.43E-04	6.17E-10	2.70E-09			1.14E-03	2.05E-09	8.98E-09		
Dibenzo(a,h)anthracene*	3.43E-04	4.12E-10	1.80E-09			1.14E-03	1.37E-09	6.00E-09		
Indeno(1,2,3-cd)pyrene*	3.43E-04	6.17E-10	2.70E-09			1.14E-03	2.05E-09	8.98E-09		

AgroFarma Twin Fall
RTUs (NG)
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Toxic Air Pollutants Metals [4]	Meeting/RR/Plant Offices/Maint Office RTU Carrier 48A5,S,020 (Indirect fired) Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL	Maintenance/Parts/Fab RTU Carrier 48A5,S,060 (Indirect fired) Input	Emission Rate	Emission Rate	IDAPA 58.01.01.585 or 586 EL	Emission Rate vs. EL
	10^6SCF/hr	(lb/hr)	(ton/yr)	(lb/hr)		10^6SCF/hr	(lb/hr)	(ton/year)	(lb/hr)	
Mercury	3.43E-04	8.92E-08	3.91E-07			1.14E-03	2.96E-07	1.30E-06		
Arsenic	3.43E-04	6.86E-08	3.00E-07	1.50E-06	Below	1.14E-03	2.28E-07	9.99E-07	1.50E-06	Below
Nickel	3.43E-04	7.20E-07	3.15E-06	2.75E-05	Below	1.14E-03	2.39E-06	1.05E-05	2.75E-05	Below
Beryllium	3.43E-04	4.12E-09	1.80E-08	2.80E-05	Below	1.14E-03	1.37E-08	6.00E-08	2.80E-05	Below
Cadmium	3.43E-04	3.77E-07	1.65E-06	3.70E-06	Below	1.14E-03	1.25E-06	5.48E-06	3.70E-06	Below
Chromium	3.43E-04	4.80E-07	2.10E-06	3.30E-02	Below	1.14E-03	1.60E-06	7.01E-06	3.30E-02	Below
Cobalt	3.43E-04	2.88E-08	1.26E-07	3.30E-03	Below	1.14E-03	9.58E-08	4.20E-07	3.30E-03	Below
Manganese	3.43E-04	1.30E-07	5.69E-07	6.70E-02	Below	1.14E-03	4.33E-07	1.90E-06	6.70E-02	Below
Molybdenum	3.43E-04	3.77E-07	1.65E-06	3.33E-01	Below	1.14E-03	1.25E-06	5.48E-06	3.33E-01	Below
Selenium	3.43E-04	8.23E-09	3.60E-08	1.30E-02	Below	1.14E-03	2.74E-08	1.20E-07	1.30E-02	Below
Vanadium	3.43E-04	7.89E-07	3.46E-06	3.00E-03	Below	1.14E-03	2.62E-06	1.15E-05	3.00E-03	Below
Zinc	3.43E-04	9.95E-06	4.36E-05	3.33E-01	Below	1.14E-03	3.31E-05	1.45E-04	3.33E-01	Below
Barium	3.43E-04	1.51E-06	6.61E-06	3.30E-02	Below	1.14E-03	5.02E-06	2.20E-05	3.30E-02	Below
Copper	3.43E-04	2.92E-07	1.28E-06	1.30E-02	Below	1.14E-03	9.69E-07	4.24E-06	1.30E-02	Below
Total Non-Metal HAPs		6.45E-04	2.82E-03			Total Non-Metal HAPs	2.14E-03	9.39E-03		
Total Metal HAPs		2.28E-06	9.99E-06			Total Metal HAPs	7.58E-06	3.33E-05		
Total HAPs		6.47E-04	2.83E-03			Total HAPs	2.15E-03	0.01		

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 1

Boiler Heat Input (MMBTU/hr)	32.659
Manufacturer	Cleaver Brooks
Model No.	CBLE-700-800
Fuel Type	Natural Gas
Natural Gas Fuel Heat Value (BTU/SCF)	1,020
Natural Gas Use (10^6 scf/hr)	0.0320
Annual Operation (hrs/yr)	8,760

Cleaver Brooks Boiler Expected Emission Data for Model CB(LE)

Criteria Pollutant	Emission Factor[1] (lb/MM Btu)	Emission Rate (lb/hr)	Emission Rate (ton/year)
Total Particulate Matter (PM)	0.010	0.33	1.45
Nitrogen Oxides (NOx)	0.071	2.32	10.16
Sulfur Dioxide (SO_2)	0.0006	0.02	0.09
Carbon Monoxide (CO)	0.036	1.18	5.17
VOC	0.004	0.13	0.57
Lead[2]	5.00E-04	1.60E-05	7.01E-05

PM gr/scf at 3% O2 = PM lb/MMBTU x (20.9-3)/20.9 x 7000 gr/1 lb x 1/f Factor for NG dscf/MMBTU

PM gr/scf at 3% O2 **0.007 gr/dscf**

where:

f factor for NG = 8710 dscf/MMBTU 40 CFR Part 75 specifies a Fd value of 8,710 dscf/mmBtu

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 1

Toxic Air Pollutants Non-metals [3]	CAS No.	EPA AP-42 Natural Gas Emission Factor (lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL	CAA 112(b) HAP?
Pentane	109-66-0	2.60E+00	8.32E-02	3.64E-01	1.18E+02	Below	No
Benzene	71-43-2	2.10E-03	6.72E-05	2.94E-04	8.00E-04	Below	Yes
3-Methylchloranthrene	56-49-5	1.80E-06	5.76E-08	2.52E-07	2.50E-06	Below	Yes
Benzo(a)pyrene*	50-32-8	1.20E-06	3.84E-08	1.68E-07	2.00E-06	Below	Yes
Formaldehyde	50-00-0	7.50E-02	2.40E-03	1.05E-02	5.10E-04	Exceeds	Yes
POM (7-PAH)[4]			3.65E-07	1.60E-06	2.00E-06	Below	Yes
Hexane	110-54-3	1.80E+00	5.76E-02	2.52E-01	1.20E+01	Below	Yes
Naphthalene	91-20-3	6.10E-04	1.95E-05	8.54E-05	9.10E-05	Below	Yes
Toluene	108-88-3	3.40E-03	1.09E-04	4.77E-04	2.50E+01	Below	Yes
2-Methylnapthalene	97-57-6	2.40E-05	7.68E-07	3.36E-06			Yes
7, 12 - Dimethylbenz(a)anthracene		1.60E-05	5.12E-07	2.24E-06			Yes
Acenaphthene	83-32-9	1.80E-06	5.76E-08	2.52E-07			Yes
Acenaphyhylene	203-96-8	1.80E-06	5.76E-08	2.52E-07			Yes
Anthracene	120-12-7	2.40E-06	7.68E-08	3.36E-07			Yes
Dichlorobenzene	25321-22-6	1.20E-03	3.84E-05	1.68E-04			Yes
Flouranthene	206-44-0	3.00E-06	9.60E-08	4.20E-07			Yes
Fluorene	86-73-7	2.80E-06	8.96E-08	3.92E-07			Yes
Phenanthrene	85-01-8	1.70E-05	5.44E-07	2.38E-06			Yes
Benzo(a)anthracene*	56-55-3	1.80E-06	5.76E-08	2.52E-07			Yes
Benzo(b)fluoranthene*	205-82-3	1.80E-06	5.76E-08	2.52E-07			Yes
Benzo(g,h,i)perylene	191-24-2	1.20E-06	3.84E-08	1.68E-07			Yes
Benzo(k)fluoranthene*	205-82-3	1.80E-06	5.76E-08	2.52E-07			Yes
Chrysene*	218-01-9	1.80E-06	5.76E-08	2.52E-07			Yes
Dibenzo(a,h)anthracene*	53-70-3	1.20E-06	3.84E-08	1.68E-07			Yes
Indeno(1,2,3-cd)pyrene*	193-39-5	1.80E-06	5.76E-08	2.52E-07			Yes

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 1

Toxic Air Pollutants Metals [5]	CAS Number	Emission Factor (lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	PTE Emission Rate vs. EL	CAA 112(b) HAP?
Mercury	7439-97-6	2.60E-04	8.32E-06	3.64E-05			Yes
Arsenic	7440-38-2	2.00E-04	6.40E-06	2.80E-05	1.50E-06	Exceeds	Yes
Nickel	7440-02-0	2.10E-03	6.72E-05	2.94E-04	2.75E-05	Exceeds	Yes
Beryllium	7440-41-7	1.20E-05	3.84E-07	1.68E-06	2.80E-05	Below	Yes
Cadmium	7440-43-9	1.10E-03	3.52E-05	1.54E-04	3.70E-06	Exceeds	Yes
Chromium	7440-47-3	1.40E-03	4.48E-05	1.96E-04	3.30E-02	Below	Yes
Cobalt	7440-48-4	8.40E-05	2.69E-06	1.18E-05	3.30E-03	Below	Yes
Manganese	7439-96-5	3.80E-04	1.22E-05	5.34E-05	6.70E-02	Below	Yes
Molybdenum	7439-98-7	1.10E-03	3.52E-05	1.54E-04	3.33E-01	Below	Yes
Selenium	7782-49-2	2.40E-05	7.68E-07	3.36E-06	1.30E-02	Below	Yes
Vanadium	1314-62-1	2.30E-03	7.36E-05	3.22E-04	3.00E-03	Below	No
Zinc	7440-66-6	2.90E-02	9.28E-04	4.06E-03	3.33E-01	Below	No
Barium	7440-39-3	4.40E-03	1.41E-04	6.18E-04	3.30E-02	Below	No
Copper	7440-50-8	8.50E-04	2.72E-05	1.19E-04	1.30E-02	Below	No
		Total Non-Metal HAPs	8.02E-02	2.64E-01			
		Total Metal HAPs	2.13E-04	9.33E-04			
		Total HAPs	0.06	0.26			

Notes:

[1] Criteria Pollutants as stated in Cleaver Brooks Boiler Expected Emission Data for Model CB(LE). PM emission factor is assumed to equal PM10.

[2] Lead Emission factor from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-2. Emission factor units is lb/10^6 SCF.

[3] Toxic Air Pollutants (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3).

[4] Polycyclic Organic Matter (POM) is considered as one TAP consisting of benzo(a)pyrene, benzo(a)anthracene, benzo(b)flouranthene, dibenzo(a,h)anthracene, chrysene, indenol(1,2,3,-cd)pyrene, and benzo(a)pyrene. Compounds constituting POM are designated as *.

[5] Metals from Natural Gas Combustion (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4).

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 1

Green House Gases	EF (Natural Gas) kg/MMBtu	HHV	Reference	Boiler 1 Input (SCF/hr)	Boiler 1 Input (SCF/yr)	Emission Rate[6,7,8] (metric ton/yr)	Emission Rate[6,7,8] (ton/year)
CO_2	53.02	1.028E-03	40 CFR 98 Subpart C	32,019	280,486,440	15,287.79	16,851.73
N_2O	1.0E-04	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	32,019	280,486,440	2.88E-02	3.175E-02
CH_4	1.0E-03	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	32,019	280,486,440	2.88E-01	3.175E-01
CO2e			40 CFR 98 Part A			15,302.77	16,868.24

Notes

[6]Eqn C-1: $CO_2 = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[7]Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[8]CO_2e = (GWP CO_2 x CO_2 metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP N_2O x N_2O metric ton/yr)

Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1

GWP CO_2 =	1.00
GWP CH_4 =	21.00
GWP N_2O =	310.00

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 2

Boiler Heat Input (MMBTU/hr)	32.659
Manufacturer	Cleaver Brooks
Model No.	CBLE-700-800
Fuel Type	Natural Gas
Natural Gas Fuel Heat Value (BTU/SCF)	1,020
Natural Gas Use (10^6 scf/hr)	0.0320
Annual Operation (hrs/yr)	8,760

Cleaver Brooks Boiler Expected Emission Data for Model CB(LE)

Criteria Pollutant	Emission Factor[1] (lb/MM Btu)	Emission Rate (lb/hr)	Emission Rate (ton/year)
Total Particulate Matter (PM)	0.010	0.33	1.45
Nitrogen Oxides (NOx)	0.071	2.32	10.16
Sulfur Dioxide (SO_2)	0.0006	0.02	0.09
Carbon Monoxide (CO)	0.036	1.18	5.17
VOC	0.004	0.13	0.57
Lead[2]	5.00E-04	1.60E-05	7.01E-05

PM gr/scf at 3% O2 = PM lb/MMBTU x (20.9-3)/20.9 x 7000 gr/1 lb x 1/f Factor for NG dscf/MMBTU

PM gr/scf at 3% O2 **0.007 gr/dscf**

where:

f factor for NG = 8710 dscf/MMBTU 40 CFR Part 75 specifies a Fd value of 8,710 dscf/mmBtu

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Natural Gas Boiler 2

Toxic Air Pollutants Non-metals [3]	CAS No.	EPA AP-42 Natural Gas Emission Factor (lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL	CAA 112(b) HAP?
Pentane	109-66-0	2.60E+00	8.32E-02	3.64E-01	1.18E+02	Below	No
Benzene	71-43-2	2.10E-03	6.72E-05	2.94E-04	8.00E-04	Below	Yes
3-Methylchloranthrene	56-49-5	1.80E-06	5.76E-08	2.52E-07	2.50E-06	Below	Yes
Benzo(a)pyrene*	50-32-8	1.20E-06	3.84E-08	1.68E-07	2.00E-06	Below	Yes
Formaldehyde	50-00-0	7.50E-02	2.40E-03	1.05E-02	5.10E-04	Exceeds	Yes
POM (7-PAH)[4]			3.65E-07	1.60E-06	2.00E-06	Below	Yes
Hexane	110-54-3	1.80E+00	5.76E-02	2.52E-01	1.20E+01	Below	Yes
Naphthalene	91-20-3	6.10E-04	1.95E-05	8.54E-05	9.10E-05	Below	Yes
Toluene	108-88-3	3.40E-03	1.09E-04	4.77E-04	2.50E+01	Below	Yes
2-Methylnapthalene	97-57-6	2.40E-05	7.68E-07	3.36E-06			Yes
7, 12 - Dimethylbenz(a)anthracene		1.60E-05	5.12E-07	2.24E-06			Yes
Acenaphthene	83-32-9	1.80E-06	5.76E-08	2.52E-07			Yes
Acenaphyhylene	203-96-8	1.80E-06	5.76E-08	2.52E-07			Yes
Anthracene	120-12-7	2.40E-06	7.68E-08	3.36E-07			Yes
Dichlorobenzene	25321-22-6	1.20E-03	3.84E-05	1.68E-04			Yes
Flouranthene	206-44-0	3.00E-06	9.60E-08	4.20E-07			Yes
Fluorene	86-73-7	2.80E-06	8.96E-08	3.92E-07			Yes
Phenanthrene	85-01-8	1.70E-05	5.44E-07	2.38E-06			Yes
Benzo(a)anthracene*	56-55-3	1.80E-06	5.76E-08	2.52E-07			Yes
Benzo(b)fluoranthene*	205-82-3	1.80E-06	5.76E-08	2.52E-07			Yes
Benzo(g,h,i)perylene	191-24-2	1.20E-06	3.84E-08	1.68E-07			Yes
Benzo(k)fluoranthene*	205-82-3	1.80E-06	5.76E-08	2.52E-07			Yes
Chrysene*	218-01-9	1.80E-06	5.76E-08	2.52E-07			Yes
Dibenzo(a,h)anthracene*	53-70-3	1.20E-06	3.84E-08	1.68E-07			Yes
Indeno(1,2,3-cd)pyrene*	193-39-5	1.80E-06	5.76E-08	2.52E-07			Yes

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 2

Toxic Air Pollutants Metals [5]	CAS Number	Emission Factor (lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	PTE Emission Rate vs. EL	CAA 112(b) HAP?
Mercury	7439-97-6	2.60E-04	8.32E-06	3.64E-05			Yes
Arsenic	7440-38-2	2.00E-04	6.40E-06	2.80E-05	1.50E-06	Exceeds	Yes
Nickel	7440-02-0	2.10E-03	6.72E-05	2.94E-04	2.75E-05	Exceeds	Yes
Beryllium	7440-41-7	1.20E-05	3.84E-07	1.68E-06	2.80E-05	Below	Yes
Cadmium	7440-43-9	1.10E-03	3.52E-05	1.54E-04	3.70E-06	Exceeds	Yes
Chromium	7440-47-3	1.40E-03	4.48E-05	1.96E-04	3.30E-02	Below	Yes
Cobalt	7440-48-4	8.40E-05	2.69E-06	1.18E-05	3.30E-03	Below	Yes
Manganese	7439-96-5	3.80E-04	1.22E-05	5.34E-05	6.70E-02	Below	Yes
Molybdenum	7439-98-7	1.10E-03	3.52E-05	1.54E-04	3.33E-01	Below	Yes
Selenium	7782-49-2	2.40E-05	7.68E-07	3.36E-06	1.30E-02	Below	Yes
Vanadium	1314-62-1	2.30E-03	7.36E-05	3.22E-04	3.00E-03	Below	No
Zinc	7440-66-6	2.90E-02	9.28E-04	4.06E-03	3.33E-01	Below	No
Barium	7440-39-3	4.40E-03	1.41E-04	6.18E-04	3.30E-02	Below	No
Copper	7440-50-8	8.50E-04	2.72E-05	1.19E-04	1.30E-02	Below	No
		Total Non-Metal HAPs	6.02E-02	2.64E-01			
		Total Metal HAPs	2.13E-04	9.33E-04			
		Total HAPs	0.06	0.26			

Notes:

[1] Criteria Pollutants as stated in Cleaver Brooks Boiler Expected Emission Data for Model CB(LE). PM emission factor is assumed to equal PM10.

[2] Lead Emission factor from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-2. Emission factor units is lb/10^6 SCF.

[3] Toxic Air Pollutants (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3).

[4] Polycyclic Organic Matter (POM) is considered as one TAP consisting of benzo(a)pyrene, benzo(a)anthracene, benzo(b)flouranthene, dibenzo(a,h)anthracene, chrysene, indenol(1,2,3,-cd)pyrene, and benzo(a)pyrene. Compounds constituting POM are designated as *.

[5] Metals from Natural Gas Combustion (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4).

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Natural Gas Boiler 2

Green House Gases	EF (Natural Gas) kg/MMBtu	HHV	Reference	Boiler 2 Input (SCF/hr)	Boiler 2 Input (SCF/yr)	Boiler 2 Emission Rate[5,7,8] (metric ton/yr)	Boiler 2 Emission Rate[5,7,8] (ton/year)
CO_2	53.02	1.028E-03	40 CFR 98 Subpart C	32,019	280,486,440	15,287.79	16,851.73
N_2O	1.0E-04	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	32,019	280,486,440	2.88E-02	3.175E-02
CH_4	1.0E-03	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	32,019	280,486,440	2.88E-01	3.175E-01
CO2e			40 CFR 98 Part A			15,302.77	16,868.24

Notes

[6]Eqn C-1: $CO_2 = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[7]Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[8]CO_2e = (GWP CO_2 x CO_2 metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP N_2O x N_2O metric ton/yr)

Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1

GWP CO_2 =	1.00
GWP CH_4 =	21.00
GWP N_2O =	310.00

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 3

Boiler Heat Input (MMBTU/hr)	32.659
Manufacturer	Cleaver Brooks
Model No.	CBLE-700-800
Fuel Type	Natural Gas
Natural Gas Fuel Heat Value (BTU/SCF)	1,020
Natural Gas Use (10^6 scf/hr)	0.0320
Annual Operation (hrs/yr)	8,760

Cleaver Brooks Boiler Expected Emission Data for Model CB(LE)

Criteria Pollutant	Emission Factor[1] (lb/MM Btu)	Emission Rate (lb/hr)	Emission Rate (ton/year)
Total Particulate Matter (PM)	0.010	0.33	1.45
Nitrogen Oxides (NOx)	0.071	2.32	10.16
Sulfur Dioxide (SO_2)	0.0006	0.02	0.09
Carbon Monoxide (CO)	0.036	1.18	5.17
VOC	0.004	0.13	0.57
Lead[2]	5.00E-04	1.60E-05	7.01E-05

PM gr/scf at 3% O2 = PM lb/MMBTU x (20.9-3)/20.9 x 7000 gr/1 lb x 1/f Factor for NG dscf/MMBTU

PM gr/scf at 3% O2 **0.007 gr/dscf**

where:

f factor for NG = 8710 dscf/MMBTU 40 CFR Part 75 specifies a Fd value of 8,710 dscf/mmBtu

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 3

Toxic Air Pollutants Non-metals [3]	CAS No.	EPA AP-42 Natural Gas Emission Factor (lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL	CAA 112(b) HAP?
Pentane	109-66-0	2.60E+00	8.32E-02	3.64E-01	1.18E+02	Below	No
Benzene	71-43-2	2.10E-03	6.72E-05	2.94E-04	8.00E-04	Below	Yes
3-Methylchloranthrene	56-49-5	1.80E-06	5.76E-08	2.52E-07	2.50E-06	Below	Yes
Benzo(a)pyrene*	50-32-8	1.20E-06	3.84E-08	1.68E-07	2.00E-06	Below	Yes
Formaldehyde	50-00-0	7.50E-02	2.40E-03	1.05E-02	5.10E-04	**Exceeds**	Yes
POM (7-PAH)[4]			3.65E-07	1.60E-06	2.00E-06	Below	Yes
Hexane	110-54-3	1.80E+00	5.76E-02	2.52E-01	1.20E+01	Below	Yes
Naphthalene	91-20-3	6.10E-04	1.95E-05	8.54E-05	9.10E-05	Below	Yes
Toluene	108-88-3	3.40E-03	1.09E-04	4.77E-04	2.50E+01	Below	Yes
2-Methylnapthalene	97-57-6	2.40E-05	7.68E-07	3.36E-06			Yes
7, 12 - Dimethylbenz(a)anthracene		1.60E-05	5.12E-07	2.24E-06			Yes
Acenaphthene	83-32-9	1.80E-06	5.76E-08	2.52E-07			Yes
Acenaphyhylene	203-96-8	1.80E-06	5.76E-08	2.52E-07			Yes
Anthracene	120-12-7	2.40E-06	7.68E-08	3.36E-07			Yes
Dichlorobenzene	25321-22-6	1.20E-03	3.84E-05	1.68E-04			Yes
Flouranthene	206-44-0	3.00E-06	9.60E-08	4.20E-07			Yes
Fluorene	86-73-7	2.80E-06	8.96E-08	3.92E-07			Yes
Phenanthrene	85-01-8	1.70E-05	5.44E-07	2.38E-06			Yes
Benzo(a)anthracene*	56-55-3	1.80E-06	5.76E-08	2.52E-07			Yes
Benzo(b)fluoranthene*	205-82-3	1.80E-06	5.76E-08	2.52E-07			Yes
Benzo(g,h,i)perylene	191-24-2	1.20E-06	3.84E-08	1.68E-07			Yes
Benzo(k)fluoranthene*	205-82-3	1.80E-06	5.76E-08	2.52E-07			Yes
Chrysene*	218-01-9	1.80E-06	5.76E-08	2.52E-07			Yes
Dibenzo(a,h)anthracene*	53-70-3	1.20E-06	3.84E-08	1.68E-07			Yes
Indeno(1,2,3-cd)pyrene*	193-39-5	1.80E-06	5.76E-08	2.52E-07			Yes

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 3

Toxic Air Pollutants Metals [5]	CAS Number	Emission Factor (lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	PTE Emission Rate vs. EL	CAA 112(b) HAP?
Mercury	7439-97-6	2.60E-04	8.32E-06	3.64E-05			Yes
Arsenic	7440-38-2	2.00E-04	6.40E-06	2.80E-05	1.50E-06	Exceeds	Yes
Nickel	7440-02-0	2.10E-03	6.72E-05	2.94E-04	2.75E-05	Exceeds	Yes
Beryllium	7440-41-7	1.20E-05	3.84E-07	1.68E-06	2.80E-05	Below	Yes
Cadmium	7440-43-9	1.10E-03	3.52E-05	1.54E-04	3.70E-06	Exceeds	Yes
Chromium	7440-47-3	1.40E-03	4.48E-05	1.96E-04	3.30E-02	Below	Yes
Cobalt	7440-48-4	8.40E-05	2.69E-06	1.18E-05	3.30E-03	Below	Yes
Manganese	7439-96-5	3.80E-04	1.22E-05	5.34E-05	6.70E-02	Below	Yes
Molybdenum	7439-98-7	1.10E-03	3.52E-05	1.54E-04	3.33E-01	Below	Yes
Selenium	7782-49-2	2.40E-05	7.68E-07	3.36E-06	1.30E-02	Below	Yes
Vanadium	1314-62-1	2.30E-03	7.36E-05	3.22E-04	3.00E-03	Below	No
Zinc	7440-66-6	2.90E-02	9.28E-04	4.06E-03	3.33E-01	Below	No
Barium	7440-39-3	4.40E-03	1.41E-04	6.18E-04	3.30E-02	Below	No
Copper	7440-50-8	8.50E-04	2.72E-05	1.19E-04	1.30E-02	Below	No
		Total Non-Metal HAPs	6.02E-02	2.64E-01			
		Total Metal HAPs	2.13E-04	9.33E-04			
		Total HAPs	0.06	0.26			

Notes:

[1] Criteria Pollutants as stated in Cleaver Brooks Boiler Expected Emission Data for Model CB(LE). PM emission factor is assumed to equal PM10.

[2] Lead Emission factor from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-2. Emission factor units is lb/10^6 SCF.

[3] Toxic Air Pollutants (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3).

[4] Polycyclic Organic Matter (POM) is considered as one TAP consisting of benzo(a)pyrene, benzo(a)anthracene, benzo(b)flouranthene, dibenzo(a,h)anthracene, chrysene, indenol(1,2,3,-cd)pyrene, and benzo(a)pyrene. Compounds constituting POM are designated as *.

[5] Metals from Natural Gas Combustion (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4).

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 3

Green House Gases	EF (Natural Gas) kg/MMBtu	HHV	Reference	Boiler 3 Input (SCF/hr)	Boiler 3 Input (SCF/yr)	Emission Rate[6,7,8] (metric ton/yr)	Emission Rate[6,7,8] (ton/year)
CO_2	53.02	1.028E-03	40 CFR 98 Subpart C	32,019	280,486,440	15,287.79	16,851.73
N_2O	1.0E-04	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	32,019	280,486,440	2.88E-02	3.175E-02
CH_4	1.0E-03	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	32,019	280,486,440	2.88E-01	3.175E-01
CO2e			40 CFR 98 Part A			15,302.77	16,868.24

Notes

[6]Eqn C-1: $CO_2 = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[7]Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[8]CO_2e = (GWP CO_2 x CO_2 metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP N_2O x N_2O metric ton/yr)

Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1

GWP CO_2 =	1.00
GWP CH_4 =	21.00
GWP N_2O =	310.00

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Natural Gas Boiler 4

Boiler Heat Input (MMBTU/hr)	32.659
Manufacturer	Cleaver Brooks
Model No.	CBLE-700-600
Fuel Type	Natural Gas
Natural Gas Fuel Heat Value (BTU/SCF)	1,020
Natural Gas Use (10^6 scf/hr)	0.0320
Annual Operation (hrs/yr)	8,760

Cleaver Brooks Boiler Expected Emission Data for Model CB(LE)

Criteria Pollutant	Emission Factor[1] (lb/MM Btu)	Emission Rate (lb/hr)	Emission Rate (ton/year)
Total Particulate Matter (PM)	0.010	0.33	1.45
Nitrogen Oxides (NOx)	0.071	2.32	10.16
Sulfur Dioxide (SO_2)	0.0006	0.02	0.09
Carbon Monoxide (CO)	0.036	1.18	5.17
VOC	0.004	0.13	0.57
Lead[2]	5.00E-04	1.60E-05	7.01E-05

PM gr/scf at 3% O2 = PM lb/MMBTU x (20.9-3)/20.9 x 7000 gr/1 lb x 1/f Factor for NG dscf/MMBTU

PM gr/scf at 3% O2 **0.007 gr/dscf**

where:

f factor for NG = 8710 dscf/MMBTU 40 CFR Part 75 specifies a Fd value of 8,710 dscf/mmBtu

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 4

Toxic Air Pollutants Non-metals [3]	CAS No.	EPA AP-42 Natural Gas Emission Factor (lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL	CAA 112(b) HAP?
Pentane	109-66-0	2.60E+00	8.32E-02	3.64E-01	1.18E+02	Below	No
Benzene	71-43-2	2.10E-03	6.72E-05	2.94E-04	8.00E-04	Below	Yes
3-Methylchloranthrene	56-49-5	1.80E-06	5.76E-08	2.52E-07	2.50E-06	Below	Yes
Benzo(a)pyrene*	50-32-8	1.20E-06	3.84E-08	1.68E-07	2.00E-06	Below	Yes
Formaldehyde	50-00-0	7.50E-02	2.40E-03	1.05E-02	5.10E-04	**Exceeds**	Yes
POM (7-PAH)[4]			3.65E-07	1.60E-06	2.00E-06	Below	Yes
Hexane	110-54-3	1.80E+00	5.76E-02	2.52E-01	1.20E+01	Below	Yes
Naphthalene	91-20-3	6.10E-04	1.95E-05	8.54E-05	9.10E-05	Below	Yes
Toluene	108-88-3	3.40E-03	1.09E-04	4.77E-04	2.50E+01	Below	Yes
2-Methylnapthalene	97-57-6	2.40E-05	7.68E-07	3.36E-06			Yes
7, 12 - Dimethylbenz(a)anthracene		1.60E-05	5.12E-07	2.24E-06			Yes
Acenaphthene	83-32-9	1.80E-06	5.76E-08	2.52E-07			Yes
Acenaphyhylene	203-96-8	1.80E-06	5.76E-08	2.52E-07			Yes
Anthracene	120-12-7	2.40E-06	7.68E-08	3.36E-07			Yes
Dichlorobenzene	25321-22-6	1.20E-03	3.84E-05	1.68E-04			Yes
Flouranthene	206-44-0	3.00E-06	9.60E-08	4.20E-07			Yes
Fluorene	86-73-7	2.80E-06	8.96E-08	3.92E-07			Yes
Phenanthrene	85-01-8	1.70E-05	5.44E-07	2.38E-06			Yes
Benzo(a)anthracene*	56-55-3	1.80E-06	5.76E-08	2.52E-07			Yes
Benzo(b)fluoranthene*	205-82-3	1.80E-06	5.76E-08	2.52E-07			Yes
Benzo(g,h,i)perylene	191-24-2	1.20E-06	3.84E-08	1.68E-07			Yes
Benzo(k)fluoranthene*	205-82-3	1.80E-06	5.76E-08	2.52E-07			Yes
Chrysene*	218-01-9	1.80E-06	5.76E-08	2.52E-07			Yes
Dibenzo(a,h)anthracene*	53-70-3	1.20E-06	3.84E-08	1.68E-07			Yes
Indeno(1,2,3-cd)pyrene*	193-39-5	1.80E-06	5.76E-08	2.52E-07			Yes

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Natural Gas Boiler 4

Toxic Air Pollutants Metals [6]	CAS Number	Emission Factor (lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	PTE Emission Rate vs. EL	CAA 112(b) HAP?
Mercury	7439-97-6	2.60E-04	8.32E-06	3.64E-05			Yes
Arsenic	7440-38-2	2.00E-04	6.40E-06	2.80E-05	1.50E-06	Exceeds	Yes
Nickel	7440-02-0	2.10E-03	6.72E-05	2.94E-04	2.75E-05	Exceeds	Yes
Beryllium	7440-41-7	1.20E-05	3.84E-07	1.68E-06	2.80E-05	Below	Yes
Cadmium	7440-43-9	1.10E-03	3.52E-05	1.54E-04	3.70E-06	Exceeds	Yes
Chromium	7440-47-3	1.40E-03	4.48E-05	1.96E-04	3.30E-02	Below	Yes
Cobalt	7440-48-4	8.40E-05	2.69E-06	1.18E-05	3.30E-03	Below	Yes
Manganese	7439-96-5	3.80E-04	1.22E-05	5.34E-05	6.70E-02	Below	Yes
Molybdenum	7439-98-7	1.10E-03	3.52E-05	1.54E-04	3.33E-01	Below	Yes
Selenium	7782-49-2	2.40E-05	7.68E-07	3.36E-06	1.30E-02	Below	Yes
Vanadium	1314-62-1	2.30E-03	7.36E-05	3.22E-04	3.00E-03	Below	No
Zinc	7440-66-6	2.90E-02	9.28E-04	4.06E-03	3.33E-01	Below	No
Barium	7440-39-3	4.40E-03	1.41E-04	6.18E-04	3.30E-02	Below	No
Copper	7440-50-8	8.50E-04	2.72E-05	1.19E-04	1.30E-02	Below	No
		Total Non-Metal HAPs	6.02E-02	2.64E-01			
		Total Metal HAPs	2.13E-04	9.33E-04			
		Total HAPs	0.06	0.26			

Notes:

[1] Criteria Pollutants as stated in Cleaver Brooks Boiler Expected Emission Data for Model CB(LE). PM emission factor is assumed to equal PM10.

[2] Lead Emission factor from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-2. Emission factor units is lb/10^6 SCF.

[3] Toxic Air Pollutants (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3).

[4] Polycyclic Organic Matter (POM) is considered as one TAP consisting of benzo(a)pyrene, benzo(a)anthracene, benzo(b)flouranthene, dibenzo(a,h)anthracene, chrysene, indenol(1,2,3,-cd)pyrene, and benzo(a)pyrene. Compounds constituting POM are designated as *.

[5] Metals from Natural Gas Combustion (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4).

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Natural Gas Boiler 4

Green House Gases	EF (Natural Gas) kg/MMBtu	HHV	Reference	Boiler 4 Input (SCF/hr)	Boiler 4 Input (SCF/yr)	Boiler 4 Emission Rate[6,7,8] (metric ton/yr)	Boiler 4 Emission Rate[6,7,8] (ton/year)
CO_2	53.02	1.028E-03	40 CFR 98 Subpart C	32,019	280,486,440	15,287.79	16,851.73
N_2O	1.0E-04	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	32,019	280,486,440	2.88E-02	3.175E-02
CH_4	1.0E-03	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	32,019	280,486,440	2.88E-01	3.175E-01
CO2e			40 CFR 98 Part A			15,302.77	16,868.24

Notes

[6]Eqn C-1: $CO_2 = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[7]Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[8]CO_2e = (GWP CO_2 x CO_2 metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP N_2O x N_2O metric ton/yr)

Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1

GWP CO_2 =	1.00
GWP CH_4 =	21.00
GWP N_2O =	310.00

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Natural Gas Boiler 5

Boiler Heat Input (MMBTU/hr)	32.659
Manufacturer	Cleaver Brooks
Model No.	CBLE-700-800
Fuel Type	Natural Gas
Natural Gas Fuel Heat Value (BTU/SCF)	1,020
Natural Gas Use (10^6 scf/hr)	0.0320
Annual Operation (hrs/yr)	8,760

Cleaver Brooks Boiler Expected Emission Data for Model CB(LE)

Criteria Pollutant	Emission Factor[1] (lb/MM Btu)	Emission Rate (lb/hr)	Emission Rate (ton/year)
Total Particulate Matter (PM)	0.010	0.33	1.45
Nitrogen Oxides (NOx)	0.071	2.32	10.16
Sulfur Dioxide (SO_2)	0.0006	0.02	0.09
Carbon Monoxide (CO)	0.036	1.18	5.17
VOC	0.004	0.13	0.57
Lead[2]	5.00E-04	1.60E-05	7.01E-05

PM gr/scf at 3% O2 = PM lb/MMBTU x (20.9-3)/20.9 x 7000 gr/1 lb x 1/f Factor for NG dscf/MMBTU

PM gr/scf at 3% O2 **0.007 gr/dscf**

where:

f factor for NG = 8710 dscf/MMBTU 40 CFR Part 75 specifies a Fd value of 8,710 dscf/mmBtu

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Natural Gas Boiler 5

Toxic Air Pollutants Non-metals [3]	CAS No.	EPA AP-42 Natural Gas Emission Factor (lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	Emission Rate vs. EL	CAA 112(b) HAP?
Pentane	109-66-0	2.60E+00	8.32E-02	3.64E-01	1.18E+02	Below	No
Benzene	71-43-2	2.10E-03	6.72E-05	2.94E-04	8.00E-04	Below	Yes
3-Methylchloranthrene	56-49-5	1.80E-06	5.76E-08	2.52E-07	2.50E-06	Below	Yes
Benzo(a)pyrene*	50-32-8	1.20E-06	3.84E-08	1.68E-07	2.00E-06	Below	Yes
Formaldehyde	50-00-0	7.50E-02	2.40E-03	1.05E-02	5.10E-04	Exceeds	Yes
POM (7-PAH)[4]			3.65E-07	1.60E-06	2.00E-06	Below	Yes
Hexane	110-54-3	1.80E+00	5.76E-02	2.52E-01	1.20E+01	Below	Yes
Naphthalene	91-20-3	6.10E-04	1.95E-05	8.54E-05	9.10E-05	Below	Yes
Toluene	108-88-3	3.40E-03	1.09E-04	4.77E-04	2.50E+01	Below	Yes
2-Methylnapthalene	97-57-6	2.40E-05	7.68E-07	3.36E-06			Yes
7, 12 - Dimethylbenz(a)anthracene		1.60E-05	5.12E-07	2.24E-06			Yes
Acenaphthene	83-32-9	1.80E-06	5.76E-08	2.52E-07			Yes
Acenaphyhylene	203-96-8	1.80E-06	5.76E-08	2.52E-07			Yes
Anthracene	120-12-7	2.40E-06	7.68E-08	3.36E-07			Yes
Dichlorobenzene	25321-22-6	1.20E-03	3.84E-05	1.68E-04			Yes
Flouranthene	206-44-0	3.00E-06	9.60E-08	4.20E-07			Yes
Fluorene	86-73-7	2.80E-06	8.96E-08	3.92E-07			Yes
Phenanthrene	85-01-8	1.70E-05	5.44E-07	2.38E-06			Yes
Benzo(a)anthracene*	56-55-3	1.80E-06	5.76E-08	2.52E-07			Yes
Benzo(b)fluoranthene*	205-82-3	1.80E-06	5.76E-08	2.52E-07			Yes
Benzo(g,h,i)perylene	191-24-2	1.20E-06	3.84E-08	1.68E-07			Yes
Benzo(k)fluoranthene*	205-82-3	1.80E-06	5.76E-08	2.52E-07			Yes
Chrysene*	218-01-9	1.80E-06	5.76E-08	2.52E-07			Yes
Dibenzo(a,h)anthracene*	53-70-3	1.20E-06	3.84E-08	1.68E-07			Yes
Indeno(1,2,3-cd)pyrene*	193-39-5	1.80E-06	5.76E-08	2.52E-07			Yes

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Natural Gas Boiler 5

Toxic Air Pollutants Metals [5]	CAS Number	Emission Factor (lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (ton/year)	IDAPA 58.01.01.585/586 EL (lb/hr)	PTE Emission Rate vs. EL	CAA 112(b) HAP?
Mercury	7439-97-6	2.60E-04	8.32E-08	3.64E-05			Yes
Arsenic	7440-38-2	2.00E-04	6.40E-06	2.80E-05	1.50E-06	Exceeds	Yes
Nickel	7440-02-0	2.10E-03	6.72E-05	2.94E-04	2.75E-05	Exceeds	Yes
Beryllium	7440-41-7	1.20E-05	3.84E-07	1.68E-06	2.80E-05	Below	Yes
Cadmium	7440-43-9	1.10E-03	3.52E-05	1.54E-04	3.70E-06	Exceeds	Yes
Chromium	7440-47-3	1.40E-03	4.48E-05	1.96E-04	3.30E-02	Below	Yes
Cobalt	7440-48-4	8.40E-05	2.69E-06	1.18E-05	3.30E-03	Below	Yes
Manganese	7439-96-5	3.80E-04	1.22E-05	5.34E-05	6.70E-02	Below	Yes
Molybdenum	7439-98-7	1.10E-03	3.52E-05	1.54E-04	3.33E-01	Below	Yes
Selenium	7782-49-2	2.40E-05	7.68E-07	3.36E-06	1.30E-02	Below	Yes
Vanadium	1314-62-1	2.30E-03	7.36E-05	3.22E-04	3.00E-03	Below	No
Zinc	7440-66-6	2.90E-02	9.28E-04	4.06E-03	3.33E-01	Below	No
Barium	7440-39-3	4.40E-03	1.41E-04	6.18E-04	3.30E-02	Below	No
Copper	7440-50-8	8.50E-04	2.72E-05	1.19E-04	1.30E-02	Below	No
		Total Non-Metal HAPs	6.02E-02	2.64E-01			
		Total Metal HAPs	2.13E-04	9.33E-04			
		Total HAPs	0.06	0.26			

Notes:

[1] Criteria Pollutants as stated in Cleaver Brooks Boiler Expected Emission Data for Model CB(LE). PM emission factor is assumed to equal PM10.

[2] Lead Emission factor from EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-2. Emission factor units is lb/10^6 SCF.

[3] Toxic Air Pollutants (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3).

[4] Polycyclic Organic Matter (POM) is considered as one TAP consisting of benzo(a)pyrene, benzo(a)anthracene, benzo(b)flouranthene, dibenzo(a,h)anthracene, chrysene, indenol(1,2,3,-cd)pyrene, and benzo(a)pyrene. Compounds constituting POM are designated as *.

[5] Metals from Natural Gas Combustion (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4).

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Natural Gas Boiler 5

Green House Gases	EF (Natural Gas) kg/MMBtu	HHV	Reference	Boiler 5 Input (SCF/hr)	Boiler 5 Input (SCF/yr)	Boiler 5 Emission Rate[6,7,8] (metric ton/yr)	Boiler 5 Emission Rate[6,7,8] (ton/year)
CO_2	53.02	1.028E-03	40 CFR 98 Subpart C	32,019	280,486,440	15,287.79	16,851.73
N_2O	1.0E-04	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	32,019	280,486,440	2.88E-02	3.175E-02
CH_4	1.0E-03	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	32,019	280,486,440	2.88E-01	3.175E-01
CO2e			40 CFR 98 Part A			15,302.77	16,868.24

Notes

[6]Eqn C-1: $CO_2 = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[7]Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[8]CO_2e = (GWP CO_2 x CO_2 metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP N_2O x N_2O metric ton/yr)

Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1

GWP CO_2 =	1.00
GWP CH_4 =	21.00
GWP N_2O =	310.00

AgroFarms Twin Falls - Ghobari Facility Emission Estimate
Biogas and Natural Gas Only (Primary Fuel)
Criteria Boiler 6

Boiler Unit Input Identifier	6
Model No.	Cibele
Primary Fuel Type	Biogas
Max Biogas Production (scfd/day) (based on highest reported sulfate concentration)	140,000
Biogas Heat Value (Btu/scf)	600
Biogas Primary Fuel Use (10^6 scf/hr)	0.0350
Secondary Fuel Type	Natural Gas
Secondary Fuel Heat Value (Btu/scf)	1,020
Secondary Fuel Use (10^6 scf/hr)	0.0375
Total Heat Input from Fuels (MMBtu/hr)	1.93
Max Heat input from Biogas (MMBtu/hr)	1.94
Operation (hrs/yr)	8,760
Hydrogen Sulfide (H_2S) Biogas Concentration (ppmv)	4,000
H_2S Biogas Concentration (mg/m^3)	5,578
Uncontrolled Max H_2S Mass Feedrate (lb/hr)	2.1
Assumed H_2S Conversion for SO_2 Emissions	100%

Note: Under 6 operates at maximum production at 40% on biogas and 60% on natural gas as a primary fuel source. The mass emissions are treated between the two fuel types as shown in Table 6 (Secondary & Worst-Case) respectively

Criteria Pollutant	Emission Factor [1] (lb/10^6 scf)	Emission Factor [1] (lb/MM Btu)	Uncontrolled Potential to Emit: Biogas Fuel (Max Heat Input 0.70 MMBtu/hr) Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Biogas Fuel - Natural Gas (0.48 MMBtu/hr) Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Primary Fuel Total Emission Rate (lb/hr)	Emission Rate (ton/yr)
Total Particulate Matter (PM) [2]	7.60E+00	7.46E-03	0.026	228	0.11	0.003	26	0.01	0.03	0.12
Nitrogen Oxides (NOx)	8.00E+01	4.90E-02	0.173	1,515	0.76	0.219	1,918	0.96	0.39	1.72
Sulfur Dioxide (SO_2) [3]	6.00E-01	5.88E-04	3.948	34,584	17.3	0.003	25	0.0	3.95	17.30
Carbon Monoxide (CO)	8.40E+01	8.24E-02	0.292	2,558	1.3	0.366	3,204	1.6	0.66	2.90
VOC	5.60E+00	5.49E-03	0.019	166	0.1	0.024	210	0.1	0.04	0.20
Lead	5.08E-04	4.98E-07	1.73E-03	1.51E-02	7.12E-06	2.16E-06	1.92E-02	9.60E-06	3.90E-03	1.72E-05

Toxic Air Pollutants - H_2S	CAS No.	Emission Factor [4] % Desulfurization	Controlled Potential to Emit: Primary Fuel - Biogas Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Secondary Fuel - Natural Gas Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Worst-Case Fuel Operation Emission Rate (lb/hr)	IDAPA 58.01.01.585/586 B - EL (lb/hr)	PTE Emission Rate vs. EL (lb/hr)
Hydrogen sulfide	7783-06-4	99%	4.20E-02	6.57E+03	4.28E+00				4.20E-02	9.23E-01	Below

Toxic Air Pollutants - Non-metals [5]	CAS No.	EPA AP-42 Natural Gas Emission Factor (lb/10^6 scf)	SCAQMD [6] Digester Gas Emission Factor (lb/10^6 scf)	Uncontrolled Potential to Emit: Primary Fuel - Biogas [6] Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Secondary Fuel - Natural Gas Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Worst-Case Fuel Operation Emission Rate (lb/hr)	Emission Rate (ton/yr)	IDAPA 58.01.01.585/586 B - EL (lb/hr)	PTE Emission Rate vs. EL
3-Methylchlorofrene	56-49-5	1.80E-08		1.08E-08	9.38E-05	4.69E-08	1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
Acenaphthene	83-32-9	1.80E-08		1.08E-08	9.38E-05	4.69E-08	1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
Acenaphthylene	208-96-8	1.80E-08		1.08E-08	9.38E-05	4.69E-08	1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
Anthracene	120-12-7	1.80E-08		1.08E-08	9.38E-05	4.69E-08	1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
Benzo(a)anthracene	56-55-3	1.80E-08		1.08E-08	9.38E-05	4.69E-08	1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
Benzo(b)fluoranthene*	205-99-2	1.80E-08		1.08E-08	9.38E-05	4.69E-08	1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
Benzo(k)fluoranthene*	207-08-9	1.80E-08		1.08E-08	9.38E-05	4.69E-08	1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
Chrysene*	218-01-9	1.80E-08		1.08E-08	9.38E-05	4.69E-08	1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
Dibenzo(a,h)anthracene*	53-70-3	1.80E-08		1.08E-08	9.38E-05	4.69E-08	1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
Indeno(1,2,3-cd)pyrene*	193-39-5	1.80E-08		1.08E-08	9.38E-05	4.69E-08	1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
PCBs (7-PAHs)[8]							1.46E-08	1.28E-04	6.39E-08	1.46E-08	6.39E-08	2.80E-09	Below
							8.76E-08	7.77E-04	3.88E-07	8.76E-08	3.88E-07	2.80E-06	Below
									ToPH	0.09	0.24		

Toxic Air Pollutants-Metals	CAS Number	Emission Factor[7] (lb/10^6 scf)	Uncontrolled Potential to Emit: Primary Fuel - Biogas Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Secondary Fuel - Natural Gas Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Worst-Case Fuel Operation Emission Rate (lb/hr)	Emission Rate (ton/yr)	IDAPA 58.01.01.585/586 B - EL (lb/hr)	PTE Emission Rate vs. EL
Arsenic	7440-38-2	2.00E-04	1.16E-08	1.03E-02	5.16E-06	1.88E-08	1.57E-02	8.83E-06	1.88E-08	8.83E-06	1.50E-08	Exceeds
Barium	7440-39-3	4.40E-03	2.55E-05	2.26E-01	1.14E-04	3.42E-05	3.03E-01	1.80E-04	3.42E-05	1.80E-04	3.30E-02	Below
Beryllium	7440-41-7	1.20E-05	7.00E-08	6.20E-04	3.10E-07	9.28E-08	8.20E-04	4.10E-07	9.28E-08	4.10E-07	2.80E-05	Below
Cadmium	7440-43-9	1.10E-03	6.40E-08	5.66E-02	2.83E-05	8.52E-08	7.52E-02	3.76E-05	8.52E-08	3.76E-05	3.70E-03	Exceeds
Chromium	7440-47-3	1.40E-03	8.15E-08	7.24E-02	3.62E-05	1.09E-08	9.53E-02	4.76E-05	1.09E-08	4.76E-05	3.30E-02	Below
Cobalt	7440-48-4	8.40E-05	4.88E-07	4.34E-03	2.17E-06	6.53E-07	5.74E-03	2.87E-06	6.53E-07	2.87E-06	3.30E-03	Below
Copper	7440-50-8	8.50E-04	5.02E-08	4.46E-02	2.23E-05	6.63E-08	5.81E-02	2.91E-05	6.63E-08	2.91E-05	1.30E-02	Below
Manganese	7439-96-5	3.80E-04	2.24E-08	1.99E-02	9.93E-06	2.96E-08	2.59E-02	1.30E-05	2.96E-08	1.30E-05	6.70E-02	Below
Mercury	7439-97-6	2.60E-04	1.53E-08	1.36E-02	6.79E-06	2.03E-08	1.78E-02	8.92E-06	2.03E-08	8.92E-06	1.00E-03	Below
Molybdenum	7439-98-7	1.10E-03	6.49E-08	5.66E-02	2.83E-05	8.60E-08	7.52E-02	3.76E-05	8.60E-08	3.76E-05	3.33E-01	Below
Nickel	7440-02-0	2.10E-03	1.24E-07	1.08E-01	5.41E-05	1.64E-07	1.44E-01	7.20E-05	1.64E-07	7.20E-05	2.76E-05	Below
Selenium	7782-49-2	2.40E-05	1.42E-07	1.24E-03	6.20E-07	1.87E-07	1.64E-03	8.20E-07	1.87E-07	8.20E-07	1.20E-03	Below
Vanadium	7440-62-2	2.30E-03	1.35E-05	1.18E-01	5.92E-05	1.79E-05	1.57E-01	7.85E-05	1.79E-05	7.85E-05	3.00E-03	Below
Zinc	7440-66-6	2.90E-02	1.71E-04	1.50E-00	7.50E-04	2.26E-04	1.98E-00	9.90E-04	2.26E-04	9.90E-04	3.33E-01	Below
								Total	3.37E-04	1.48E-03		
								Total Non-Metal HAP	1.47E-02	6.43E-02		
								Total Metal HAPs	8.18E-05	2.28E-04		
								Total HAPs	1.48E-02	6.45E-02		

Notes:

[1] Criteria Pollutants, result uncontrolled before (EPA AP-42, Section 1.4 Natural Gas Combustion, Tables 1.4-1 and 1.4-2).
Because emission factor is in lb/MM Btu heat input basis, same factor applied for biogas and natural gas combustion.

[2] PM emission factor is assumed to equal PM_{10}.

[3] SO_2 Emission factor for biogas assumes 100% conversion of H_2S to SO_2; manufacturer SO_2 emission factor not used

[4] Conservatively estimated H_2S destruction based on engineering judgement and combustion properties of H_2S

[5] Biogas toxic air pollutant emissions based on EPA AP-42 emission factors, three orders of Biogas heat value to natural gas heat value, unless higher emission factor available through SCAQMD.

[6] Emission factors from "Annual Instruction Book for the 2003 - 2004 Annual Emissions Reporting Program". Table 10 (Default Emission factors for Digester Gas Combustion) South Coast Air Quality Management District (SCAQMD).

[7] Toxic Air Pollutants (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3).

[8] Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(k)pyrene. Designated by *

[9] Metals from Natural Gas Combustion (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4).

AgroPower Twin Falls - Chobani Facility Emissions Estimate
Natural Gas only and Worst Case Scenario (Primary vs Secondary Fuel)
[illegible] Boiler 8

Boiler Heat Input (MMBtu/hr)	8
Model No.	[illegible]
Primary Fuel Type	Biogas
Max Biogas Production (scf/day) (based on highest expected sulfide concentration)	140,6[illegible]
Biogas Heat Value (Btu/scf)	600
Biogas Primary Fuel Use (10^6 scf/hr)	0.0059
Secondary Fuel Type	Natural Gas
Secondary Fuel Heat Value (Btu/scf)	1,020
Secondary Fuel Use (10^6 scf/hr)	0.0078
Max Heat Input from NG (MMBtu/hr)	4.46
Max Heat Input from Biogas (MMBtu/hr)	3.54
Operation (hr/yr)	8,760
Hydrogen Sulfide (H_2S) Biogas Concentration (ppmv)	4,000
H_2S Biogas Concentration (mg/m^3)	5,579
Uncontrolled Max H_2S Mass Feedrate (lb/hr)	2.1
Assumed H_2S Conversion for SO_2 Emissions	100%

Note: Boiler 8 operates on 100% Natural Gas as a secondary fuel source. Worst case scenario (primary vs secondary fuel) is shown below with the source of the worst case scenario.

Criteria Pollutant	Emission Factor[1]		Uncontrolled Potential to Emit: Secondary Fuel - Natural Gas			Worst-Case Fuel Operation		Source
	(lb/10^6 scf)	(lb/MMBtu)	Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	
Total Particulate Matter (PM)[2]	7.60E+00	7.45E-03	0.059	520	0.3	0.06	0.30	Natural Gas (8 MMBtu/hr)
Nitrogen Oxides (NOx)	5.00E+01	4.90E-02	0.392	3,434	1.72	0.392	1.72	Natural Gas (8 MMBtu/hr)
Sulfur Dioxide (SO_2)[3]	6.00E-01	5.88E-04	0.005	44	0.02	3.95	17.30	Biogas and Natural Gas
Carbon Monoxide (CO)	8.40E+01	8.24E-02	0.659	5,773	2.9	0.66	2.90	Natural Gas (8 MMBtu/hr)
VOC	5.50E+00	5.39E-03	0.043	377	0.2	0.04	0.20	Natural Gas (8 MMBtu/hr)
Lead	5.00E-04	4.90E-07	3.92E-06	3.43E-02	1.72E-05	3.92E-06	1.72E-05	Natural Gas (8 MMBtu/hr)

Toxic Air Pollutants - H_2S	CAS No.	Emission Factor[4]	Controlled Potential to Emit: Primary Fuel - Biogas			Secondary Fuel - Natural Gas			Worst-Case Fuel Operation	IDAPA 58.01.01.585/586 - EL	PTE Emission Rate vs. EL
		(% Destruction)	Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	(lb/hr)	
Hydrogen sulfide	7783-06-4	[illegible]%	4.20E-02	[illegible]	[illegible]				4.20E-02	9.33E-01	Below

Toxic Air Pollutants - Non-metals[7]	CAS No.	EPA AP-42 Natural Gas Emission Factor	SCAQMD[5] Digester Gas Emission Factor	Uncontrolled Potential to Emit: Primary Fuel - Biogas[6]			Secondary Fuel - Natural Gas			Worst-Case Fuel Operation		IDAPA 58.01.01.585/586 - EL	PTE Emission Rate vs. EL
		(lb/10^6 scf)	(lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	(lb/hr)	
3-Methylchloranthene*	56-49-5	1.80E-06		1.06E-08	9.29E-05	4.65E-08	1.40E-08	1.23E-04	6.15E-08	1.40E-08	6.15E-08	2.50E-06	Below
Ammonia	7664-41-7		3.20E+00	1.66E-02	1.45E+02	8.30E-02				1.66E-02	8.30E-02	1.20E+00	Below
Benzene	71-43-2	2.10E-03	5.80E-03	3.42E-05	3.00E-01	1.50E-04	1.64E-05	1.44E-01	7.20E-05	3.42E-05	1.50E-04	8.00E-04	Below
Benzo(a)pyrene*	50-32-8	1.20E-06		7.08E-09	6.20E-05	3.10E-08	9.38E-09	8.20E-05	4.10E-08	9.38E-09	4.10E-08	2.00E-06	Below
Formaldehyde	50-00-0	7.50E-02	1.23E-02	4.43E-04	3.88E+00	1.94E-03	5.85E-04	5.12E+00	2.56E-03	5.85E-04	2.56E-03	5.10E-04	Exceeds
Hexane	110-54-3	1.80E+00		1.06E-02	9.29E+01	4.65E-02	1.40E-02	1.23E+02	6.15E-02	1.40E-02	6.15E-02	1.20E+01	Below
Naphthalene	91-20-3	6.10E-04		3.60E-06	3.15E-02	1.58E-05	4.76E-06	4.17E-02	2.09E-05	4.76E-06	2.09E-05	3.33E+00	Below
Total PAHs	NA		4.00E-04	2.36E-06	2.07E-02	1.04E-05	NA	NA	NA	2.36E-06	1.04E-05	9.10E-05	Below
Pentane	109-66-0	2.60E+00		1.53E-02	1.34E+02	6.70E-02	2.03E-02	1.78E+02	8.90E-02	2.03E-02	8.90E-02	1.18E+02	Below
Toluene	108-88-3	3.40E-03		2.01E-05	1.76E-01	8.80E-05	2.65E-05	2.32E-01	1.16E-04	2.65E-05	1.16E-04	2.50E+01	Below
Benzo(a)anthracene*	56-55-3	1.80E-06		NA	NA	NA	1.40E-08	1.23E-04	6.15E-08	1.40E-08	6.15E-08	PAH	NA
Benzo(b)fluoranthene*	205-99-2	1.80E-06		NA	NA	NA	1.40E-08	1.23E-04	6.15E-08	1.40E-08	6.15E-08	PAH	NA
Benzo(k)fluoranthene*	207-08-9	1.80E-06		NA	NA	NA	1.40E-08	1.23E-04	6.15E-08	1.40E-08	6.15E-08	PAH	NA
Chrysene*	218-01-9	1.80E-06		NA	NA	NA	1.40E-08	1.23E-04	6.15E-08	1.40E-08	6.15E-08	PAH	NA
Dibenzo(a,h)anthracene*	53-70-3	1.20E-06		NA	NA	NA	9.38E-09	8.20E-05	4.10E-08	9.38E-09	4.10E-08	PAH	NA
Indeno(1,2,3-cd)pyrene*	193-39-5	1.80E-06		NA	NA	NA	1.40E-08	1.23E-04	6.15E-08	1.40E-08	6.15E-08	PAH	NA
POM (7-PAH)[8]				NA	NA	NA	8.87E-08	7.77E-04	3.89E-07	8.87E-08	3.89E-07	2.00E-06	Below
									Total	0.05	0.24		

Toxic Air Pollutants-Metals	CAS Number	Emission Factor[9]	Uncontrolled Potential to Emit: Primary Fuel - Biogas			Secondary Fuel - Natural Gas			Worst-Case Fuel Operation		IDAPA 58.01.01.585/586 - EL	PTE Emission Rate vs. EL
		(lb/10^6 scf)	Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (ton/yr)	(lb/hr)	
Arsenic	7440-38-2	2.00E-04	1.18E-06	1.03E-02	5.15E-06	1.58E-06	1.37E-02	6.85E-06	1.58E-06	6.85E-06	1.50E-06	Exceeds
Barium	7440-39-3	4.40E-03	2.60E-05	2.28E-01	1.14E-04	3.45E-05	3.02E-01	1.50E-04	3.45E-05	1.50E-04	3.30E-02	Below
Beryllium	7440-41-7	1.20E-05	7.08E-08	6.20E-04	3.10E-07	9.38E-08	8.20E-04	4.10E-07	9.38E-08	4.10E-07	2.80E-05	Below
Cadmium	7440-43-9	1.10E-03	6.49E-06	5.68E-02	2.85E-05	8.59E-06	7.52E-02	3.76E-05	8.59E-06	3.76E-05	3.70E-06	Exceeds
Chromium	7440-47-3	1.40E-03	8.26E-06	7.24E-02	3.62E-05	1.09E-05	9.59E-02	4.79E-05	1.09E-05	4.79E-05	3.30E-02	Below
Cobalt	7440-48-4	8.40E-05	4.96E-07	4.34E-03	2.17E-06	6.56E-07	5.74E-03	2.87E-06	6.56E-07	2.87E-06	3.30E-03	Below
Copper	7440-50-8	8.50E-04	5.02E-06	4.40E-02	2.20E-05	6.64E-06	5.81E-02	2.91E-05	6.64E-06	2.91E-05	1.30E-02	Below
Manganese	7439-96-5	3.80E-04	2.24E-06	1.96E-02	9.80E-06	2.96E-06	2.59E-02	1.30E-05	2.96E-06	1.30E-05	6.70E-02	Below
Mercury	7439-97-6	2.60E-04	1.53E-06	1.34E-02	6.70E-06	2.03E-06	1.78E-02	8.89E-06	2.03E-06	8.89E-06	3.00E-03	Below
Molybdenum	7439-98-7	1.10E-03	6.49E-06	5.68E-02	2.85E-05	8.59E-06	7.52E-02	3.76E-05	8.59E-06	3.76E-05	3.33E-01	Below
Nickel	7440-02-0	2.10E-03	1.24E-05	1.09E-01	5.43E-05	1.64E-05	1.44E-01	7.20E-05	1.64E-05	7.20E-05	2.70E-05	Below
Selenium	7782-49-2	2.40E-05	1.42E-07	1.24E-03	6.20E-07	1.87E-07	1.64E-03	8.20E-07	1.87E-07	8.20E-07	1.30E-02	Below
Vanadium	1314-62-1	2.30E-03	1.36E-05	1.19E-01	5.95E-05	1.79E-05	1.57E-01	7.85E-05	1.79E-05	7.85E-05	3.00E-03	Below
Zinc	7440-66-6	2.90E-02	1.71E-04	1.50E+00	7.50E-04	2.27E-04	1.98E+00	9.90E-04	2.27E-04	9.90E-04	3.33E-01	Below
								Total	3.37E-04	1.48E-03		
								Total Non-Metal HAP	1.47E-02	6.43E-02		
								Total Metal HAPs	5.19E-05	2.28E-04		
								Total HAPs	1.48E-02	6.45E-02		

Notes:
[1] Criteria Pollutants, small uncontrolled boilers (EPA AP-42, Section 1.4 Natural Gas Combustion, Tables 1.4-1 and 1.4-2). Because emission factor is in lb/MM Btu heat input basis, same factor applied for biogas and natural gas combustion.
[2] PM emission factor is assumed to equal PM_{10}.
[3] SO_2 Emission factor for biogas assumes 100% conversion of H_2S to SO_2; manufacturer SO_2 emission factor not used
[4] Conservatively estimated H_2S destruction based on engineering judgement and combustion properties of H_2S
[5] Biogas toxic air pollutant emissions based on EPA AP-42 emission factors, times ratio of Biogas heat value to natural gas heat value, unless higher emission factor available through SCAQMD.
[6] Emission factors from "General Instruction Book for the 2003 - 2004 Annual Emissions Reporting Program", Table 10 (Default Emission factors for Digester Gas Combustion) South Coast Air Quality Management District (SCAQMD).
[7] Toxic Air Pollutants (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-3).
[8] Polycyclic Organic Matter (POM) is considered as one TAP comprised of: benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, chrysene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene. Designated by *
[9] Metals from Natural Gas Combustion (EPA AP-42, Section 1.4 Natural Gas Combustion, Table 1.4-4).

Green House Gases	EF (Natural Gas) kg/MMBtu	HHV	Reference	Input (SCF/hr)	Input (SCF/yr)	Emission Rate[6,7,8] (metric ton/yr)	(ton/year)
CO_2	53.02	1.028E-03	40 CFR 98 Subpart C Equation C-1 Tier 1	7,800	68,328,000	3,724.19	4,105.17
N_2O	1.0E-04	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	7,800	68,328,000	7.02E-03	7.74E-03
CH_4	1.0E-03	1.028E-03	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	7,800	68,328,000	7.02E-02	7.74E-02
CO2e			40 CFR 98 Part A			3,727.84	4,109.19

Green House Gases	EF (Biogas) kg/MMBtu	HHV	Reference	Input (SCF/hr)	Input (SCF/yr)	Emission Rate[6,7,8] (metric ton/yr)	(ton/year)
CO_2	52.07	8.41E-04	40 CFR 98 Subpart C Equation C-1 Tier 1	5,900	51,684,000	2,263.29	2,494.82
N_2O	6.3E-04	8.41E-04	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	5,900	51,684,000	2.74E-02	3.02E-02
CH_4	3.2E-03	8.41E-04	40 CFR 98 Subpart C Equation C-8 (Tiers 1 & 3)	5,900	51,684,000	1.39E-01	1.53E-01
CO2e			40 CFR 98 Part A			2,274.70	2,507.40

Notes

[6]Eqn C-1: $CO_2 = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CO_2 emission factor for natural gas, from Table C-1 of 40 CFR Part 98 Subpart C (kg CO_2/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[7]Eqn C-8: CH_4 or $N_2O = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF}$

Fuel = Volume of fuel combusted per year, (SCF/Year)

EF = Fuel-specific default CH_4 or N_2O emission factor for natural gas, from Table C-2 of 40 CFR Part 98 Subpart C (kg CH_4 or N_2O/MMBTU)

HHV = Default high heat value of the fuel, from Table C-1 of 40 CFR Part 98 Subpart C (MMBTU/SCF)

1×10^{-3} = Conversion Factor from Kilograms to Metric Tons

[8]CO_2e = (GWP CO_2 x CO_2 metric ton/yr) + (GWP CH4 x CH4 metric ton/yr) + (GWP N_2O x N_2O metric ton/yr)

Global Warming Potential (GWP) for Selected GHG - 40 CFR 98 Subpart A, Table A-1

GWP CO_2 =	1.00
GWP CH_4 =	21.00
GWP N_2O =	310.00

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Anhydrous Ammonia Refrigeration System

Anhydrous Ammonia Refrigeration System (11 Chillers)	Capacity (lb/hr)	Emission Rate[1] (lb emitted/SCC unit)	Ammonia Emissions (lb/hr)	IDAPA 58.01.01.585/586 TAP Screening Levels (lb/hr)	Estimated Emissions Exceed TAP Screening Levels (Yes/No)
Chillers	10,800	0.30	1.62		
Total Emissions			1.62	1.20	Yes

Notes:

[1] Emission rates derived from AP-42, Section 9, Development and Selection of Ammonia Emission Factors, Table 7.3, low density prill coolers. Emission factors represent the combined refrigerant loss types of intial, operating, intermittent, and disposal. SCC unit refers to tons produced.

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Cooling Tower

Cooling Tower Parameters

Number of One Cell Towers[1]	8
Total Water Flow Rate (gal/min)[1]	22,365
Flow of cooling water (lbs/hr)	11,191,446
TDS of blowdown (mg/l or ppmw)[1]	1,500
Flow of dissolved solids (lbs/hr)	16,787
Fraction of flow producing PM_{10} drift[2]	0.300
Control efficiency of drift eliminators (gal drift/gal flow)[1]	0.00005
Number of cells per tower (outlet fans)[1]	1
Height at cell release (ft)[1]	77
Discharge flow per cell (ACFM)[1]	314,078
Diameter of each cell (ft)[1]	13
Area of cell discharge (ft^2)[1]	139.6
Average Temperature of cell discharge (degF)[1]	80.3
Exit Velocity (ft/s):	37.50

Cooling Tower Emissions

PM Emissions (lb/hr)	PM Emissions (ton/yr)	PM_{10} Emissions (lb/hr)	PM_{10} Emissions (ton/yr)	$PM_{2.5}$ Emissions (lb/hr)[3]	$PM_{2.5}$ Emissions (ton/yr)[3]
0.84	3.68	0.25	1.10	0.25	1.10

PM-10 Emissions from Each Cooling Tower (lb/hr) 0.03

Notes:
Emission Calculation Method from AP 42, Sect.13.4-1

[1] As provided in the Environmental Permitting Data, Shambaugh & Son Job 170993, 12/192011 (attachment to email from Matt Meier/MSKTD & Associates on December 20,2011)

[2] From "Calculating Realistic PM_{10} Emissions From Cooling Towers" (J. Reisman, G. Frisbie). Presented at 2001 AWMA Annual Meeting.

[3] Assumes that $PM_{2.5}$ emissions are equal to PM_{10} emissions.

AgroFarma Twin Falls - Cheboal Facility Emissions Estimate

Flare Emissions

Heat Input (MMBtu/hr)	3.52	
Manufacturer	Varco	
Fuel Type	Biogas	
Biogas Heat Value (Btu/scf)	600	Based on engineering judgement of USAB operating near pH of 7
Max Biogas Production (scf/day) (based on highest expected sulfate concentration)	140,638	Based on a maximum daily reactor loading of 25,000 lb/day of COD
Biogas Primary Fuel Use (MMscf/hr)	0.0059	
Operation (hrs/yr)	8,760	
Biogas Primary Fuel Use (MMscf/yr)	52	
Hydrogen Sulfide (H_2S) Biogas Concentration (ppmv)	4,000	Based on engineering judgement and Agro Farma's NY plant COD/S ratio
H_2S Biogas Concentration (mg/m^3)	5,579	
Uncontrolled H_2S Mass Feedrate (lb/hr)	2.0	
Assumed H_2S Conversion for SO_2 Emissions	90%	

Criteria Pollutant	CAS No.	Emission Factor [1]		Uncontrolled Potential to Emit: Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)
Total Particulate Matter (PM) [2]		7.6	lb MM scf NG	0.04	350	0.18
Nitrogen Oxides (NO_x)		0.063	lb/MM Btu	0.24	2,102	1.05
Sulfur Dioxide (SO_2) [3]		H_2S / SO_2 Mass Balance		3.38	29,609	14.80
Carbon Monoxide (CO)		0.37	lb/MM Btu	1.30	11,388	5.69
VOC		0.06	lb/MM Btu	0.21	1,840	0.92

Toxic Air Pollutants - H_2S	CAS No.	Emission Factor [4] (% Destruction)		Primary Fuel - Biogas: Controlled Potential to Emit: Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	IDAPA 58.01.01.585/586 - EL (lb/hr)	PTE Emission Rate vs. EL	HAP
Hydrogen sulfide*	7783-06-4	90%		2.00E-01	1.75E+03	3.24E+00	9.33E-01	Below	HAP

Toxic Air Pollutants - Others [5]	CAS No.	Digester Gas Emission Factor (lb/10^6 scf)		Primary Fuel - Biogas *: Uncontrolled Potential to Emit: Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	IDAPA 58.01.01.585/586 - EL (lb/hr)	PTE Emission Rate vs. EL	HAP
Ammonia	7664-41-7	3.20E+00		1.89E-02	1.65E+02	8.30E-02	1.20E+00	Below	
Benzene*	71-43-2	1.63E-01		9.36E-04	8.22E+00	4.11E-03	8.00E-04	Exceeds	HAP
Formaldehyde*	50-00-0	1.17E+00		6.90E-03	6.04E+01	3.02E-02	5.10E-04	Exceeds	HAP
Total PAHs	n/a	1.40E-02		8.26E-05	7.24E-01	3.62E-04	2.00E-06	Exceeds	
Total HAPS				0.21		0.03			

Notes:

[1] Controlled PTE is based on 100 hours per year

[2] PM_{10} is assumed to equal PM (PM emission factor based on *Cummins EPA Tier 3 Exhaust Emission Compliance Statement*)

[3] $PM_{2.5}$ is assumed to equal PM (PM emission factor based on *Cummins EPA Tier 3 Exhaust Emission Compliance Statement*)

[4] NOx is assumed to equal NOx + HC (NOx emission factor based on *Cummins EPA Tier 3 Exhaust Emission Compliance Statement*)

[4] SO_2 is based on AP-42, Section 3.4 Large Stationary Diesel and All Stationary Dual-Fuel Engines, Table 3.4-1, 10/96, multiplied by sulfur content of fuel

[5] CO emission factor is based on *Cummins EPA Tier 3 Exhaust Emission Compliance Statement*

[6] VOC emission factors as stated in the Cummins Power Generation Exhaust Emission Data Sheet for a 324 HP Cummins Inc. QSB7-G5 NR3

[7] Toxic emission factors derived from EPA AP-42, Section 3.3 Gasoline and Diesel Industrial Engines, Table 3.3-2, 10/96

[8] Naphthalene is based on an annual average

[9] Polynuclear aromatic hydrocarbons is the sum of benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(a)pyrene

GHG Emissions

Compound10	Emissions (metric tons)	GWP	CO2e (metric tons/year)	CO2e (short tons/year)
CO_2	144.96	1	144.96	159.79
CH_4	0.0059	21	0.12	0.13
N_2O	0.0012	310	0.37	0.41
Total	144.97		145.45	160.33

For CO2, Use Equation C-1 from 40 CFR 98 Subpart C:

CO2 = 1x10-3 x Fuel x HHV x EF

CO2 = Annual CO2 mass emissions in Metric Tons	=	144.96
Fuel = Volume of fuel used (gallons)	=	14,000
HHV = High Heat Value from Table C-1 (mmBTU/gal)	=	0.14
EFCO2 = Emission factor (kg/mmBTU)	=	73.96

For CH4 and N2O, Use Equation C-8 from 40 CFR 98 Subpart C:

CH4, N2O = 1x10-3 x Fuel x HHV x EF

CH4 = Annual CH4 mass emissions in Metric Tons	=	0.0059
N2O = Annual N2O mass emissions in Metric Tons	=	0.0012
Fuel = Volume of fuel used (gallons)	=	14,000
HHV = High Heat Value from Table C-1 (mmBTU/Gal)	=	0.14
EFCH4 = Emission factor (kg/mmBTU)	=	3.00E-03
EFN2O = Emission factor (kg/mmBTU)	=	6.00E-04

Notes

[10] 40 CFR 98.32 - For stationary fuel combustion sources only, report CO2, CH4, and N2O

GWP = Global Warming Potential - 40 CFR 98 Subpart A, Table A-1

AgroFarma Twin Falls - Chobani Facility Emissions Estimate
Emergency Generator 2

Generator Name	Caterpillar	EPA Tier 3
Model No.	C15 ATAAC (ENGINE)	
Engine Power Rating (hp)	470	350 kW
Fuel Type	Distillate #2	
- maximum sulfur content	0.0015%	Ultra low sulfur diesel fuel
Maximum Firing Rate (gals/hr)	28.6	100% load
Maximum Heat Input Rating (Btu/hr)	4,004,000	
Uncontrolled Max Hours of Operation	500	
Controlled Max Hours of Operation	100	Testing frequency will be limited to 2-hr per week
Annual Firing Rate (gals/yr)	14,300	
Heat Capacity of Fuel (Btu/gal)	140,000	

Pollutant	Emission Factor (g/hp-hr)	Emission Factor (lb/HP-hr)	Uncontrolled Potential to Emit			Controlled Potential to Emit[1]		
			Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)
Particulate Matter (PM_{10})[1]	0.046		0.05	25.00	0.01	0.05	5.0	2.50E-03
Particulate Matter ($PM_{2.5}$)[1]	0.05		0.05	25.00	0.01	0.05	5.0	2.50E-03
Nitrogen Oxides (NOx)[1]	3.34		3.46	1730.00	0.87	3.46	346	0.17
Sulfur Oxides (SO_2)[2]		0.000012	5.64E-03	2.82	1.41E-03	5.64E-03	0.56	2.80E-04
Carbon Monoxide (CO)[1]	0.5		0.52	260.00	0.13	0.52	52	0.03
TOC as VOC[1]	0.04		0.04	20.00	0.01	0.04	4.00	2.00E-03

Toxics[3]	CAS Number	Emission Factor (lb/MMBtu)	Uncontrolled Potential to Emit			Controlled Potential to Emit			IDAPA 58.01.01.585/586 - EL (lb/hr)	PTE Emission Rate vs. EL	HAP
			Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)	Emission Rate (lb/hr)	Emission Rate (lb/yr)	Emission Rate (ton/yr)			
Benzene	71-43-2	9.33E-04	3.74E-03	1.87E+00	9.35E-04	3.74E-03	3.74E-01	1.87E-04	8.00E-04	Exceeds	HAP
Formaldehyde	50-00-0	1.18E-03	4.72E-03	2.36E+00	1.18E-03	4.72E-03	4.72E-01	2.36E-04	5.10E-04	Exceeds	HAP
Naphthalene[4]	91-20-3	8.48E-05	3.40E-04	1.70E-01	8.50E-05	1.94E-05	1.94E-03	9.70E-07	9.10E-05	Exceeds	HAP
Toluene	108-88-3	4.09E-04	1.64E-03	8.20E-01	4.10E-04	1.64E-03	1.64E-01	8.20E-05	2.50E+01	Below	HAP
o-Xylenes	1330-20-7	2.85E-04	1.14E-03	5.70E-01	2.85E-04	1.14E-03	1.14E-01	5.70E-05	2.90E+01	Below	HAP
Acetaldehyde	75-07-0	7.67E-04	3.07E-03	1.54E+00	7.70E-04	3.07E-03	3.07E-01	1.54E-04	3.00E-03	Exceeds	HAP
Acrolein	107-02-8	9.25E-05	3.70E-04	1.85E-01	9.25E-05	3.70E-04	3.70E-02	1.85E-05	1.70E-02	Below	HAP
1,3-Butadiene	106-99-0	3.91E-05	1.57E-04	7.85E-02	3.93E-05	1.57E-04	1.57E-02	7.85E-06	2.40E-05	Exceeds	HAP
Benzo(g,h,i) perylene		4.89E-07	1.96E-06	9.80E-04	4.90E-07	1.96E-06	1.96E-04	9.80E-08	PAH	NA	
Benz(a)anthracene	56-55-3	1.68E-06	6.73E-06	3.37E-03	1.69E-06	6.73E-06	6.73E-04	3.37E-07	PAH	NA	
Benzo(b)fluoranthene	205-99-2	9.91E-08	3.97E-07	1.99E-04	9.95E-08	3.97E-07	3.97E-05	1.99E-08	PAH	NA	
Benzo(k)fluoranthene	205-82-3	1.55E-07	6.21E-07	3.11E-04	1.56E-07	6.21E-07	6.21E-05	3.11E-08	PAH	NA	
Chrysene	218-01-9	3.53E-07	1.41E-06	7.05E-04	3.53E-07	1.41E-06	1.41E-04	7.05E-08	PAH	NA	
Dibenzo(a,h)anthracene	53-70-3	5.83E-07	2.33E-06	1.17E-03	5.85E-07	2.33E-06	2.33E-04	1.17E-07	PAH	NA	
Indeno(1,2,3-cd)pyrene	193-39-5	3.75E-07	1.50E-06	7.50E-04	3.75E-07	1.50E-06	1.50E-04	7.50E-08	PAH	NA	
Benzo(a)pyrene	50-32-8	1.88E-07	7.53E-07	3.77E-04	1.89E-07	7.53E-07	7.53E-05	3.77E-08	PAH	NA	
Total PAH[5]			1.37E-05	6.88E-03	3.45E-06	1.37E-05	1.37E-03	6.88E-07	2.00E-06	Exceeds	HAP
Total HAPS			0.015		0.004	0.015		7.44E-04			

Notes:

[1] Controlled PTE is based on 100 hours per year

[2] Nox, PM, CO, and VOC emission factor based on emission rates stated in the CAT® C15 ATAAC diesel engine specs for a EPA Tier 3 engine for emergency standby use. PM_{10} and $PM_{2.5}$ is assumed to equal PM.

[5] SO2 emissions are based on the complete conversion of 0.0015 wt% (~ 15 ppm) sulfur in the ultra low sulfur diesel fuel (from EPA AP-42, Table 3.4-1)

[3] Toxic emission factors derived from EPA AP-42, Section 3.3 Gasoline and Diesel Industrial Engines, Table 3.3-2, 10/96

[4] Naphthalene is based on an annual average

[5] Polynuclear aromatic hydrocarbons is the sum of benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene,dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(a)pyrene

GHG Emissions

Compound[6]	Emissions (metric tons)	GWP	CO2e (metric tons/year)	CO2e (short tons/year)
CO_2	148.07	1	148.07	163.22
CH_4	0.0060	21	0.13	0.14
N_2O	0.0012	310	0.37	0.41
Total	148.08		148.57	163.77

For CO2, Use Equation C-1 from 40 CFR 98 Subpart C:

CO2 = 1x10-3 x Fuel x HHV x EF

CO2 = Annual CO2 mass emissions in Metric Tons	=	148.07
Fuel = Volume of fuel used (gallons)	=	14,300
HHV = High Heat Value from Table C-1 (mmBTU/gal)	=	0.14
EFCO2 = Emission factor (kg/mmBTU)	=	73.96

For CH4 and N2O, Use Equation C-8 from 40 CFR 98 Subpart C:

CH4, N2O = 1x10-3 x Fuel x HHV x EF

CH4 = Annual CH4 mass emissions in Metric Tons	=	0.0060
N2O = Annual N2O mass emissions in Metric Tons	=	0.0012
Fuel = Volume of fuel used (gallons)	=	14,300
HHV = High Heat Value from Table C-1 (mmBTU/Gal)	=	0.14
EFCH4 = Emission factor (kg/mmBTU)	=	3.00E-03
EFN2O = Emission factor (kg/mmBTU)	=	6.00E-04

Notes

[6] 40 CFR 98.32 - For stationary fuel combustion sources only, report CO2, CH4, and N2O

GWP = Global Warming Potential - 40 CFR 98 Subpart A, Table A-1

AgroFarma Twin Falls - Chobani Facility Emissions Estimate

Emergency Generator 2

Generator Name	Caterpillar	EPA Tier 3
Model No.	C15 ATAAC (ENGINE)	
Engine Power Rating (hp)	470	350 kW
Fuel Type	Distillate #2	
- maximum sulfur content	0.0015%	Ultra low sulfur diesel fuel
Maximum Firing Rate (gals/hr)	28.6	100% load
Maximum Heat Input Rating (Btu/hr)	4,004,000	
Uncontrolled Max Hours of Operation	500	
Controlled Max Hours of Operation	100	Testing frequency will be limited to 2-hr per week
Annual Firing Rate (gals/yr)	14,300	
Heat Capacity of Fuel (Btu/gal)	140,000	

Pollutant	Emission Factor (g/hp-hr)	Emission Factor (lb/HP-hr)	Uncontrolled Potential to Emit: Emission Rate (lb/hr)	Uncontrolled Potential to Emit: Emission Rate (lb/yr)	Uncontrolled Potential to Emit: Emission Rate (ton/yr)	Controlled Potential to Emit[1]: Emission Rate (lb/hr)	Controlled Potential to Emit[1]: Emission Rate (lb/yr)	Controlled Potential to Emit[1]: Emission Rate (ton/yr)
Particulate Matter (PM_{10})[1]	0.046		0.05	25.00	0.01	0.05	5.0	2.50E-03
Particulate Matter ($PM_{2.5}$)[1]	0.05		0.05	25.00	0.01	0.05	5.0	2.50E-03
Nitrogen Oxides (NOx)[1]	3.34		3.46	1730.00	0.87	3.46	346	0.17
Sulfur Oxides (SO_2)[2]		0.000012	5.64E-03	2.82	1.41E-03	5.64E-03	0.56	2.80E-04
Carbon Monoxide (CO)[1]	0.5		0.52	260.00	0.13	0.52	52	0.03
TOC as VOC[1]	0.04		0.04	20.00	0.01	0.04	4.00	2.00E-03

Toxics[3]	CAS Number	Emission Factor (lb/MMBtu)	Uncontrolled Potential to Emit: Emission Rate (lb/hr)	Uncontrolled Potential to Emit: Emission Rate (lb/yr)	Uncontrolled Potential to Emit: Emission Rate (ton/yr)	Controlled Potential to Emit: Emission Rate (lb/hr)	Controlled Potential to Emit: Emission Rate (lb/yr)	Controlled Potential to Emit: Emission Rate (ton/yr)	IDAPA 58.01.01.6 85/586 - EL (lb/hr)	PTE Emission Rate vs. EL	HAP
Benzene	71-43-2	9.33E-04	3.74E-03	1.87E+00	9.35E-04	3.74E-03	3.74E-01	1.87E-04	8.00E-04	Exceeds	HAP
Formaldehyde	50-00-0	1.18E-03	4.72E-03	2.36E+00	1.18E-03	4.72E-03	4.72E-01	2.36E-04	5.10E-04	Exceeds	HAP
Naphthalene[4]	91-20-3	8.48E-05	3.40E-04	1.70E-01	8.50E-05	1.94E-05	1.94E-03	9.70E-07	9.10E-05	Exceeds	HAP
Toluene	108-88-3	4.09E-04	1.64E-03	8.20E-01	4.10E-04	1.64E-03	1.64E-01	8.20E-05	2.50E+01	Below	HAP
o-Xylenes	1330-20-7	2.85E-04	1.14E-03	5.70E-01	2.85E-04	1.14E-03	1.14E-01	5.70E-05	2.90E+01	Below	HAP
Acetaldehyde	75-07-0	7.67E-04	3.07E-03	1.54E+00	7.70E-04	3.07E-03	3.07E-01	1.54E-04	3.00E-03	Exceeds	HAP
Acrolein	107-02-8	9.25E-05	3.70E-04	1.85E-01	9.25E-05	3.70E-04	3.70E-02	1.85E-05	1.70E-02	Below	HAP
1,3-Butadiene	106-99-0	3.91E-05	1.57E-04	7.85E-02	3.93E-05	1.57E-04	1.57E-02	7.85E-06	2.40E-05	Exceeds	HAP
Benzo(g,h,i) perylene		4.89E-07	1.96E-06	9.80E-04	4.90E-07	1.96E-06	1.96E-04	9.80E-08	PAH	NA	
Benz(a)anthracene	56-55-3	1.68E-06	6.73E-06	3.37E-03	1.69E-06	6.73E-06	6.73E-04	3.37E-07	PAH	NA	
Benzo(b)fluoranthene	205-99-2	9.91E-08	3.97E-07	1.99E-04	9.95E-08	3.97E-07	3.97E-05	1.99E-08	PAH	NA	
Benzo(k)fluoranthene	205-82-3	1.55E-07	6.21E-07	3.11E-04	1.56E-07	6.21E-07	6.21E-05	3.11E-08	PAH	NA	
Chrysene	218-01-9	3.53E-07	1.41E-06	7.05E-04	3.53E-07	1.41E-06	1.41E-04	7.05E-08	PAH	NA	
Dibenzo(a,h)anthracene	53-70-3	5.83E-07	2.33E-06	1.17E-03	5.85E-07	2.33E-06	2.33E-04	1.17E-07	PAH	NA	
Indeno(1,2,3-cd)pyrene	193-39-5	3.75E-07	1.50E-06	7.50E-04	3.75E-07	1.50E-06	1.50E-04	7.50E-08	PAH	NA	
Benzo(a)pyrene	50-32-8	1.88E-07	7.53E-07	3.77E-04	1.89E-07	7.53E-07	7.53E-05	3.77E-08	PAH	NA	
Total PAH[5]			1.37E-05	6.88E-03	3.45E-06	1.37E-05	1.37E-03	6.88E-07	2.00E-06	Exceeds	HAP
Total HAPS			0.015		0.004	0.015		7.44E-04			

Notes:

[1] Controlled PTE is based on 100 hours per year

[2] Nox, PM, CO, and VOC emission factor based on emission rates stated in the CAT® C15 ATAAC diesel engine specs for a EPA Tier 3 engine for emergency standby use. PM_{10} and $PM_{2.5}$ is assumed to equal PM.

[5] SO2 emissions are based on the complete conversion of 0.0015 wt% (~ 15 ppm) sulfur in the ultra low sulfur diesel fuel (from EPA AP-42, Table 3.4-1)

[3] Toxic emission factors derived from EPA AP-42, Section 3.3 Gasoline and Diesel Industrial Engines, Table 3.3-2, 10/96

[4] Naphthalene is based on an annual average

[5] Polynuclear aromatic hydrocarbons is the sum of benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene,dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and benzo(a)pyrene

GHG Emissions

Compound[6]	Emissions (metric tons)	GWP	CO2e (metric tons/year)	CO2e (short tons/year)
CO_2	148.07	1	148.07	163.22
CH_4	0.0060	21	0.13	0.14
N_2O	0.0012	310	0.37	0.41
Total	148.08		148.57	163.77

For CO2, Use Equation C-1 from 40 CFR 98 Subpart C:

CO2 = 1x10-3 x Fuel x HHV x EF

CO2 = Annual CO2 mass emissions in Metric Tons	=	148.07
Fuel = Volume of fuel used (gallons)	=	14,300
HHV = High Heat Value from Table C-1 (mmBTU/gal)	=	0.14
EFCO2 = Emission factor (kg/mmBTU)	=	73.96

For CH4 and N2O, Use Equation C-8 from 40 CFR 98 Subpart C:

CH4, N2O = 1x10-3 x Fuel x HHV x EF

CH4 = Annual CH4 mass emissions in Metric Tons	=	0.0060
N2O = Annual N2O mass emissions in Metric Tons	=	0.0012
Fuel = Volume of fuel used (gallons)	=	14,300
HHV = High Heat Value from Table C-1 (mmBTU/Gal)	=	0.14
EFCH4 = Emission factor (kg/mmBTU)	=	3.00E-03
EFN2O = Emission factor (kg/mmBTU)	=	6.00E-04

Notes

[6] 40 CFR 98.32 - For stationary fuel combustion sources only, report CO2, CH4, and N2O

GWP = Global Warming Potential - 40 CFR 98 Subpart A, Table A-1

APPENDIX B – AMBIENT AIR QUALITY IMPACT ANALYSES

MEMORANDUM

DATE: March 25, 2013

TO: Kelli Wetzel, Permit Engineer, Air Program

FROM: Darrin Mehr, Air Quality Analyst, Air Program

PROJECT NUMBER: P-2012.0003 PROJ 61135

SUBJECT: Modeling Demonstration for Chobani Idaho, Inc., Permit to Construct Application to Include the Wastewater Pretreatment Facility Under the Facility-wide PTC for the Facility in Twin Falls, Idaho

1.0 Summary

Chobani Idaho, Incorporated (Chobani) submitted an application for a Permit to Construct (PTC) to incorporate the wastewater pretreatment facility (PTF) in the Chobani facility's PTC. This project is a modification to the initial Chobani facility-wide PTC.

The Chobani facility was issued a PTC on May 4, 2012. The PTF was owned and operated by the City of Twin Falls, and was issued a PTC on July 18, 2012.

Chobani's dairy processing facility processes raw milk into yogurt product. Emissions units for the facility and fuel types for Phase I of this facility include:

- Five boilers each with a rated heat input capacity of 32.7 million Btu/hr fired on natural gas;
- Ten rooftop-mounted air makeup units fired on natural gas;
- Eight infrared heaters fired on natural gas;
- One cooling tower equipped with eight cells; and,
- An anhydrous ammonia refrigeration system.

The emission units associated with the PTF and this modification project's addition to the dairy processing facility include:

- One candlestick flare to combust biogas generated in anaerobic digesters at a heat input rate of 3.52 million British thermal units per hour (MMBtu/hr);
- One emergency electrical generator set rated at 175 kilowatts (kW) or 324 brake horsepower (bhp).
- One emergency electrical generator set rated at 350 kW or 469 bhp.
- One boiler rated at 8 MMBtu/hr capabable of combusting natural gas and/or the PTF digester biogas.

The project timeline and associated submittals primarily reflecting the modeling demonstration are listed below:

- October 24, 2012: DEQ received a modeling protocol from CH2M HILL, on behalf of Chobani.
- November 1, 2012: DEQ issued a modeling protocol approval letter to Chobani.
- November 29, 2012: DEQ received a Permit to Construct application from Chobani.

- December 21, 2012: DEQ issued an incompleteness determination letter to Chobani.
- January 8, 2013: DEQ received a response to the incompleteness determination.
- February 6, 2013: DEQ declared the application complete.
- March 25, 2013: DEQ modeling staff provided a draft modeling memo for the project.

The facility is not a *designated facility*, as defined in IDAPA 58.01.01.006, Rules for the Control of Air Pollution in Idaho (Idaho Air Rules). The facility's potential to emit (PTE) of particulate matter with an aerodynamic diameter of ten microns or less (PM_{10}), sulfur dioxide (SO_2), carbon monoxide (CO), and nitrogen oxides (NO_x) each is less than 100 tons per year (T/yr). The facility is not a major facility under the New Source Review (NSR) PSD program.

The proposed project is subject to review under Idaho Air Rules Section 200. Idaho Air Rules Section 203.02 requires the facility to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS). Idaho Air Rules Section 210 requires the facility to demonstrate compliance with the toxic air pollutants (TAPs) increments, which are listed in Sections 585 and 586.

The submitted modeling analyses, in combination with DEQ's analyses: 1) utilized appropriate methods and models; 2) were conducted using reasonably accurate or conservative model parameters and input data; 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed that predicted pollutant concentrations from emissions associated with the facility, when combined with a reasonably conservative background concentration value appropriate for the area, were below NAAQS and other applicable increments at all ambient air locations.

The submitted modeling analyses were conducted by CH2M HILL, on behalf of Chobani. Key assumptions and results that should be considered in the development of the permit are shown in Table 1.

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, in combination with DEQ's analyses, demonstrated to the satisfaction of the Department that operations of the proposed facility 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.

Table 1. KEY ASSUMPTIONS USED IN MODELING ANALYSES	
Criteria/Assumption/Result	**Explanation/Consideration**
The emissions units associated with the wastewater pretreatment facility (PTF) were modeled using several operational constraints that reduced ambient impacts for the modeling demonstration. • The PTF anaerobic digester system is capable of producing 140,688 standard cubic feet per day (scf/day) of biogas. • The biogas heat content is 600 Btu/scf. • The biogas hydrogen sulfide content is 4,000 parts per million by volume (ppm_v) or less.	Hydrogen sulfide content and quantities of biogas generated directly relate to the quantity of SO_2 emissions from the flare and Boiler 6 for the pretreatment plant. The quantities of biogas generated directly relate to the quantities of all other pollutants emitted by these two emissions units.
The dairy processing portion of the facility was assumed to operate without any additional restrictions. Four separate operating scenarios were modeled by Chobani that affected the emissions units associated with the wastewater pretreatment facility. • **Scenario 1:** Boiler 6 and Generator 1 operating (Flare and Generator 2 shut down) • **Scenario 2:** Boiler 6 + Generator 2 (Flare and Generator 1 shut down) • **Scenario 3:** Flare + Generator 1 (Boiler 6 and Generator 2 shut down) • **Scenario 4:** Flare + Generator 2 (Boiler 6 and Generator 1 shut down) In addition to the 4 operating scenarios limiting impacts due to operational constraints, Chobani restricted testing and maintenance hours for each of the two generators to 4 hours per day and 100 hours per year.	The modeled scenarios create the following operating constraints: • Boiler 6 (Calorix boiler) and the flare will not operate simultaneously. • Emergency electrical generators #1 and #2 will not be operated for testing and maintenance simultaneously. • Emergency electrical generators #1 and #2 will be operated for testing and maintenance from 9 a.m. to 1 p.m. The generator engines were modeled on every day of the year for short-term SIL and NAAQS demonstrations. • Emergency electrical generators #1 and #2 will be operated for testing and maintenance for up to 100 hours per year each.
Worst-case emissions for Boiler 6 – the Calorix boiler for the PTF – were used in the modeling demonstration under the following quantities of fuels: • 4.46 MMBtu/hr natural gas (56% of rated heat input) • 3.54 MMBtu/hr biogas (44% of rated heat input)	Potential SO_2 emissions for the Calorix boiler (Boiler 6) and the flare were based on the hydrogen sulfide content in the biogas and the quantity of biogas combusted on a short-term basis. The daily biogas production rate was spread evenly over 24 hours per day for the hourly modeled emissions. An average biogas heat content of 600 Btu/hr was used with the biogas production rate to determine the heat input of the biogas fuel to the candlestick flare and Boiler 6.

2.0 Background Information

2.1 Applicable Air Quality Impact Limits and Modeling Requirements

This section identifies applicable ambient air quality limits and analyses used to demonstrate compliance.

2.1.1 Area Classification

The Chobani facility is located in Twin Falls County, which is designated as an attainment or unclassifiable area for sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), lead (Pb), ozone (O_3), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}), and particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$).

There are no Class I areas within 10 kilometers of the facility.

2.1.2 Significant and Full Impact Analyses

If estimated maximum pollutant impacts to ambient air from the emissions sources associated with the existing unpermitted facility exceed the significant contribution levels (SCLs) of Section 006 of IDAPA 58.01.01, Rules for the Control of Air Pollution in Idaho (Idaho Air Rules), then a cumulative impact analysis is necessary to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) and Idaho Air Rules Section 203.02 for Permits to Construct and Section 403.02 for Tier II Operating Permits. A cumulative NAAQS impact analysis for attainment area pollutants involves adding ambient impacts from facility-wide emissions, and emissions from any nearby co-contributing sources, to DEQ-approved background concentration values that are appropriate for the criteria pollutant/averaging-time at the facility location and the area of significant impact. The resulting maximum pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. The SCLs and the modeled value that must be used for comparison to the NAAQS are also listed in Table 2.

The annual $PM_{2.5}$ standard was changed from 15 $\mu g/m^3$ to 12 $\mu g/m^3$ on December 14, 2012. The revised standard will not become applicable for permitting purposes until it is incorporated *sine die* into Idaho's Air Rules. The applicable annual $PM_{2.5}$ NAAQS for this project is 15 $\mu g/m^3$.

The $PM_{2.5}$ 24-hour and annual SILs were vacated and remanded by the D.C. Circuit U.S. Court of Appeals, with a decision made on January 22, 2013. This decision most directly affects "major" projects subject to the Prevention of Significant Deterioration (PSD) program (applicable to designated facilities with emissions of a criteria pollutant over 100 tons per year). For minor source permitting, DEQ determined the vacated SILs will still be used as a screening tool to evaluate when a cumulative impact analysis must be performed, but the SIL will not be used exclusively as a level below which impacts of a new source or modification can be considered as not causing or significantly contributing to a $PM_{2.5}$ NAAQS violation. Additional considerations used to evaluate the need for a cumulative impact analysis will included the following: 1) other potentially co-contributing sources in the area; 2) background concentrations for the area impacted; 3) results of the SIL analysis in relation to other sources and background concentrations; 4) presence of sensitive receptors in the area such as residences, schools, hospitals, parks, etc.

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 1st highest[j]
	Annual	0.3	15[k]	Mean of maximum 1st highest[j]
Carbon monoxide (CO)	1-hour	2,000	40,000[l]	Maximum 2nd highest[m]
	8-hour	500	10,000[l]	Maximum 2nd highest[m]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[n] (7.8 $\mu g/m^3$)	75 ppb[o] (196 $\mu g/m^3$)	Mean of maximum 4th highest[p]
	3-hour	25	1,300[l]	Maximum 2nd highest[m]
	24-hour	5	365[l]	Maximum 2nd highest[m]
	Annual	1.0	80[q]	Maximum 1st highest[m]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb[n] (7.5 $\mu g/m^3$)	100 ppb[r] (188 $\mu g/m^3$)	Mean of maximum 8th highest[s]
	Annual	1.0	100[q]	Maximum 1st highest[m]
Lead (Pb)	3-month[t]	NA	0.15[q]	Maximum 1st highest[m]
	Quarterly	NA	1.5[q]	Maximum 1st highest[m]

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 average of the upper 98th percentile of the annual distribution of 24-hour concentrations.
j. 5-year mean of the 1st highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. The monitoring design value is used for background concentrations for $PM_{2.5}$ analyses. This approach is also used for the significant impact analysis.
k. 3-year average of annual concentration.
l. Not to be exceeded more than once per year.
m. Concentration at any modeled receptor.
n. Interim SIL established by EPA policy memorandum.
o. 3-year average of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.
p. 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 average of maximum modeled 1-hour impacts for each year is used.
q. Not to be exceeded in any calendar year.
r. 3-year average of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.
s. 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 average of maximum modeled 1-hour impacts for each year is used.
t. 3-month rolling average.

2.1.3 TAPs Analyses

The increase in emissions from the proposed project are required to demonstrate compliance with the toxic air pollutant (TAP) increments, with an ambient impact dispersion analysis required for any TAP having a requested potential emission rate that exceeds the screening emission rate limit (EL) specified by Idaho Air Rules Section 585 or 586. All TAPs emission rate increases are evaluated for compliance with the TAPs ELs, and if greater than any EL, with the allowable TAP increment.

This project involves including an existing permitted PTF with the existing permitted dairy processing facility. The PTF sources were considered as new sources for the Chobani facility.

2.2 Background Concentrations

2.2.1 Ambient Background Values

Background concentration values were provided by DEQ in the modeling protocol approval letter for this project. PM_{10}, $PM_{2.5}$, and NO_x emissions were expected to exceed modeling applicability thresholds.

<u>PM_{10}, 24-hour average and $PM_{2.5}$, 24-hour and annual average</u>

DEQ's recommended particulate matter ambient background concentrations follow:

- SO_2: 33.1 $\mu g/m^3$, 1-hour average, and
  2.6 $\mu g/m^3$, annual average.

- $PM_{2.5}$: 21.3 $\mu g/m^3$, 24-hour average, based on the three year average of the 98th percentile values.

  The $PM_{2.5}$ background concentrations were based on Twin Falls monitoring data collected from 2000 through 2002.

<u>NO_2, 1-hour average</u>

For NO_2 modeling, Chobani chose to demonstrate compliance using the Tier 3 Plume Volume Molar Ratio Method (PVMRM). For this option, DEQ provided Chobani with a representative day of ozone and NO_2 ambient background concentrations, and consisted of individual value for every hour in a day. The NO_2 values were based on one year of monitoring data that DEQ collected from June 2009 until June 2010 at the St. Luke's Meridian, Idaho monitoring site. Each of the 24 hourly values was established using the 2nd high value for that hour.

The hourly ozone backgrounds were established based on monitoring data from a site near Parma, Idaho that was collected from June 27, 2007 through October 12, 2007. Hourly ozone values were developed based on the mean of the sample plus one standard deviation. Table 3 below lists the recommended ozone and NO_2 background data.

Table 3. NITROGEN DIOXIDE AND OZONE BACKGROUNDS		
Hour	NO_2[a] (µg/m^3)[b]	Ozone (ppb)[c]
1	50.0	27.9
2	48.1	28.5
3	45.7	26.8
4	46.2	24.1
5	56.7	22.1
6	54.9	21.4
7	56.7	19.7
8	60.1	22.8
9	54.9	30.5
10	48.1	37.8
11	39.5	43.8
12	32.6	48.8
13	34.3	53.0
14	34.3	55.0
15	37.8	57.1
16	46.4	57.6
17	49.8	57.1
18	61.8	55.1
19	70.4	49.0
20	85.9	39.0
21	79.0	30.9
22	75.5	28.5
23	63.5	29.4
24	49.8	29.6

a. Nitrogen dioxide.
b. Micrograms per cubic meter.
c. Parts per billion.

The modeling demonstration supporting this project did not include 1-hour and 8-hour CO, 24-hour PM_{10}, annual $PM_{2.5}$, annual NO_2, or 3-month rolling average lead compliance demonstrations. Emission rates attributed to this project were below modeling applicability thresholds and DEQ did not require modeling for these pollutants.

DEQ's modeling protocol approval letter did not include a modeling exemption concurrence for annual NO_2 SIL and NAAQS analyses, but DEQ agrees that the annual emissions rate increase of 3.8 tons per year for the project, as listed in Table 3 of Chobani's October 24, 2012 modeling protocol, may be exempted for this project. An extensive analysis for demonstrating compliance with the 1-hour NO_2 SIL and NAAQS was required by DEQ.

2.2.2 Nearby Source Analyses

DEQ requested that NO_x emissions from The Amalgamated Sugar Company (TASCO) facility be included in a full impact analysis, if a significant impact analysis showed that a full impact analysis was required. Based on the preliminary understanding of the Chobani facility emissions units and the magnitude of the TASCO facility's potential NO_x emissions, and the proximity of the TASCO facility to the Chobani facility, the nearby source analysis was requested for the 1-hour average NO_2 and the 1-hour average SO_2 NAAQS. Impacts from Chobani were evaluated to determine whether they caused or contributed to an exceedence of the 1-hour NO_2 and 1-hour SO_2 NAAQS at any receptor where Chobani's ambient impacts were above the significant contribution levels (SILs) in the significant impact analyses.

The emission rates supplied by DEQ for TASCO were found on file with the facility's Tier I operating

permit as a worst-case modeling demonstration of potential hourly NO_x and SO_2 emissions. TASCO operates under two distinct operating scenarios—the sugar beet processing campaign, and when all of the crop sugar beets have been processed, sugar production under the "juice campaign" occurs. Emission rates and emission unit operating schedules differ for each campaign. Nearby source exhaust parameters are listed in Table 4. The emission rates of the TASCO sources are listed below in Table 5. This is the same data used in the permitting projects for the initial Chobani dairy production and City of Twin Falls wastewater PTF permits.

Table 4. TASCO EXHAUST PARAMETERS

Source ID	Source Description	UTM[a] Coordinates, Zone 11, NAD27		Base Elevation (m)	Stack Height (m)	Temperature (Kelvin)	Exit Velocity (m/s)[c]	Stack Diameter (m)
		Easting (X) (m)[b]	Northing (Y) (m)					
PB1	Foster Wheeler Boiler	710,939	4,711,971	1,160.68	47.85	416.48	15.06	2.01
PB2	Babcock and Wilcox Boiler	710,914	4,712,058	1,160.68	66.14	456.48	22.56	2.74
PB3	Keeler Boiler	710,924	4,712,023	1,160.68	15.0	422.04	10.92	1.22
PULPD	Pulp Dryer	710,833	4,712,111	1,160.68	28.04	347.59	6.87	2.44

a. Universal Transverse Mercator Coordinate System.
b. Meters.
c. Meters per second.
d. Sulfur dioxide
e. Pounds per hour.

Table 5. MODELED HOURLY EMISSIONS RATES FOR TASCO TWIN FALLS

Source ID	Description	NO_x[a] (lb/hr)[b]	SO_2[c] (lb/hr)
PB1	Foster Wheeler Boiler	200.0	344.0
PB2	Babcock and Wilcox Boiler	22.0	474.0
PB3	Keeler Boiler	27.84	0.00
PULPD	Pulp Dryer	45.0	34.0

a. Nitrogen oxides.
b. Pounds per hour.
c. Sulfur dioxide.

3.0 Modeling Impact Assessment

3.1 Modeling Methodology

Table 6 provides a summary of the modeling parameters used in the submitted modeling analyses.

Table 6. MODELING PARAMETERS		
Parameter	**Description/ Values**	**Documentation/Additional Description**
Model	AERMOD	AERMOD, Version 12345. The Beta version of AERMOD for capped and horizontal releases for point sources was used to account for thermal buoyancy of exhaust plumes for these sources. NO_2 modeling was conducted using the Tier III Plume Volume Molar Ration Method.
Meteorological data	2006-2010	The AERMOD-ready five-year dataset that DEQ provided was based on Twin Falls Joslin Airport surface data and Boise airport upper air data. 1-minute ASOS data collected at Joslin Field was used for additional on-site data.
Terrain	Considered	3-dimensional receptor coordinates were obtained by CH2M HILL from United States Geological Survey (USGS) National Elevation Dataset (NED) files for the surrounding area.
Building downwash	Downwash algorithm	AERMOD, Version 12345 uses the PRIME algorithms to evaluate structure-induced downwash effects.
Receptor grid	Grid 1	25-meter spacing surrounding the facility property boundary.
	Grid 2	25-meter spacing along the Chobani café and employee parking lot access road and the canal right-of-way.
	Grid 3	25-meter spacing within the Chobani café area.
	Grid 4	25-meter spacing in a 200 meter (X) by 100 meter (Y) fine resolution hot spot grid along the ambient air boundary immediately north of the main facility building.
	Grid 5	50-meter spacing in a 2,000 meter (X) by 1,200 meter (Y) grid centered on the facility. This grid extends at least 200 meters from the ambient air boundary.
	Grid 6	100-meter spacing in a 3,600 meter (X) by 2,800 meter (Y) grid centered on Grid 5. This grid extends at least 1,000 meters from the ambient air boundary.
	Grid 7	500-meter spacing in a 12,000 meter (X) by 11,000 meter (Y) grid centered on Grid 6. This grid extends at least 4,800 meters from the ambient air boundary

3.1.1 Modeling Protocol

A modeling protocol was submitted to DEQ by CH2M HILL, on behalf of Chobani, on October 24, 2012. A modeling protocol approval letter, with comments, was issued by DEQ on November 1, 2012.

Modeling was conducted using methods documented in the modeling protocol and the *State of Idaho Guideline for Performing Air Quality Analyses*, Doc. ID AQ-011, revision 2, July 2011.

3.1.2 Model Selection

AERMOD, Version 12345, was used to conduct the ambient air analyses for NAAQS and TAPs compliance demonstrations. This is the appropriate regulatory guideline model for these analyses.

3.1.2.1 Non-Regulatory Default Modeling Options

Modeling conducted to demonstrate compliance with the 1-hour average NO_2 NAAQS used the Tier III Plume Volume Molar Ratio Method (PVMRM). This is not a regulatory default method. DEQ provided hourly ozone and hourly NO_2 background concentrations for this project with the modeling protocol approval letter. DEQ also recommended that Chobani's analysis use the default in-stack NO_2 to NO_x ratio of 0.5 for all sources of NO_x emissions, unless supporting documentation is provided in the application. Chobani's analyses used the default ratio, which is a conservative approach. An equilibrium ratio of 0.9 was used for the NO_2 model runs. Chobani demonstrated compliance with the NO_2 NAAQS without any refinement of the default in-stack NO_2 to NO_x ratio for any emissions units. This is a conservative approach.

DEQ requested that Chobani apply the Beta version of AERMOD if horizontal or capped stacks were part of this project. There are three rooftop-mounted air makeup units included in the model with horizontally-oriented release points.

3.1.3 Meteorological Data

DEQ provided a pre-processed met dataset based on Twin Falls Joslin Airport surface data and Boise airport upper air data. 1-minute ASOS data collected at Joslin Field was used for additional on-site data. The 5–year dataset covers the years 2006 through 2010. The met data is the same used for the initial PTC projects for Chobani and the City of Twin Falls permitting projects.

3.1.4 Terrain Effects

The modeling analyses considered elevated terrain. Chobani's modeling demonstration used a National Elevation Dataset (NED) file and AERMAP Version 11103 to determine receptor elevations and hill height scale values for inputs to the AERMOD dispersion model. Building and source base elevations were not determined using AERMAP. All building and source base elevations at the Chobani site were input as 1,162.0 meters (3,811.4 feet). PTF sources and structures used base elevations of approximately 1163 meters.

3.1.5 Facility Layout

The facility layout was depicted in the application's site plan. The site plan was used to verify the locations of the sources represented in the modeling setup. The locations of the emissions units and property boundary appeared to match between the site plan and the modeling setup.

3.1.6 Building Downwash

Plume downwash effects caused by structures at the facility were accounted for in the modeling analyses. The Building Profile Input Program-Plume Rise and Building Downwash Model (BPIP-PRIME) was used by the applicant to calculate direction-specific building dimensions and Good Engineering Practice (GEP) stack height information from building dimensions/configurations and emissions release parameters. The output from BPIP-PRIME was used as input to AERMOD, Version 12345, to account for building-induced downwash effects.

Buildings and other structures may cause plume downwash of nearby emissions points. Modeling guidance indicates that emissions points located within "5L" of a building, where "L" is the lesser dimension of building height or projected width, may be affected by downwash. The BPIP-PRIME building analysis included all buildings in the area that could reasonably be expected to cause plume downwash.

3.1.7 Ambient Air Boundary

Figure1 of the permit application contained the final facility site plan. The ambient air boundary was established using a combination of fencing and posting of no trespassing signs. Chobani will operate a café and storefront in the northwest corner of the property. The café and the production facility's primary parking lot will be accessed using a roadway located at Kimberly Road/Highway 30 to the north. The parking lot is intended for use by Chobani employees and other people accessing the Chobani facility conducting business with the facility (equipment vendors and maintenance staff, clients, etc.). The parking lot use restriction will be noted by a posted sign. Additional no trespassing signs will be placed at the northwest, northeast and eastern property boundary along Kimberly Road and 3300 East Road where fencing will not be placed.

Ambient air was assumed to exist along the canal bank in the northwest corner of the property. The Twin Falls Canal Company is provided an easement access to maintain the canal. Other areas that were treated

by Chobani as ambient air on their own property included the access road into the "Chobani Café, the café itself, and the portion of property in the extreme southwest corner bordering Hankins Road and the railway. The wastewater PTF will be located in the southwestern corner of the facility and will be surrounded by fencing and an access gate according to the facility plot plan.

The methods used to prevent public access within the ambient air boundary, meet the requirements specified in the *State of Idaho Guideline for Performing Air Quality Analyses*.

3.1.8 Receptor Network

The receptor grid used by Chobani met the minimum recommendations specified in the *State of Idaho Guideline for Performing Air Quality Analyses*. The receptor grid was adequate to resolve the maximum modeled ambient impacts.

3.2 Emission Rates

3.2.1 Modeled Emission Rates

Emissions rates used in the dispersion modeling analyses submitted by the applicant were reviewed against those in the permit application. The following approach was used for Chobani's modeling demonstration:

- All modeled criteria air pollutant and TAP emissions rates were equal to or greater than the facility's emissions calculated in the PTC application and the permit allowable emission rates listed in the proposed air quality permit.
- DEQ requested a nearby source analysis for The Amalgamated Sugar Company (TASCO) for SO_2 and NO_x emissions and the modeled emission rates for TASCO are listed above in Table 4.

Table 7 lists the hourly SO_2, $PM_{2.5}$, and NO_x emission rates that were modeled to evaluate whether ambient impacts demonstrate compliance with the applicable NAAQS. NO_x emission rates are total NO_x rather than NO_2. The emission rates listed in Table 7 were modeled continuously for 24 hours per day and 365 days per year except for Emergency Electrical Generators 1 and 2 (model IDs GEN1 and GEN2), which are each limited to 4 hours per day and 365 days per year to represent testing and maintenance operations. The hourly emission rates listed in Table 8 were modeled continuously for 8,760 hours per year.

Table 7. MODELED SHORT-TERM EMISSIONS RATES				
Source ID	**Description**	**SO_2[a], 1-hour average (lb/hr)[b]**	**$PM_{2.5}$[c] (lb/hr)**	**NO_x[d], 1-hour average (lb/hr)**
BOILER1	Boiler 1	0.02	0.33	2.32
BOILER2	Boiler 2	0.02	0.33	2.32
BOILER3	Boiler 3	0.02	0.33	2.32
BOILER4	Boiler 4	0.02	0.33	2.32
BOILER5	Boiler 5	0.02	0.33	2.32
BRMAU1	Boiler Room Makeup Air Unit	0.002	0.03	0.35
LABMAU	Lab Makeup Air Unit	0.0005	0.01	0.08
BATTMAU	Battery Makeup Air Unit	0.002	0.03	0.35
RTU1	Rooftop Heater 1	0.0003	0.0039	0.05
RTU2	Rooftop Heater 2	0.0003	0.0039	0.05
RTU3	Rooftop Heater 3	0.0003	0.0039	0.05
RTU4	Rooftop Heater 4	0.0003	0.0039	0.05
RTU5	Rooftop Heater 5	0.0003	0.0039	0.05
RTU6	Rooftop Heater 6	0.0003	0.0039	0.05
PLANT	Meeting/RR/Office Rooftop Heater	0.0002	0.0026	0.03
MAINT	Maintenance Rooftop Heat	0.0007	0.01	0.11
CT01	Cooling Tower Cell 1	NA[e]	0.031	NA[e]
CT02	Cooling Tower Cell 2	NA	0.031	NA
CT03	Cooling Tower Cell 3	NA	0.031	NA
CT04	Cooling Tower Cell 4	NA	0.031	NA
CT05	Cooling Tower Cell 5	NA	0.031	NA
CT06	Cooling Tower Cell 6	NA	0.031	NA
CT07	Cooling Tower Cell 7	NA	0.031	NA
CT08	Cooling Tower Cell 8	NA	0.031	NA
IR1	Infrared Heater Unit	0.00012	0.0015	0.02
IR2	Infrared Heater Unit	0.00012	0.0015	0.02
IR3	Infrared Heater Unit	0.00012	0.0015	0.02
IR4	Infrared Heater Unit	0.00012	0.0015	0.02
IR5	Infrared Heater Unit	0.00012	0.0015	0.02
IR6	Infrared Heater Unit	0.00012	0.0015	0.02
IR7	Infrared Heater Unit	0.00012	0.0015	0.02
IR8	Infrared Heater Unit	0.00012	0.0015	0.02
FLARE	Varec Open Flare	3.38	0.04	0.24
BOILER6	Calorix Dual Fuel Boiler	3.95	0.06	0.39
GEN1	175 kW Generator Engine	0.01	0.11	2.14
GEN2	350 kW Generator Engine	0.006	0.05	3.46

a. Sulfur dioxide.
b. Pounds per hour.
c. Particulate matter with a mean aerodynamic diameter of 2.5 microns or less, including condensables.
d. Nitrogen oxides.
e. NA—pollutant not emitted by this source.

Table 8. MODELED ANNUAL AVERAGE EMISSIONS RATES		
Source ID	**Description**	**SO_2[a] (lb/hr)[b]**
BOILER1	Boiler 1	0.02
BOILER2	Boiler 2	0.02
BOILER3	Boiler 3	0.02
BOILER4	Boiler 4	0.02
BOILER5	Boiler 5	0.02
BRMAU1	Boiler Room Makeup Air Unit	0.002
LABMAU	Lab Makeup Air Unit	0.0005
BATTMAU	Battery Makeup Air Unit	0.002
RTU1	Rooftop Heater 1	0.0003
RTU2	Rooftop Heater 2	0.0003
RTU3	Rooftop Heater 3	0.0003
RTU4	Rooftop Heater 4	0.0003
RTU5	Rooftop Heater 5	0.0003
RTU6	Rooftop Heater 6	0.0003
PLANT	Meeting/RR/Office Rooftop Heater	0.0002
MAINT	Maintenance Rooftop Heat	0.0007
CT01	Cooling Tower Cell 1	NA[e]
CT02	Cooling Tower Cell 2	NA
CT03	Cooling Tower Cell 3	NA
CT04	Cooling Tower Cell 4	NA
CT05	Cooling Tower Cell 5	NA
CT06	Cooling Tower Cell 6	NA
CT07	Cooling Tower Cell 7	NA
CT08	Cooling Tower Cell 8	NA
IR1	Infrared Heater Unit	0.00012
IR2	Infrared Heater Unit	0.00012
IR3	Infrared Heater Unit	0.00012
IR4	Infrared Heater Unit	0.00012
IR5	Infrared Heater Unit	0.00012
IR6	Infrared Heater Unit	0.00012
IR7	Infrared Heater Unit	0.00012
IR8	Infrared Heater Unit	0.00012
FLARE	Varec Open Flare	3.38
BOILER6	Calorix Dual Fuel Boiler	3.95
GEN1	175 kW Generator Engine	0.00011
GEN2	350 kW Generator Engine	0.000064

a. Sulfur dioxide.
b. Pounds per hour.

The carcinogenic TAP emission rates listed in Tables 9 and 10 were modeled to demonstrate compliance with the applicable acceptable ambient concentration (AACC) increments. The emission rates were modeled continuously for 8,760 hours per year without any additional restrictions on the emission rates or hours of operation. Emissions of all other TAPs were estimated to be below emissions screening levels (ELs) listed in Idaho Air Rules Sections 585 and 586, and air impact analyses were not required.

Table 9. MODELED CARCINOGENIC TOXIC AIR POLLUTANTS EMISSIONS RATES						
Source ID	**Description**	**Acetaldehyde (lb/hr)[a]**	**Benzene (lb/hr)**	**1,3-Butadiene (lb/hr)**	**POM[b]-7 PAH[c] (lb/hr)**	**PAH[c] (lb/hr)**
BOILER1	Boiler 1	--[d]	6.72E-05	--	3.7E-07	--
BOILER2	Boiler 2	--	6.72E-05	--	3.7E-07	--
BOILER3	Boiler 3	--	6.72E-05	--	3.7E-07	--
BOILER4	Boiler 4	--	6.72E-05	--	3.7E-07	--
BOILER5	Boiler 5	--	6.72E-05	--	3.7E-07	--
BRMAU1	Boiler Room Makeup Air Unit	--	7.39E-06	--	4.4E-08	--
LABMAU	Lab Makeup Air Unit	--	1.67E-06	--	1.0E-08	--
BATTMAU	Battery Makeup Air Unit	--	7.39E-06	--	4.4E-08	--
RTU1	Rooftop Heater 1	--	1.1E-06	--	6.5E-09	--
RTU2	Rooftop Heater 2	--	1.1E-06	--	6.5E-09	--
RTU3	Rooftop Heater 3	--	1.1E-06	--	6.5E-09	--
RTU4	Rooftop Heater 4	--	1.1E-06	--	6.5E-09	--
RTU5	Rooftop Heater 5	--	1.1E-06	--	6.5E-09	--
RTU6	Rooftop Heater 6	--	1.1E-06	--	6.5E-09	--
PLANT	Meeting/RR/Office Rooftop Heater	--	7.2E-07	--	4.3E-09	--
MAINT	Maintenance Rooftop Heat	--	7.2E-07	--	4.3E-09	--
IR1	Infrared Heater Unit	--	4.1E-07	--	2.5E-09	
IR2	Infrared Heater Unit	--	4.1E-07	--	2.5E-09	
IR3	Infrared Heater Unit	--	4.1E-07	--	2.5E-09	
IR4	Infrared Heater Unit	--	4.1E-07	--	2.5E-09	
IR5	Infrared Heater Unit	--	4.1E-07	--	2.5E-09	
IR6	Infrared Heater Unit	--	4.1E-07	--	2.5E-09	
IR7	Infrared Heater Unit	--	4.1E-07	--	2.5E-09	
IR8	Infrared Heater Unit	--	4.1E-07	--	2.5E-09	
FLARE	Varec Open Flare	--	9.38E-04	--	--	8.3E-05
BOILER6	Calorix Dual Fuel Boiler	--	3.42E-0	--	8.9E-08	2.4E-06
GEN1	175 kW Generator Engine	3.01E-03	3.66E-03	1.53E-04	--	1.4E-05
GEN2	350 kW Generator Engine	3.07E-03	3.74E-03	1.57E-04	--	1.4E-05

a. Pounds per hour.
b. Polycyclic organic matter.
c. Polyaromatic hydrocarbons.
d. -- double dash indicates pollutant not modeled for this emission unit.

Table 10. MODELED CARCINOGENIC TOXIC AIR POLLUTANTS EMISSIONS RATES (continued)						
Source ID	**Description**	**Formaldehyde (lb/hr)[a]**	**Naphthalene (carcinogenic) (lb/hr)**	**Arsenic (lb/hr)**	**Cadmium (lb/hr)**	**Nickel (lb/hr)**
BOILER1	Boiler 1	2.4E-03	2.0E-05	6.4E-06	3.5E-05	6.7E-05
BOILER2	Boiler 2	2.4E-03	2.0E-05	6.4E-06	3.5E-05	6.7E-05
BOILER3	Boiler 3	2.4E-03	2.0E-05	6.4E-06	3.5E-05	6.7E-05
BOILER4	Boiler 4	2.4E-03	2.0E-05	6.4E-06	3.5E-05	6.7E-05
BOILER5	Boiler 5	2.4E-03	2.0E-05	6.4E-06	3.5E-05	6.7E-05
BRMAU1	Boiler Room Makeup Air Unit	2.6E-04	2.2E-06	7.0E-07	3.9E-06	7.4E-06
LABMAU	Lab Makeup Air Unit	6.0E-05	4.8E-07	1.6E-07	8.7E-07	1.7E-06
BATTMAU	Battery Makeup Air Unit	2.6E-04	2.2E-06	7.0E-07	3.9E-06	7.4E-06
RTU1	Rooftop Heater 1	3.9E-05	3.1E-07	1.0E-07	5.7E-07	1.1E-06
RTU2	Rooftop Heater 2	3.9E-05	3.1E-07	1.0E-07	5.7E-07	1.1E-06
RTU3	Rooftop Heater 3	3.9E-05	3.1E-07	1.0E-07	5.7E-07	1.1E-06
RTU4	Rooftop Heater 4	3.9E-05	3.1E-7	1.0E-07	5.7E-07	1.1E-06
RTU5	Rooftop Heater 5	3.9E-05	3.1E-07	1.0E-07	5.7E-07	1.1E-06
RTU6	Rooftop Heater 6	3.9E-05	3.1E-07	1.0E-07	5.7E-07	1.1E-06
PLANT	Meeting/RR/Office Rooftop Heater	2.6E-05	2.1E-07	6.9E-08	3.8E-07	7.2E-07
MAINT	Maintenance Rooftop Heat	2.6E-05	2.1E-07	6.9E-08	2.2E-07	7.2E-07
IR1	Infrared Heater Unit	1.5E-05	1.2E-07	3.9E-08	2.2E-07	4.1E-07
IR2	Infrared Heater Unit	1.5E-05	1.2E-07	3.9E-08	2.2E-07	4.1E-07
IR3	Infrared Heater Unit	1.5E-05	1.2E-07	3.9E-08	2.2E-07	4.1E-07
IR4	Infrared Heater Unit	1.5E-05	1.2E-07	3.9E-08	2.2E-07	4.1E-07
IR5	Infrared Heater Unit	1.5E-05	1.2E-07	3.9E-08	2.2E-07	4.1E-07
IR6	Infrared Heater Unit	1.5E-05	1.2E-07	3.9E-08	2.2E-07	4.1E-07
IR7	Infrared Heater Unit	1.5E-05	1.2E-07	3.9E-08	2.2E-07	4.1E-07
IR8	Infrared Heater Unit	1.5E-05	1.2E-07	3.9E-08	2.2E-07	4.1E-07
FLARE	Varec Open Flare	6.9E-03	--[b]	--	--	--
BOILER6	Calorix Dual Fuel Boiler	5.9E-04	4.8E-06	1.6E-06	8.6E-06	1.6E-05
GEN1	175 kW Generator Engine	4.6E-03	1.9E-05	--	--	--
GEN2	350 kW Generator Engine	4.7E-03	1.9E-05	--	--	--

a. Pounds per hour
b. -- double dash indicates pollutant not modeled for this emission unit.

3. 3 Emission Release Parameters

3.3.1 Point Sources

Table 11 provides emissions release parameters, including stack height, stack diameter, exhaust temperature, and exhaust velocity for point sources.

Table 11. POINT SOURCE STACK PARAMETERS						
Release Point	Description	Stack Height (m)[a]	Stack Gas Flow Temperature (K)[b]	Stack Gas Flow Velocity (m/sec)[c]	Stack Diameter (m)	Release Orientation[d]
BOILER1	Boiler 1	15.85	472.0	18.86	0.61	Default
BOILER2	Boiler 2	15.85	472.0	18.86	0.61	Default
BOILER3	Boiler 3	15.85	472.0	18.86	0.61	Default
BOILER4	Boiler 4	15.85	472.0	18.86	0.61	Default
BOILER5	Boiler 5	15.85	472.0	18.86	0.61	Default
BRMAU1	Boiler Room Makeup Air Unit	14.63	313	15.24	1.27	Horizontal
LABMAU	Lab Makeup Air Unit	14.63	313	15.24	0.5	Horizontal
BATTMAU	Battery Makeup Air Unit	14.63	313	15.24	1.27	Horizontal
RTU1	Rooftop Heater 1	14.63	313	15.24	0.5	Default
RTU2	Rooftop Heater 2	14.63	313	15.24	0.5	Default
RTU3	Rooftop Heater 3	14.63	313	15.24	0.5	Default
RTU4	Rooftop Heater 4	14.63	313	15.24	0.5	Default
RTU5	Rooftop Heater 5	14.63	313	15.24	0.5	Default
RTU6	Rooftop Heater 6	14.63	313	15.24	0.5	Default
PLANT	Meeting/RR/Office Rooftop Heater	14.63	313	15.24	0.5	Default
MAINT	Maintenance Rooftop Heat	14.63	313	15.24	0.5	Default
CT01	Cooling Tower Cell 1	23.47	300	11.43	3.96	Default
CT02	Cooling Tower Cell 2	23.47	300	11.43	3.96	Default
CT03	Cooling Tower Cell 3	23.47	300	11.43	3.96	Default
CT04	Cooling Tower Cell 4	23.47	300	11.43	3.96	Default
CT05	Cooling Tower Cell 5	23.47	300	11.43	3.96	Default
CT06	Cooling Tower Cell 6	23.47	300	11.43	3.96	Default
CT07	Cooling Tower Cell 7	23.47	300	11.43	3.96	Default
CT08	Cooling Tower Cell 8	23.47	300	11.43	3.96	Default
FLARE	Varec Open Flare	6.60	1273.15	20.0	0.33	Default
BOILER6	Calorix Dual Fuel Boiler	9.0	323.3	11.74	0.36	Default
GEN1	175 kW Generator Engine	3.05	679	47.3	0.20	Default
GEN2	350 kW Generator Engine	3.05	689	121.6	0.20	Default

a. Meters
b. Kelvin
c. Meters per second
d. Default stack release orientation indicates a vertical stack with an uninterrupted release of exhaust stream to the atmosphere.

Chobani's application provided documentation on the emissions units associated with the wastewater pretreatment facility. All other exhaust parameters for the dairy processing plant portion of the facility were not substantiated in this permit application. The exhaust parameters for the dairy processing plant emissions units were identical to those used in the Chobani facility's initial PTC, issued on May 4, 2012.

Effective release height and effective diameter of the candlestick flare were calculated based on the 3.52 MMBtu/hr heat input from the potential quantity of biogas projected to be generated by the wastewater PTF. A Varec brand flare specification sheet was included in the application.

Manufacturer's specification sheets were included for the PTF Generators 1 and 2. Exhaust flow rates in actual cubic feet per minute and the exhaust temperatures were reduced by 15% to account for 5 feet in stack height extensions to the factor-supplied exhaust stacks.

The Calorix boiler (Boiler 6) exhaust flow rate was provided by a wastewater treatment consulting firm. Stack diameter and release height were accepted as being representative of the design Chobani will construct.

The following section concerns the exhaust parameters for the initial Chobani PTC project. Descriptions and justifications for these exhaust parameters are assumed to be valid for the current project. Chobani and CH2M HILL did not provide any additional documentation on these sources in this PTC modification application.

Cooling tower exhaust parameters were stated as being supplied by the engineering design firm Shambaugh and Sons this project. Exit temperature, release height, exit diameter, and exit velocity values for each of the eight cooling tower cells were listed in the supporting documentation and referenced to Design Job 170993, December 11, 2011. A summary listing of the cooling towers and all natural gas combustion units including the boilers, indirect-fired rooftop heating units, infrared heaters, and makeup air units was included in the permit application.

DEQ recommended that rooftop units be modeled as point sources in the modeling protocol approval letter. The Boiler Room, Lab, and Battery Air Makeup Units (modeling IDs BRMAU1, LABMAU, and BATTMAU) The emissions units were assumed to vent horizontally so any momentum buoyancy of the exhaust plume is disregarded. Thermal buoyancy of the plumes is accounted for with these sources.

The Boiler Room and Battery Air Makeup Units (modeling IDs BRMAU1 and BATTMAU) were each modeled at 3.6 million British thermal units per hour (MMBtu/hr) heat input in the facility's modeling demonstration. Documentation on the Rupp Air Management Systems website for gas-fueled, direct-fired makeup air heater units indicates that the Rupp Air RAM 225 may have a maximum rated heat input capacity of 8.0 MMBtu/hr heat input (BRMAU1) and the RAM 222 unit may be rated at 6.3 MMBtu/hr heat input (BATTMAU).

The documentation on the website also indicates that this source may not actually emit pollutants to the atmosphere from the unit itself, but instead air emissions would be exhausted from the conditioned space by one or more exhaust points at some other location on the building. Often the exhaust points will be rooftop- or sidewall-mounted fan units. This facility may pursue an expansion in the future. If modeling is required for a future project, the release parameters of these two emissions units should be re-examined and altered if appropriate. Considering the horizontal release orientation used in the modeling and the modeled locations of the air makeup units on the rooftop of the lower tier of the main plant building, the applicant's modeling demonstration should be reasonably conservative for this project.

All rooftop indirect- and directly-fired heat units and makeup air units were modeled with identical stack diameters, exit temperatures, and stack release heights (except the boiler room and battery makeup air units were modeled with a 1.27 meter equivalent diameter). DEQ requested that Chobani

model these sources as point sources and list the assumptions used in the modeling protocol approval letter. The application states that these release parameters are based on good engineering judgement.

Cleaver-Brooks boiler specification data was provided in the application. The five boilers are identical. The exit temperature, exit velocity, and volumetric flow rate of the exhaust were provided in the application. Based on this information the modeled exit diameter of 2 feet was supported. The modeled stack heights of the boilers were accepted as submitted, and at 52 feet above grade, the exit height is 7 feet above the roof height of the section of building where they are to be located.

DEQ accepted the modeled exit temperatures, stack release heights, and diameters as submitted.

3.3.2 Volume Sources

Chobani modeled the rooftop infrared heating units as elevated volume sources. The infrared heaters have horizontal vents that are 4 inches in diameter. The release parameter assumptions and calculations were listed in the Table 9 of the permit application and were accepted as submitted. The modeled parameters are listed in Table 12 of this memorandum.

Table 12. VOLUME SOURCE RELEASE PARAMETERS

Release Point	Description	Release Height (m[a])	Horizontal Dimension (m)	Vertical Dimension (m)
IR1	Infrared Heater Unit	8.53	0.024	3.97
IR2	Infrared Heater Unit	8.53	0.024	3.97
IR3	Infrared Heater Unit	8.53	0.024	3.97
IR4	Infrared Heater Unit	8.53	0.024	3.97
IR5	Infrared Heater Unit	8.53	0.024	3.97
IR6	Infrared Heater Unit	8.53	0.024	3.97
IR7	Infrared Heater Unit	8.53	0.024	3.97
IR8	Infrared Heater Unit	8.53	0.024	3.97

a. Meters

3.4 Results for Ambient Impact Analyses

3.4.1 Significant Impact Analyses

A significant impact analysis was performed for this project. Each of the four operating scenarios for the PTF's flare, Boiler 6, and Generators 1 and 2 was run as a unique case. The significant impact runs determined the ambient receptors used for the cumulative impact demonstrations. The maximum impacts from the four operating scenario runs are listed in Table 13.

Table 13. RESULTS FOR SIGNIFICANT IMPACT ANALYSES				
Pollutant	**Averaging Period**	**Maximum Modeled Concentration[a] ($\mu g/m^3$)[b]**	**SIL[c] ($\mu g/m^3$)**	**Cumulative Impact Analysis Required**
$PM_{2.5}$[d]	24-hour	7.10	1.2[g]	Yes
NO_2[e]	1-hour	175.2	7.5	Yes
SO_2[f]	1-hour	57.3	7.8	Yes
	Annual	11.7	1.0	Yes

a. Taken from the ambient air modeled receptor having the highest impact.
b. Micrograms per cubic meter.
c. Significant Impact Level.
d. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.
e. Nitrogen dioxide.
f. Sulfur dioxide.
g. Vacated and remanded as of January 22, 2013.

3.4.2 Cumulative Impact Analyses

Cumulative—or full—impact analyses were performed by Chobani by adding the facility's ambient impact design values that were predicted to occur as caused by the facility's potential emissions to the ambient background concentrations provided by DEQ.

The ambient impacts from TASCO were also included in the full impact analysis. The results submitted in Chobani's application are listed in Table 14. Each of the four operating scenarios for the Chobani facility alone demonstrated compliance with the applicable NAAQS for this project. A source contribution analysis using the "MAXDCONT" processing capability identified the maximum daily contribution of the Chobani facility's ambient impacts versus the TASCO facility's impacts in relation to space and time for the 1-hour NO_2 and 1-hour SO_2 NAAQS. Chobani's analysis demonstrated that the Chobani facility, including the PTF sources operating under each of the four individual operating scenarios, did not cause or contribute to a violation of either the 1-hour NO_2 or the 1-hour SO_2 NAAQS at any receptor where TASCO's impacts, with ambient background included, was predicted to exceed the NAAQS.

DEQ ran a verification analysis for the 1-hour NO_2 NAAQS using Chobani's modeling setup for Operating Scenario 2 (Boiler 6 and Generator 2 operational) and Operating Scenario 3 (Flare and Generator 1 operational). Only Chobani's emissions units were included in these runs. The ambient impact for each of the two runs for Source Group ALL, representing all Chobani sources and hourly variable ambient NO_2 backgrounds was 172.5 $\mu g/m^3$, 1-hour average. The total impact was based on the 8th highest maximum daily impact averaged over the full five years of met data. The reader should consider that the Chobani facility modeled alone has 1-hour NO_2 impacts that are approximately 91.5% of the NAAQS for these two scenarios using the modeled emission rates and operating assumptions presented in the facility's PTC modification application and modeling demonstration. This should be considered to be a refinement to the values listed below in Table 14 for Chobani combined with the highest 1-hour NO_2 ambient background value.

Chobani used the SIL run results for the 24-hour $PM_{2.5}$ NAAQS design concentrations. The maximum impact out of the five years of impacts was used for the four operating scenarios. This is a slightly more conservative approach than using the mean of the 1st high values for each of the five years of results.

Table 14. RESULTS OF FULL IMPACT ANALYSES							
Pollutant	**Averaging Period**	**Source Group**	**Modeled Design 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**
Operating Scenario 1							
$PM_{2.5}$[c]	24-hour	Chobani	7.10[g] (6.63)[h]	21.3	28.4 (27.9)	35	81%
SO_2[d]	1-hour	Chobani	146.1	33.1	179.2	196	91%
		TASCO	445.8		478.9		NA
		ALL[f]	445.8		478.9		244%
	Annual	Chobani	11.17	2.6	13.8	80	17%
NO_2[e]	1-hour	Chobani	99.2	24 hourly background values included in the model setup	<185.1[i]	188.6	<98%
		TASCO	354.5		354.5		NA
		ALL[f]	418.5		418.5		222%
Operating Scenario 2							
$PM_{2.5}$[c]	24-hour	Chobani	7.10[g] (6.63)[h]	21.3	28.4 (27.9)	35	81%
SO_2[d]	1-hour	Chobani	146.2	33.1	179.3	196	91%
		TASCO	445.8		478.9		NA
		ALL[f]	445.8		478.9		244%
	Annual	Chobani	11.17	2.6	13.8	80	17%
NO_2[e]	1-hour	Chobani	100.3	24 hourly background values included in the model setup	<186.2	188.6	<99%
		TASCO	354.5		NA		NA
		ALL[f]	418.5		418.5		222%
Operating Scenario 3							
$PM_{2.5}$[c]	24-hour	Chobani	7.10[g] (6.63)[h]	21.3	28.4 (27.9)	35	81%
SO_2[d]	1-hour	Chobani	127.0	33.1	160.1	196	82%
		TASCO	159.0		192.1		NA
		ALL[f]	159.0		192.1		NA
	Annual	Chobani	4.82	2.6	7.4	80	9%
NO_2[e]	1-hour	Chobani	99.4	24 hourly background values included in the model setup	<185.3	188.6	<98%
		TASCO	354.5		NA		NA
		ALL[f]	418.5		418.5		222%
Operating Scenario 4							
$PM_{2.5}$[c]	24-hour	Chobani	7.10[g] (6.63)[h]	21.3	28.4 (27.9)	35	81%
SO_2[d]	1-hour	Chobani	127.0	33.1	160.1	196	82%
		TASCO	159.0		192.1		NA
		ALL[f]	159.0		192.1		NA
	Annual	Chobani	4.82	2.6	7.4	80	9%
NO_2[e]	1-hour	Chobani	100.3	24 hourly background values included in the model setup	<186.2	188.6	<99%
		TASCO	354.5		NA		NA
		ALL[f]	418.5		418.5		222%

a. Micrograms per cubic meter.
b. National Ambient Air Quality Standards.
c. Particulate matter with a mean aerodynamic diameter of 2.5 microns or less. Includes condensables.
d. Sulfur dioxide.
e. Nitrogen dioxide.
f. AERMOD output files provide the average of 5 years of the maximum value of all highest 8th high 1-hour average impacts on a daily basis. The project's modeled impacts were generated using the Plume Volume Molar Ratio Method (PVMRM) for the Tier III refinement for NO_2 NAAQS compliance. Ambient background concentrations were added to the design concentration using the AERMOD algorithm for processing NO_2 impacts using a representative day with 24 hourly NO_2 background values. Impact includes the TASCO facility's ambient impacts with the Chobani facility's impacts and ambient background concentrations
g. Chobani's $PM_{2.5}$ design impact is the maximum of the individual year 1st high 24-hour ambient impacts. This is a conservative approach.
h. Design concentration is the mean value of the 1st high impacts from the 5 individual years of AERMOD runs.
i. This is an upper end value that is based on the 5-year mean 8th highest daily maximum impact plus the highest hourly NO_2 background value provided by DEQ. The NO_2 background was 85.9μg/m^3, 1-hour average, which occurs from 8 pm to 9 pm (see Table 3 of this memorandum). The electrical generators are assumed to operate between 9 am and 1 pm, so Chobani's impacts will be lower using reduced NO_2 background values.

Results of Chobani's maximum daily contribution (AERMOD's MAXDCONT output) analysis were listed in Table 4 of the permit application. Chobani's analysis showed that under the operating conditions modeled for the entire Chobani and PTF facility and the nearby source—TASCO—the ambient impacts caused by Chobani's sources at a receptor where a 1-hour NO_2 or 1-hour SO_2 exceedence was predicted to occur were negligible. The highest 1-hour NO_2 contribution from Chobani to an exceedence was predicted to be 0.27 μg/m^3, or 4% of the significant impact level of 7.5 μg/m^3. The highest 1-hour SO_2 contribution from Chobani to an exceedence was predicted to be 0.058 μg/m^3, or less than 1% of the significant impact level of 7.8 μg/m^3. DEQ agrees with Chobani's conclusions, and supporting documentation, that Chobani complies with the 1-hour NO_2 and SO_2 NAAQS.

3.4.3 Toxic Air Pollutant Impact Analyses

Dispersion modeling for TAPs was required to demonstrate compliance with TAP increments specified by Idaho Air Rules Section 586 for carcinogenic TAPs. This project is expected to cause emission increases that exceeded the screening emission rate limits for carcinogenic TAPs only. The requested emission increases were modeled to demonstrate compliance with the allowable TAP increments and the maximum annual average impact for any of the 5 years modeled was used to demonstrate compliance with the allowable increment. Results for the TAPs analyses are listed in Table 15. The predicted ambient TAPs impacts were well below allowable increments.

Table 15. RESULTS OF TAPs ANALYSES				
Toxic Air Pollutant	**CAS No.[a]**	**Maximum Modeled Concentration ($\mu g/m^3$)[b]**	**AACC[c] ($\mu g/m^3$)**	**Percent of AACC**
Acetaldehyde	75-07-0	2.5E-02	4.5E-01	5.6%
Benzene	71-43-2	3.1E-02	1.2E-01	25.8%
1, 3-Butadiene	106-99-0	1.3E-03	3.6E-03	36.1%
Formaldehyde	50-00-0	4.4E-02	7.7E-02	57.1%
Polycyclic Organic Matter (POM) – 7 PAH[d]	--	4.4E-06	3.0E-04[e]	1.5%
Polyaromatic hydrocarbons	--	1.9E-04	1.4E-02	1.4%
Naphthalene	--	2.5E-03	1.4E-02	17.9%
Arsenic	7440-38-2	3E-05	2.3E-04	13%
Cadmium	7440-43-9	1.8E-04	5.6E-04	32.1%
Nickel	7440-02-0	3.4E-04	4.2E-03	8.1%

a. Chemical Abstract Service Number.
b. Micrograms per cubic meter.
c. Acceptable ambient concentration for carcinogens.
d. Polyaromatic hydrocarbon.
e. Increment for benzo(a)pyrene.

4.0 Conclusions

The ambient air impact analysis submitted demonstrated to DEQ's satisfaction that emissions from the facility, as represented by the applicant in the permit application, will not cause or significantly contribute to a violation of any air quality standard.

APPENDIX C – FACILITY DRAFT COMMENTS

The facility had no comments on the facility draft permit on April 1, 2013.

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: Chobani Idaho, Inc.
Address: 3450 Kimberly Road East
City: Twin Falls
State: Idaho
Zip Code: 83301
Facility Contact: Valerie Waterland
Title: EHS Manager
AIRS No.: 083-00138

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	3.0	0	3.0
SO_2	32.1	0	32.1
CO	8.7	0	8.7
PM10	0.5	0	0.5
VOC	1.1	0	1.1
TAPS/HAPS	1.2	0	1.2
Total:	46.7	0	**46.7**
Fee Due	$ 5,000.00		

Comments: