



September 26, 2025

Julian Breckinridge
Kentucky Division for Air Quality
Minerals Section Supervisor
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601

RE: *Keystone Foods, LLC – Albany Processing*
Permit Renewal F-20-001; KY EIS: 21-053-00018

To Mr. Breckinridge:

The Keystone Foods, LLC, - Albany; a whole-owned subsidiary of Tyson Foods, Inc., poultry processing facility located in Albany, KY is renewing the existing Conditional Major Operating permit F-20-001. The existing air permit expires April 4, 2026; therefore, the renewal application must be submitted at least 6 months prior to expiration.

In review of the current air permit to the current process, Tyson has found two (2) additional small cleaner/sanitizer chemical tanks, 2500 and 660 gal, two (2) PAA solution tanks; 5,000 and 550 gal, and five (5) updated and/additional diesel tanks; 1 x 12,000-gal, 1 x 10,000-gal, 1 x 5,000-gal, 1 x 1,500-gal, 1 x 174-gal that should be added to the insignificant activities list.

In addition, the emissions for PAA intervention are being updated and moved from the insignificant activity to a permitted emission source, Source 23, so the facility may increase annual gallons of PAA solution for microbial intervention.

Emissions from Source 22A/B live hang have been updated to include the emission factor developed at a similar facility using a CAS system, thus allowing the source to be moved to the insignificant activities list.

Tyson requests the opportunity to review pre-draft permits prior to the issuance of final permits.

If you have any questions or comments about the information presented in this letter, please do not hesitate to call Mr. Jason York at (606) 387-2226; jason.york@tyson.com, Rechelle Hollowaty at (479) 290-2506 or myself at (479) 290-4607, Tracy.Reese@tyson.com.

Sincerely,

A handwritten signature in black ink that reads "Tracy Reese".

Tracy Reese
Complex Manager

Attachments

Cc: Ms. Rechelle Hollowaty, Tyson Foods, Inc.
Mr. Jason York, Tyson Foods, Inc.

Division for Air Quality

300 Sower Boulevard
Frankfort, KY 40601
(502) 564-3999

DEP7007AI

Administrative Information

- Section AI.1: Source Information
- Section AI.2: Applicant Information
- Section AI.3: Owner Information
- Section AI.4: Type of Application
- Section AI.5: Other Required Information
- Section AI.6: Signature Block
- Section AI.7: Notes, Comments, and Explanations

Additional Documentation

Additional Documentation attached

Source Name: Keystone Foods, LLC - Albany Processing

KY EIS (AFS) #: 21- 053-00018

Permit #: F-20-001

Agency Interest (AI) ID: 856

Date: September 22, 2025

Section AI.1: Source Information

Physical Location Street: 2294 Highway 90W

Address: City: Albany County: Clinton Zip Code: 42602

Mailing Address: Street or P.O. Box: 2292 Highway 90W

City: Albany State: KY Zip Code: 42602

Standard Coordinates for Source Physical Location

Longitude: 36.758655 (decimal degrees) Latitude: -85.179577 (decimal degrees)

Primary (NAICS) Category: Poultry Processing Primary NAICS #: 311615

Classification (SIC) Category: Poultry Processing and Slaughter Primary SIC #: 2015

Briefly discuss the type of business conducted at this site:

Poultry Processing and Slaughter

Description of Area Surrounding Source: Rural Area Industrial Park Residential Area Urban Area Industrial Area Commercial Area

Is any part of the source located on federal land? Yes No

Number of Employees: ~1500

Approximate distance to nearest residence or commercial property: 600-700 ft Property Area: 611 acres Is this source portable? Yes No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES: Currently Hold Need N/A

Solid Waste: Currently Hold Need N/A

RCRA: Currently Hold Need N/A

UST: Currently Hold Need N/A

Type of Regulated Waste Activity: Mixed Waste Generator Generator Recycler Other: _____

U.S. Importer of Hazardous Waste Transporter Treatment/Storage/Disposal Facility N/A

Section AI.2: Applicant Information

Applicant Name: Keystone Foods, LLC

Title: (if individual) _____

Mailing Address: **Street or P.O. Box:** _____

City: Albany **State:** KY **Zip Code:** 42602

Email: (if individual) _____

Phone: _____

Technical Contact

Name: Rechelle Hollowaty

Title: Sr. Environmental Manager

Mailing Address: **Street or P.O. Box:** 7136 Harrison Hill Trail

City: Chanhassen **State:** MN **Zip Code:** 55317

Email: Rechelle.Hollowaty@tyson.com

Phone: 479-290-2506

Air Permit Contact for Source

Name: Jason York

Title: Complex Environmental Manager

Mailing Address: **Street or P.O. Box:** 2294 Highway 90W

City: Albany **State:** KY **Zip Code:** 42602

Email: jason.york@tyson.com

Phone: 606-387-2226

Section AI.3: Owner Information

Owner same as applicant

Name: _____

Title: _____

Mailing Address: **Street or P.O. Box:** _____

City: _____ **State:** _____ **Zip Code:** _____

Email: _____

Phone: _____

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
<u>Grow-Out Holdings LLC</u>	<u>100%</u>
_____	_____
_____	_____

Section AI.4: Type of Application

Current Status: Title V Conditional Major State-Origin General Permit Registration None

Requested Action: (check all that apply)

Name Change Initial Registration Significant Revision Administrative Permit Amendment

Renewal Permit Revised Registration Minor Revision Initial Source-wide Operating Permit

502(b)(10)Change Extension Request Addition of New Facility Portable Plant Relocation Notice

Revision Off Permit Change Landfill Alternate Compliance Submittal Modification of Existing Facilities

Ownership Change Closure

Requested Status: Title V Conditional Major State-Origin PSD NSR Other: _____

Is the source requesting a limitation of potential emissions? Yes No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
<input type="checkbox"/> Particulate Matter	_____	<input type="checkbox"/> Single HAP	_____
<input checked="" type="checkbox"/> Volatile Organic Compounds (VOC)	less than 100 tpy	<input type="checkbox"/> Combined HAPs	_____
<input type="checkbox"/> Carbon Monoxide	_____	<input type="checkbox"/> Air Toxics (40 CFR 68, Subpart F)	_____
<input type="checkbox"/> Nitrogen Oxides	_____	<input type="checkbox"/> Carbon Dioxide	_____
<input type="checkbox"/> Sulfur Dioxide	_____	<input type="checkbox"/> Greenhouse Gases (GHG)	_____
<input type="checkbox"/> Lead	_____	<input type="checkbox"/> Other	_____

For New Construction:

Proposed Start Date of Construction: (MM/YYYY) _____

Proposed Operation Start-Up Date: (MM/YYYY) _____

For Modifications:

Proposed Start Date of Modification: (MM/YYYY) _____ 2026

Proposed Operation Start-Up Date: (MM/YYYY) _____ 2026

Applicant is seeking coverage under a permit shield. Yes No

Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.

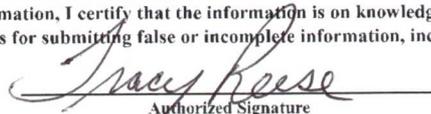
Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

<input type="checkbox"/> DEP7007A Indirect Heat Exchangers and Turbines	<input type="checkbox"/> DEP7007CC Compliance Certification
<input checked="" type="checkbox"/> DEP7007B Manufacturing or Processing Operations	<input checked="" type="checkbox"/> DEP7007DD Insignificant Activities
<input type="checkbox"/> DEP7007C Incinerators and Waste Burners	<input type="checkbox"/> DEP7007EE Internal Combustion Engines
<input type="checkbox"/> DEP7007F Episode Standby Plan	<input type="checkbox"/> DEP7007FF Secondary Aluminum Processing
<input type="checkbox"/> DEP7007J Volatile Liquid Storage	<input type="checkbox"/> DEP7007GG Control Equipment
<input type="checkbox"/> DEP7007K Surface Coating or Printing Operations	<input type="checkbox"/> DEP7007HH Haul Roads
<input type="checkbox"/> DEP7007L Mineral Processes	<input type="checkbox"/> Confidentiality Claim
<input type="checkbox"/> DEP7007M Metal Cleaning Degreasers	<input type="checkbox"/> Ownership Change Form
<input checked="" type="checkbox"/> DEP7007N Source Emissions Profile	<input type="checkbox"/> Secretary of State Certificate
<input type="checkbox"/> DEP7007P Perchloroethylene Dry Cleaning Systems	<input type="checkbox"/> Flowcharts or diagrams depicting process
<input type="checkbox"/> DEP7007R Emission Offset Credit	<input type="checkbox"/> Digital Line Graphs (DLG) files of buildings, roads, etc.
<input type="checkbox"/> DEP7007S Service Stations	<input type="checkbox"/> Site Map
<input type="checkbox"/> DEP7007T Metal Plating and Surface Treatment Operations	<input type="checkbox"/> Map or drawing depicting location of facility
<input checked="" type="checkbox"/> DEP7007V Applicable Requirements and Compliance Activities	<input type="checkbox"/> Safety Data Sheet (SDS)
<input type="checkbox"/> DEP7007Y Good Engineering Practice and Stack Height Determination	<input type="checkbox"/> Emergency Response Plan
<input type="checkbox"/> DEP7007AA Compliance Schedule for Non-complying Emission Units	<input type="checkbox"/> Other: _____
<input type="checkbox"/> DEP7007BB Certified Progress Report	

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.



 Authorized Signature

9/26/25

 Date

Tracy Reese

 Type or Printed Name of Signatory

Complex Manager

 Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

Section B.2: Materials and Fuel Information

**Maximum yearly fuel usage rate only applies if applicant request operating restrictions through federally enforceable limitations.*

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit (tons/hr)	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content (%)	Ash Content (%)
				(Specify Units/hr)				(Specify Units/hr)			(Specify Units)		(Specify Units)		
EU-23	PAA Intervention	PAA	142.79	gals/hr	na	PAA	142.79	gals/hr	NA	NA	NA	NA	NA	NA	NA

Emission Unit #	Emission Unit Name	Name of Raw Materials Input	Maximum Quantity of Each Raw Material Input		Total Process Weight Rate for Emission Unit <i>(tons/hr)</i>	Name of Finished Materials	Maximum Quantity of Each Finished Material Output		Fuel Type	Maximum Hourly Fuel Usage Rate		Maximum Yearly Fuel Usage Rate		Sulfur Content <i>(%)</i>	Ash Content <i>(%)</i>
				<i>(Specify Units/hr)</i>				<i>(Specify Units/hr)</i>			<i>(Specify Units)</i>		<i>(Specify Units)</i>		

Division for Air Quality

300 Sower Boulevard
 Frankfort, KY 40601
 (502) 564-3999

DEP7007N

Source Emissions Profile

- Section N.1: Emission Summary
- Section N.2: Stack Information
- Section N.3: Fugitive Information
- Section N.4: Notes, Comments, and Explanations

Additional Documentation

Complete DEP7007AI

Source Name: Keystone Foods, LLC - Albany Processing

KY EIS (AFS) #: 21- 053-00018

Permit #: F-20-001

Agency Interest (AI) ID: 856

Date: September 22, 2025

N.1: Emission Summary

Emission Unit #	Emission Unit Name	Process ID	Process Name	Control Device Name	Control Device ID	Stack ID	Maximum Design Capacity (SCC Units/hour)	Pollutant	Uncontrolled Emission Factor (lb/SCC Units)	Emission Factor Source (e.g. AP-42, Stack Test, Mass Balance)	Capture Efficiency (%)	Control Efficiency (%)	Hourly Emissions		Annual Emissions	
													Uncontrolled Potential (lb/hr)	Controlled Potential (lb/hr)	Uncontrolled Potential (tons/yr)	Controlled Potential (tons/yr)
EU-23	PAA Intervention	EP-23	PAA Intervention	Room Enclosure	NA	Room Air	142.79	VOC	0.080	Test	Fugitive	Fugitive	11.42	na	23.76	na

Section N.2: Stack Information

UTM Zone:

Stack ID	Identify all Emission Units (with Process ID) and Control Devices that Feed to Stack	Stack Physical Data			Stack UTM Coordinates		Stack Gas Stream Data		
		Equivalent Diameter <i>(ft)</i>	Height <i>(ft)</i>	Base Elevation <i>(ft)</i>	Northing <i>(m)</i>	Easting <i>(m)</i>	Flowrate <i>(acfm)</i>	Temperature <i>(°F)</i>	Exit Velocity <i>(ft/sec)</i>
NA	PAA emissions exhaust to room air	NA	NA	NA	NA	NA	NA	NA	NA

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007V Applicable Requirements and Compliance Activities ___ Section V.1: Emission and Operating Limitation(s) ___ Section V.2: Monitoring Requirements ___ Section V.3: Recordkeeping Requirements ___ Section V.4: Reporting Requirements ___ Section V.5: Testing Requirements ___ Section V.6: Notes, Comments, and Explanations	Additional Documentation ___ Complete DEP7007AI					
Source Name: <u>Keystone Foods, LLC - Albany Processing</u>							
KY EIS (AFS) #: <u>21- 053-00018</u>							
Permit #: <u>F-20-001</u>							
Agency Interest (AI) ID: <u>856</u>							
Date: <u>22-Sep-25</u>							
Section V.1: Emission and Operating Limitation(s)							
Emission Unit #	Emission Unit Description	Applicable Regulation or Requirement	Pollutant	Emission Limit (if applicable)	Voluntary Emission Limit or Exemption (if applicable)	Operating Requirement or Limitation (if applicable)	Method of Determining Compliance with the Emission and Operating Requirement(s)
EP-23	PAA Intervention	401 KAR 52:030, Section 1; Section 11	VOC	<100 tpy	<100 tpy Voluntary	NA	Record PAA Monthly usage, and 12 mo rolling total

Section V.2: Monitoring Requirements					
Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Monitored	Description of Monitoring
EP-23	PAA Intervention	VOC	401 KAR 52:030, Section 1; Section 11	NA	NA

Section V.3: Recordkeeping Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Recorded	Description of Recordkeeping
EP-23	PAA Intervention	VOC	401 KAR 52:030, Section 1; Section 11	PAA Usage and VOC emissions	Facility will monitor PAA Usage Monthly and 12 mo rolling total; Calculate VOC emissions based on PAA usage and Emission factor developed for lbs VOC emitted/gal of PAA used

Section V.4: Reporting Requirements

Emission Unit #	Emission Unit Description	Pollutant	Applicable Regulation or Requirement	Parameter Reported	Description of Reporting
EP-23	PAA Intervention	VOC	401 KAR 52:030, Section 1; Section 11	VOC	Facility will monitor PAA Usage Monthly and 12 mo rolling total; Calculate VOC emissions based on PAA usage and Emission factor developed for lbs VOC emitted/gal of PAA used

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007DD Insignificant Activities ___ Section DD.1: Table of Insignificant Activities ___ Section DD.2: Signature Block ___ Section DD.3: Notes, Comments, and Explanations
Source Name:	<u>Equity Group- Kentucky Division LLC</u>
KY EIS (AFS) #:	21- <u>053-00018</u>
Permit #:	<u>F-15-010 R1</u>
Agency Interest (AI) ID:	<u>859</u>
Date:	<u>9/22/2025</u>

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
1	Cleaning and Sanitizing Chemical Usage Fugitive emissions (updated)	na	na	2.69 ton VOC/year as highest emitting criteria pollutant of non-process fugitive
2	Cooling Condensers (updated)	na	na	0.32 ton PM10/year as highest emitting criteria pollutant
3	Live Hang w/ CAS System (updated)	22A/B	na	0.14 ton PM10/year as highest emitting criteria pollutant
4	Bulk PAA Tanks (5000 and 550 gallon tanks)	na	na	0.43 ton PM10/year as highest emitting criteria pollutant
5	Cleaner/Sanitizer Tanks (2500 and 660 gallon tanks)	na	na	<0.1 ton PM10/year as highest emitting criteria pollutant
6	Boiler Fuel Tank (1,500 gal)	na	na	0.0002 ton PM10/year as highest emitting criteria pollutant
7	Diesel Tank 1 (10,000 gal)	na	na	0.01 ton PM10/year as highest emitting criteria pollutant
8	Diesel Tank 2 (12,000 gal)	na	na	0.01 ton PM10/year as highest emitting criteria pollutant
9	Diesel Tank 3 (5,000 gal)	na	na	0.0007 ton PM10/year as highest emitting criteria pollutant
10	Fire Pump Tank (174 gal)	na	na	0.0001 ton PM10/year as highest emitting criteria pollutant

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

By: <u>Tracy Reese</u> Authorized Signature <u>Tracy Reese</u> Type/Print Name of Signatory	<u>9/26/25</u> Date _____ Complex Manager _____ Title of Signatory
--	---

Summary of Potential to Emit Emissions
Equity Group - Kentucky Division LLC
Albany, Kentucky
Updated 9/23/25

Source	EU	NOx lbs/hr	CO lbs/hr	PM lbs/hr	PM10 lbs/hr	PM2.5 lbs/hr	SOx lbs/hr	VOC lbs/hr	Lead lbs/hr	CO2e lbs/hr	HAP lbs/hr	NOx tpy	CO tpy	PM tpy	PM10 tpy	PM2.5 tpy	SOx tpy	VOC tpy	Lead tpy	CO2e tpy	HAP tpy
Kewanee Boiler #3	EU24	2.37	1.40	0.13	0.13	0.13	0.27	0.15	8.35E-06	2,331	0.03	10.39	6.14	0.56	0.56	0.56	1.20	0.64	3.66E-05	10,211	0.14
Victory Boiler #4	EU25	2.99	1.76	0.49	0.16	0.16	0.34	0.18	1.05E-05	3,348	0.04	13.09	7.70	2.16	0.70	0.70	1.50	0.80	4.58E-05	14,664	0.17
Kemco Water Heater #3	EU26	1.50	1.26	0.11	0.11	0.11	0.25	0.13	7.50E-06	2,094	0.03	9.33	5.52	0.50	0.50	0.50	1.08	0.57	3.29E-05	9,171	0.12
Kemco Water Heater #4	EU27	2.13	1.26	0.11	0.11	0.11	0.25	0.13	7.50E-06	2,094	0.03	9.33	5.52	0.50	0.50	0.50	1.08	0.57	3.29E-05	9,171	0.12
Flare	EU08	1.80	1.51	0.14	0.14	0.14	0.10	0.10	0.00E+00	2,108	0.00	7.88	6.62	0.60	0.60	0.60	0.43	0.43	0.00E+00	9,232	0.00
Misc Small Heaters	--	7.79	4.60	0.42	0.42	0.42	0.90	0.48	2.74E-05	7,651	0.10	34.11	20.16	1.84	1.84	1.84	3.94	2.10	1.20E-04	33,511	0.45
Fire Pump	EU07	3.63	0.78	0.26	0.26	0.26	0.24	0.29	0.00E+00	135	0.01	0.91	0.20	0.06	0.06	0.06	0.06	0.07	0.00E+00	34	1.32E-03
Truck Unloading	EU09	-	-	1.81	0.62	0.10	-	-	-	-	-	-	-	7.91	2.71	0.43	-	-	-	-	-
Auger Conveyor to Silo	EU10	-	-	0.70	0.39	0.07	-	-	-	-	-	-	-	3.05	1.70	0.29	-	-	-	-	-
Silo Transfer Conveyor	EU11	-	-	0.70	0.39	0.07	-	-	-	-	-	-	-	3.05	1.70	0.29	-	-	-	-	-
Silo #1	EU12	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Silo #2	EU13	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Silo #3	EU14	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Silo #4	EU15	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Auger Conveyor from Silo #1	EU16	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Auger Conveyor from Silo #2	EU17	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Auger Conveyor from Silo #3	EU18	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Auger Conveyor from Silo #4	EU19	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Truck Loadout	EU20	-	-	0.98	0.33	0.06	-	-	-	-	-	-	-	4.30	1.45	0.25	-	-	-	-	-
Live Hang	EU22A/B	-	-	0.03	0.03	0.03	-	-	-	-	-	-	-	0.14	0.14	0.14	-	-	-	-	-
Total of Diesel Fuel Tanks	INS	-	-	-	-	-	-	2.80E-03	-	-	-	-	-	-	-	-	-	1.23E-02	-	-	-
PAA	Fug	-	-	-	-	-	-	5.42	-	-	-	-	-	-	-	-	-	-	23.76	-	-
Bulk PAA Tanks	INS	-	-	-	-	-	-	0.10	-	-	-	-	-	-	-	-	-	-	0.43	-	-
Cleaners and Sanitizers	Fug	-	-	-	-	-	-	1.54	-	-	0.57	-	-	-	-	-	-	-	6.73	-	2.50
Cooling Towers	INS	-	-	0.07	0.07	0.07	-	-	-	-	-	-	-	0.32	0.32	0.32	-	-	-	-	-
Total		22.21	12.58	6.52	3.62	1.80	2.35	8.52	0.00	19,760.10	0.81	85.05	51.86	27.49	14.79	6.82	9.28	36.13	0.00	85,993.54	3.51
Haul Roads	Fugitive			8.90E-02	4.53E-03	2.10E-03								0.39	0.02	0.01					
Total with Haul Road		22.21	12.58	6.61	3.62	1.80	2.35	8.52	0.00	19,760.10	0.81	85.05	51.86	27.88	14.81	6.83	9.28	36.13	0.00	85,993.54	3.51

Source	Emission Source ID	Heat Input Capacity (MMBtu/hr)	Annual Hours of Operation (hr/yr)	Natural Gas Heating Value (Btu/scf)	Hourly Natural Gas Consumption (MMscf/hr)	Propane Heating Value (Btu/gal)	Hourly Propane Consumption (Mgal/hr)	Fuel Oil Heating Value (Btu/gal)	Hourly Fuel Oil Consumption (Mgal/hr)	Biogas Heating Value (Btu/gal)	Hourly Biogas Consumption (MMscf/hr)
Kewanee Boiler #3	EU24	16.70	8,760	1,000	1.67E-02	91,500	0.18	na	na	750	2.23E-02
Victory Boiler #4	EU25	20.93	8,760	1,000	2.09E-02	91,500	0.23	140,000	0.15	750	2.79E-02
Kemco Water Heater #3	EU26	15.00	8,760	1,000	1.50E-02	91,500	0.16	na	na	na	na
Kemco Water Heater #4	EU27	15.00	8,760	1,000	1.50E-02	91,500	0.16	na	na	na	na
Flare	EU08	18.00	8,760	na	na	na	na	na	na	750	2.40E-02
Misc Small Heaters (combined)	Insign	54.81	8,760	1,000	5.48E-02	91,500	0.60	na	na	na	na

Emissions Factors

Pollutant	Secondary	Primary	Tertiary	Tertiary Biogas ⁷ before control (lb/MMscf)	Tertiary Biogas ⁷ after control (lb/MMscf)
	Natural Gas ¹ (lb/MMscf)	Propane ² (lb/Mgal)	Fuel Oil ³ (lb/Mgal)		
NO _x	100	13	20	75	75
CO	84	7.5	5	63	63
PM	7.6	0.70	3.30	5.7	5.7
PM ₁₀	7.6	0.70	1.00	5.7	5.7
PM _{2.5}	7.6	0.70	0.25	5.7	5.7
SO ₂ ⁴	0.6	1.50	0.21	6.16	0.8
VOC	5.5	0.8	0.2	4.125	4.125
Lead	5.00E-04				
CO ₂ ⁶	117,098	12,773	22,399	87,824	87,824

- AP-42 Section 1.4, Natural Gas Combustion, Tables 1.4-1 and 1.4-2, dated July 1998.
- AP-42 Section 1.5 Liquefied Petroleum Gas Combustion, Tables 1.5-1 and 1.5-2 dated July 2008, Sulfur is assumed 15 ppm
- AP-42 Section 1.3 Fuel Oil Combustion, Tables 1.3-1 and 1.3-2 dated May 2010
- Natural Gas AP-42 1.4 emission factors was used for Biogas @ 75% natural gas values; Biogas is 75% methane and 25% CO₂.
- Potential annual emissions are based on the hourly potential emissions multiplied by 8,760 hours of operation per year.
- CO₂e factor calculated based on the emission factors for CO₂, CH₄, and N₂O from 40 CFR 98, Subpart C, Tables C-1 and C-2, and the global warming potential (GWP) for each pollutant per 40 CFR 98, Subpart A, Table A-1.
- See discussion below regarding SO_x emission factor modification to include H2S in Biogas

Criteria Pollutant Potential Emissions from the Kewanee Boiler

Pollutant	Kewanee Natural Gas		Kewanee Propane		Kewanee Biogas		Kewanee Boiler	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	Biogas (lb/hr)	Annual (tpy)	(lb/hr) PTE	(tpy)
NO _x	1.67	7.31	2.37	10.39	1.67	7.31	2.37	10.39
CO	1.40	6.14	1.37	6.00	1.40	6.14	1.40	6.14
PM	0.13	0.56	0.13	0.56	0.13	0.56	0.13	0.56
PM ₁₀	0.13	0.56	0.13	0.56	0.13	0.56	0.13	0.56
PM _{2.5}	0.13	0.56	0.13	0.56	0.13	0.56	0.13	0.56
SO ₂	0.01	0.04	0.27	1.20	0.02	0.08	0.27	1.20
VOC	0.09	0.40	0.15	0.64	0.09	0.40	0.15	0.64
Lead	8.35E-06	3.66E-05	-	-	-	-	8.35E-06	3.66E-05
CO ₂ e	1,955.54	8,565.25	2,331.25	10,210.86	1,955.54	8,565.25	2,331.25	10,210.86

Criteria Pollutant Potential Emissions from the Victory Boiler

Pollutant	Victory Natural Gas		Victory Propane		Victory Fuel Oil		Victory Biogas		Victory Boiler	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	Fuel Oil (lb/hr)	Annual (tpy)	Biogas (lb/hr)	Annual (tpy)	(lb/hr) PTE	(tpy)
NO _x	2.09	9.17	2.97	13.02	2.99	13.09	2.09	9.17	2.99	13.09
CO	1.76	7.70	1.72	7.51	1.75	3.27	1.76	7.70	1.76	7.70
PM	0.16	0.70	0.16	0.70	0.49	2.16	0.16	0.70	0.49	2.16
PM ₁₀	0.16	0.70	0.16	0.70	0.15	0.65	0.16	0.70	0.16	0.70
PM _{2.5}	0.16	0.70	0.16	0.70	0.04	0.16	0.16	0.70	0.16	0.70
SO ₂	0.01	0.05	0.34	1.50	0.03	0.14	0.02	0.10	0.34	1.50
VOC	0.12	0.50	0.18	0.80	0.03	0.13	0.12	0.50	0.18	0.80
Lead	1.05E-05	4.58E-05	-	-	-	-	-	-	1.05E-05	4.58E-05
CO ₂ e	2,450.28	10,732.21	2,921.04	12,794.15	3,347.85	14,663.59	2,450.28	10,732.21	3,347.85	14,663.59

Criteria Pollutant Potential Emissions from the Kemco Water Heater #3 (New)

Pollutant	Kemco Natural Gas		Kemco Propane		Kemco Water Heater #3	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	(lb/hr)	PTE (tpy)
NO _x	1.50	6.57	2.13	9.33	2.13	9.33
CO	1.26	5.52	1.23	5.39	1.26	5.52
PM	0.11	0.50	0.11	0.50	0.11	0.50
PM ₁₀	0.11	0.50	0.11	0.50	0.11	0.50
PM _{2.5}	0.11	0.50	0.11	0.50	0.11	0.50
SO ₂	0.01	0.04	0.25	1.08	0.25	1.08
VOC	0.08	0.36	0.13	0.57	0.13	0.57
Lead	7.50E-06	3.29E-05	-	-	7.50E-06	3.29E-05
CO ₂ e	1,756.47	7,693.34	2,093.93	9,171.43	2,093.93	9,171.43

Criteria Pollutant Potential Emissions from the Kemco Water Heater #4 (New)

Pollutant	Kemco Natural Gas		Kemco Propane		Kemco Water Heater #4	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	(lb/hr)	PTE (tpy)
NO _x	1.50	6.57	2.13	9.33	2.13	9.33
CO	1.26	5.52	1.23	5.39	1.26	5.52
PM	0.11	0.50	0.11	0.50	0.11	0.50
PM ₁₀	0.11	0.50	0.11	0.50	0.11	0.50
PM _{2.5}	0.11	0.50	0.11	0.50	0.11	0.50
SO ₂	0.01	0.04	0.25	1.08	0.25	1.08
VOC	0.08	0.36	0.13	0.57	0.13	0.57
Lead	7.50E-06	3.29E-05	-	-	7.50E-06	3.29E-05
CO ₂ e	1,756.47	7,693.34	2,093.93	9,171.43	2,093.93	9,171.43

Criteria Pollutant Potential Emissions from the Flare

Pollutant	Flare Biogas	
	Natural Gas (lb/hr)	Annual (tpy)
NO _x	1.80	7.88
CO	1.51	6.62
PM	0.14	0.60
PM ₁₀	0.14	0.60
PM _{2.5}	0.14	0.60
SO ₂	0.10	0.43
VOC	0.10	0.43
Lead	-	-
CO ₂ e	2,107.76	9,232.01

NOTE 1 - Flare is rated at 24,000 cubic feet of digester gas per hour and per testing the digester gas averages 750 BTU per cubic foot with the remainder of the gas CO2 or Nitrogen.

Criteria Pollutant Potential Emissions from the Misc Small Heaters

Pollutant	Misc Small Heaters		Misc Small Heaters		Misc Small Heaters	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	(lb/hr)	PTE (tpy)
NO _x	5.48	24.01	7.79	34.11	7.79	34.11
CO	4.60	20.16	4.49	19.68	4.60	20.16
PM	0.42	1.82	0.42	1.84	0.42	1.84
PM ₁₀	0.42	1.82	0.42	1.84	0.42	1.84
PM _{2.5}	0.42	1.82	0.42	1.84	0.42	1.84
SO ₂	0.03	0.14	0.90	3.94	0.90	3.94
VOC	0.30	1.32	0.48	2.10	0.48	2.10
Lead	2.74E-05	1.20E-04	-	-	2.74E-05	1.20E-04
CO ₂ e	6,417.79	28,109.92	7,650.82	33,510.58	7,650.82	33,510.58

SO_x Emission Factor Calculation to include H₂S combustion

Emission factor for SO_x for Biogas is derived from 2 sources; the combustion of the methane/CO₂ as well as the combustion of H₂S that is in the biogas.

0.45 lbs/mmscf is assumed due to the fact that the biogas has 75% heat capacity of natural gas therefore, 75% of the emission factor for natural gas is assumed for biogas; 0.6 lbs/MMscf x 0.75 = 0.45 lbs/mmscf.

The other component of SO_x production is from the concentration of H₂S in the biogas.

Biogas burned in the flare will have a concentration of no more than 6000 ppm of H₂S. The conversion of H₂S to SO_x is as follow:
6000 ppm = 6000 mg/L.

Air flow rate = 24,000 cf/hr which equates to 6.769 L/hr

therefore: $6000 \text{ mg/l} \times 6.769 \text{ L/hr} \times 1 \text{ g}/1000 \text{ mg} \times 1 \text{ lb}/454 \text{ g} = 0.0731 \text{ lbs/hr H}_2\text{S}$

$0.0731 \text{ lbs/hr H}_2\text{S} \times (1 \text{ lb/mole}/34 \text{ lb H}_2\text{S}) \times (1 \text{ lbmole SO}_2/1 \text{ lbmole H}_2\text{S}) \times (64 \text{ lb SO}_x/1 \text{ lbmole}) = 0.137 \text{ lbs/hr SO}_x$;

In terms of lbs of SO_x/mmcf of SO_x production from the flare the emission factor is calculated as such: $0.137 \text{ lbs/hr SO}_x/0.0240 \text{ mmcf/hr} = 5.71 \text{ lbs/mmcf}$ before control. Adding 5.71 lbs/mmcf for the H₂S conversion to the emission factor for the combustion of methane = $5.71 \text{ lbs/mmcf} + 0.45 \text{ lbs/mmcf} = 6.16 \text{ lbs/mmcf}$ total

The average concentration of biogas vented to the boilers is much lower than that vented to the flare due to the glycol chiller which dehydrates the biogas stream causing the H₂S to be removed. Conservatively, approximately 95% of the H₂S is removed from the biogas stream before combustion in the boilers. Therefore, at $6000 \text{ mg/l} \times 6.769 \text{ L/hr} \times 1 \text{ g}/1000 \text{ mg} \times 1 \text{ lb}/454 \text{ g} \times (1-0.95) = 0.0045 \text{ lbs/hr H}_2\text{S}$ venting to the boilers.

$0.0045 \text{ lbs/hr H}_2\text{S} \times (1 \text{ lb/mole}/34 \text{ lb H}_2\text{S}) \times (1 \text{ lbmole SO}_2/1 \text{ lbmole H}_2\text{S}) \times (64 \text{ lb SO}_x/1 \text{ lbmole}) = 0.0085 \text{ lbs/hr SO}_x$;

In terms of lbs of SO_x/mmcf the emission factor after control is $(0.0085 \text{ lbs/hr SO}_x / 0.024 \text{ mmcf/hr}) = 0.35 \text{ lbs/mmcf}$ after control.

Adding 0.35 lbs/mmcf for the H₂S conversion to the emission factor for the combustion of methane = $0.35 \text{ lbs/mmcf} + 0.45 \text{ lbs/mmcf} = 0.80 \text{ lbs/mmcf}$ total

Pollutant	Emission Factors		Kewanee Boiler #3		Victory Boiler #4				Kemco Water Heater #3		Kemco Water Heater #4		Misc Small Heaters (combined)	
	Natural Gas ¹	Fuel Oil ⁴	Natural Gas	Annual ²	Natural Gas	Annual ²	Fuel Oil	Annual ²	Natural Gas	Annual ²	Natural Gas	Annual ²	Natural Gas	Annual ²
	(lb/MMscf)	(lb/Mgal)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
1,1,1-Trichloroethane		2.36E-04	-	-	-	-	3.53E-05	1.54E-04	-	-	-	-	-	-
2-Methylnaphthalene ³	2.40E-05		4.01E-07	1.76E-06	5.02E-07	2.20E-06	-	-	3.60E-07	1.58E-06	3.60E-07	1.58E-06	1.32E-06	5.76E-06
3-Methylchloranthrene ³	1.80E-06		3.01E-08	1.32E-07	3.77E-08	1.65E-07	-	-	2.70E-08	1.18E-07	2.70E-08	1.18E-07	9.87E-08	4.32E-07
7,12-Dimethylbenz(a)anthracene ³	1.60E-05		2.67E-07	1.17E-06	3.35E-07	1.47E-06	-	-	2.40E-07	1.05E-06	2.40E-07	1.05E-06	8.77E-07	3.84E-06
Acenaphthene ³	1.80E-06	2.11E-05	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.15E-06	1.38E-05	2.70E-08	1.18E-07	2.70E-08	1.18E-07	9.87E-08	4.32E-07
Acenaphthylene ³	1.80E-06	2.53E-07	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.78E-08	1.66E-07	2.70E-08	1.18E-07	2.70E-08	1.18E-07	9.87E-08	4.32E-07
Anthracene ³	2.40E-06	1.22E-06	4.01E-08	1.76E-07	5.02E-08	2.20E-07	1.82E-07	7.99E-07	3.60E-08	1.58E-07	3.60E-08	1.58E-07	1.32E-07	5.76E-07
Benz(a)anthracene ³	1.80E-06	4.01E-06	3.01E-08	1.32E-07	3.77E-08	1.65E-07	5.99E-07	2.63E-06	2.70E-08	1.18E-07	2.70E-08	1.18E-07	9.87E-08	4.32E-07
Benzene	2.10E-03	2.14E-04	3.51E-05	1.54E-04	4.39E-05	1.92E-04	3.20E-05	1.40E-04	3.15E-05	1.38E-04	3.15E-05	1.38E-04	1.15E-04	5.04E-04
Benzo(a)pyrene ³	1.20E-06		2.00E-08	8.78E-08	2.51E-08	1.10E-07	-	-	1.80E-08	7.88E-08	1.80E-08	7.88E-08	6.58E-08	2.88E-07
Benzo(b)fluoranthene ³	1.80E-06		3.01E-08	1.32E-07	3.77E-08	1.65E-07	-	-	2.70E-08	1.18E-07	2.70E-08	1.18E-07	9.87E-08	4.32E-07
Benzo(g,h,i)perylene ³	1.20E-06	2.26E-06	2.00E-08	8.78E-08	2.51E-08	1.10E-07	3.38E-07	1.48E-06	1.80E-08	7.88E-08	1.80E-08	7.88E-08	6.58E-08	2.88E-07
Benzo(k)fluoranthene ³	1.80E-06		3.01E-08	1.32E-07	3.77E-08	1.65E-07	-	-	2.70E-08	1.18E-07	2.70E-08	1.18E-07	9.87E-08	4.32E-07
Chrysene ³	1.80E-06	2.38E-06	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.56E-07	1.56E-06	2.70E-08	1.18E-07	2.70E-08	1.18E-07	9.87E-08	4.32E-07
Dibenzof(a,h)anthracene ³	1.20E-06	1.67E-06	2.00E-08	8.78E-08	2.51E-08	1.10E-07	2.50E-07	1.09E-06	1.80E-08	7.88E-08	1.80E-08	7.88E-08	6.58E-08	2.88E-07
Dichlorobenzene	1.20E-03		2.00E-05	8.78E-05	2.51E-05	1.10E-04	-	-	1.80E-05	7.88E-05	1.80E-05	7.88E-05	6.58E-05	2.88E-04
Ethylbenzene		6.36E-06	-	-	-	-	9.51E-07	4.16E-06	-	-	-	-	-	-
Fluoranthene ³	3.00E-06	4.84E-06	5.01E-08	2.19E-07	6.28E-08	2.75E-07	7.23E-07	3.17E-06	4.50E-08	1.97E-07	4.50E-08	1.97E-07	1.64E-07	7.20E-07
Fluorene ³	2.80E-06	4.47E-06	4.68E-08	2.05E-07	5.86E-08	2.57E-07	6.68E-07	2.93E-06	4.20E-08	1.84E-07	4.20E-08	1.84E-07	1.53E-07	6.72E-07
Formaldehyde	0.08	0.06	1.25E-03	5.49E-03	1.57E-03	6.87E-03	9.12E-03	3.99E-02	1.13E-03	4.93E-03	1.13E-03	4.93E-03	4.11E-03	1.80E-02
Hexane	1.80		3.01E-02	1.32E-01	3.77E-02	1.65E-01	-	-	2.70E-02	1.18E-01	2.70E-02	1.18E-01	9.87E-02	4.32E-01
Indeno(1,2,3-cd)pyrene ³	1.80E-06	2.14E-06	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.20E-07	1.40E-06	2.70E-08	1.18E-07	2.70E-08	1.18E-07	9.87E-08	4.32E-07
Naphthalene	6.10E-04	1.13E-03	1.02E-05	4.46E-05	1.28E-05	5.59E-05	1.69E-04	7.40E-04	9.15E-06	4.01E-05	9.15E-06	4.01E-05	3.34E-05	1.46E-04
Phenanthrene ³	1.70E-05	1.05E-05	2.84E-07	1.24E-06	3.56E-07	1.56E-06	1.57E-06	6.87E-06	2.55E-07	1.12E-06	2.55E-07	1.12E-06	9.32E-07	4.08E-06
Pyrene ³	5.00E-06	4.25E-06	8.35E-08	3.66E-07	1.05E-07	4.58E-07	6.35E-07	2.78E-06	7.50E-08	3.29E-07	7.50E-08	3.29E-07	2.74E-07	1.20E-06
Toluene	3.40E-03	6.20E-03	5.68E-05	2.49E-04	7.11E-05	3.12E-04	9.27E-04	4.06E-03	5.10E-05	2.23E-04	5.10E-05	2.23E-04	1.86E-04	8.16E-04
o-Xylene		1.09E-04	-	-	-	-	1.63E-05	7.14E-05	-	-	-	-	-	-
Arsenic	2.00E-04	4.00E-06	3.34E-06	1.46E-05	4.19E-06	1.83E-05	5.98E-07	2.62E-06	3.00E-06	1.31E-05	3.00E-06	1.31E-05	1.10E-05	4.80E-05
Beryllium	1.20E-05	3.00E-06	2.00E-07	8.78E-07	2.51E-07	1.10E-06	4.48E-07	1.96E-06	1.80E-07	7.88E-07	1.80E-07	7.88E-07	6.58E-07	2.88E-06
Cadmium	1.10E-03	3.00E-06	1.84E-05	8.05E-05	2.30E-05	1.01E-04	4.48E-07	1.96E-06	1.65E-05	7.23E-05	1.65E-05	7.23E-05	6.03E-05	2.64E-04
Chromium	1.40E-03	3.00E-06	2.34E-05	1.02E-04	2.93E-05	1.28E-04	4.48E-07	1.96E-06	2.10E-05	9.20E-05	2.10E-05	9.20E-05	7.67E-05	3.36E-04
Cobalt	8.40E-05		1.40E-06	6.14E-06	1.76E-06	7.70E-06	-	-	1.26E-06	5.52E-06	1.26E-06	5.52E-06	4.60E-06	2.02E-05
Manganese	3.80E-04	3.00E-06	6.35E-06	2.78E-05	7.95E-06	3.48E-05	4.48E-07	1.96E-06	5.70E-06	2.50E-05	5.70E-06	2.50E-05	2.08E-05	9.12E-05
Mercury	2.60E-04	6.00E-06	4.34E-06	1.90E-05	5.44E-06	2.38E-05	8.97E-07	3.93E-06	3.90E-06	1.71E-05	3.90E-06	1.71E-05	1.42E-05	6.24E-05
Nickel	2.10E-03	3.00E-06	3.51E-05	1.54E-04	4.39E-05	1.92E-04	4.48E-07	1.96E-06	3.15E-05	1.38E-04	3.15E-05	1.38E-04	1.15E-04	5.04E-04
Selenium	2.40E-05	1.50E-05	4.01E-07	1.76E-06	5.02E-07	2.20E-06	2.24E-06	9.82E-06	3.60E-07	1.58E-06	3.60E-07	1.58E-06	1.32E-06	5.76E-06
Total Combustion HAP:			0.03	0.14	0.04	0.17	0.01	0.05	0.03	0.12	0.03	0.12	0.10	0.45

1. Emission factors for natural gas combustion per AP-42 Section 1.4, Tables 1.4-3 and 1.4-4, dated July 1998.
 2. Potential annual emissions are based on the hourly potential emissions from natural gas combustion multiplied by 8,760 hours of operation per year.
 3. HAP because it is Polycyclic Organic Matter (POM).
 4. Emission factors for fuel oil combustion per AP-42 Section 1.4, Tables 1.3-8 and 1.3-10, dated September 1998.

Pollutant	Emission Factors	Emission Factors
	Secondary Natural Gas ² (lb/MMBtu)	Primary Propane ² (lb/MMBtu)
NO _x	100	13
CO	84	7.5
PM	7.6	0.70
PM ₁₀	7.6	0.70
PM _{2.5}	7.6	0.70
SO ₂	0.6	1.50
VOC	5.5	0.8
Lead	5.00E-04	
CO _{2e} ¹	117,098	12,773

1. AP-42 Section 1.4, Natural Gas Combustion, Tables 1.4-1 and 1.4-2, dated July 1998.

2. AP-42 Section 1.5 Liquefied Petroleum Gas Combustion, Tables 1.5-1 and 1.5-2 dated July 2008, Sulfur is assumed 15 ppm

Equipment	Description	Heat Capacity		NO _x				CO				PM				PM ₁₀				PM _{2.5}					
		MBtu/hr Gas	mMBtu/hr	mmscf/hr	mgal/hr	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy										
10-ADAC-0001	RTU #1 (410A)	270	2.70E-01	2.70E-04	2.95E-03	2.70E-02	1.18E-01	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.21E-02	9.69E-02	2.05E-03	8.99E-03	2.07E-03	9.05E-03	2.05E-03	8.99E-03	2.07E-03	9.05E-03	2.05E-03	8.99E-03	2.07E-03	9.05E-03
10-ADAC-0002	RTU #2 (410A)	270	2.70E-01	2.70E-04	2.95E-03	2.70E-02	1.18E-01	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.21E-02	9.69E-02	2.05E-03	8.99E-03	2.07E-03	9.05E-03	2.05E-03	8.99E-03	2.07E-03	9.05E-03	2.05E-03	8.99E-03	2.07E-03	9.05E-03
10-ADAC-0003	RTU #3 EVIS BREAK ROOM (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02
10-ADAC-0004	RTU #4 (410A)	270	2.70E-01	2.70E-04	2.95E-03	2.70E-02	1.18E-01	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.21E-02	9.69E-02	2.05E-03	8.99E-03	2.07E-03	9.05E-03	2.05E-03	8.99E-03	2.07E-03	9.05E-03	2.05E-03	8.99E-03	2.07E-03	9.05E-03
10-ADAC-0005	RTU #5 (410A)	270	2.70E-01	2.70E-04	2.95E-03	2.70E-02	1.18E-01	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.21E-02	9.69E-02	2.05E-03	8.99E-03	2.07E-03	9.05E-03	2.05E-03	8.99E-03	2.07E-03	9.05E-03	2.05E-03	8.99E-03	2.07E-03	9.05E-03
10-ADAC-0006	RTU #6 (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02
10-ADAC-0007	RTU #7 (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02
10-ADAC-0008	RTU #8 (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02
10-ADAC-0009	RTU #9 (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02
10-ADAC-0010	RTU #10 (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02	3.08E-03	1.35E-02	3.10E-03	1.36E-02
10-ADAC-0011	RTU #11 (410A)	180	1.80E-01	1.80E-04	1.97E-03	1.80E-02	7.88E-02	2.56E-02	1.12E-01	1.51E-02	6.62E-02	1.48E-02	6.46E-02	1.37E-03	5.99E-03	1.38E-03	6.03E-03	1.37E-03	5.99E-03	1.38E-03	6.03E-03	1.37E-03	5.99E-03	1.38E-03	6.03E-03
10-ADAC-0012	RTU #12 (410A)	390	3.90E-01	3.90E-04	4.26E-03	3.90E-02	1.71E-01	5.54E-02	2.43E-01	3.28E-02	1.43E-01	3.20E-02	1.40E-01	2.96E-03	1.30E-02	2.98E-03	1.31E-02	2.96E-03	1.30E-02	2.98E-03	1.31E-02	2.96E-03	1.30E-02	2.98E-03	1.31E-02
10-ADAC-0013	RTU #13 (410A)	180	1.80E-01	1.80E-04	1.97E-03	1.80E-02	7.88E-02	2.56E-02	1.12E-01	1.51E-02	6.62E-02	1.48E-02	6.46E-02	1.37E-03	5.99E-03	1.38E-03	6.03E-03	1.37E-03	5.99E-03	1.38E-03	6.03E-03	1.37E-03	5.99E-03	1.38E-03	6.03E-03
10-ADAC-0014	RTU #14 (410A)	195	1.95E-01	1.95E-04	2.13E-03	1.95E-02	8.54E-02	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.60E-02	7.00E-02	1.48E-03	6.49E-03	1.49E-03	6.53E-03	1.48E-03	6.49E-03	1.49E-03	6.53E-03	1.48E-03	6.49E-03	1.49E-03	6.53E-03
10-ADAC-0015	RTU #15 (410A)	195	1.95E-01	1.95E-04	2.13E-03	1.95E-02	8.54E-02	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.60E-02	7.00E-02	1.48E-03	6.49E-03	1.49E-03	6.53E-03	1.48E-03	6.49E-03	1.49E-03	6.53E-03	1.48E-03	6.49E-03	1.49E-03	6.53E-03
10-ADAC-0016	RTU #16 (410A)	195	1.95E-01	1.95E-04	2.13E-03	1.95E-02	8.54E-02	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.60E-02	7.00E-02	1.48E-03	6.49E-03	1.49E-03	6.53E-03	1.48E-03	6.49E-03	1.49E-03	6.53E-03	1.48E-03	6.49E-03	1.49E-03	6.53E-03
10-ADAC-0017	RTU #17 (410A)	195	1.95E-01	1.95E-04	2.13E-03	1.95E-02	8.54E-02	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.60E-02	7.00E-02	1.48E-03	6.49E-03	1.49E-03	6.53E-03	1.48E-03	6.49E-03	1.49E-03	6.53E-03	1.48E-03	6.49E-03	1.49E-03	6.53E-03
10-EVAC-0001	MUA #1	3125	3.13E+00	3.13E-03	3.42E-02	3.13E-01	1.37E+00	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.56E-01	1.12E+00	2.38E-02	1.04E-01	2.39E-02	1.05E-01	2.38E-02	1.04E-01	2.39E-02	1.05E-01	2.38E-02	1.04E-01	2.39E-02	1.05E-01
10-EVAC-0002	MUA #2	3125	3.13E+00	3.13E-03	3.42E-02	3.13E-01	1.37E+00	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.56E-01	1.12E+00	2.38E-02	1.04E-01	2.39E-02	1.05E-01	2.38E-02	1.04E-01	2.39E-02	1.05E-01	2.38E-02	1.04E-01	2.39E-02	1.05E-01
10-EVAC-0003	MUA #3	3125	3.13E+00	3.13E-03	3.42E-02	3.13E-01	1.37E+00	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.56E-01	1.12E+00	2.38E-02	1.04E-01	2.39E-02	1.05E-01	2.38E-02	1.04E-01	2.39E-02	1.05E-01	2.38E-02	1.04E-01	2.39E-02	1.05E-01
10-EVAC-0004	MUA #4	3125	3.13E+00	3.13E-03	3.42E-02	3.13E-01	1.37E+00	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.56E-01	1.12E+00	2.38E-02	1.04E-01	2.39E-02	1.05E-01	2.38E-02	1.04E-01	2.39E-02	1.05E-01	2.38E-02	1.04E-01	2.39E-02	1.05E-01
10-EVAC-0005	MUA #5	233	2.33E-01	2.33E-04	2.55E-03	2.33E-02	1.02E-01	3.31E-02	1.45E-01	1.96E-02	8.57E-02	1.91E-02	8.37E-02	1.77E-03	7.76E-03	1.78E-03	7.81E-03	1.77E-03	7.76E-03	1.78E-03	7.81E-03	1.77E-03	7.76E-03	1.78E-03	7.81E-03
10-LRAC-0001	HV-01	2330	2.33E+00	2.33E-03	2.55E-02	2.33E-01	1.02E+00	3.31E-01	1.45E+00	1.96E-01	8.57E-01	1.91E-01	8.37E-01	1.77E-02	7.76E-02	1.78E-02	7.81E-02	1.77E-02	7.76E-02	1.78E-02	7.81E-02	1.77E-02	7.76E-02	1.78E-02	7.81E-02
10-LRAC-0002	HV-02	1434	1.43E+00	1.43E-03	1.57E-02	1.43E-01	6.28E-01	2.04E-01	8.92E-01	1.20E-01	5.28E-01	1.18E-01	5.15E-01	1.09E-02	4.77E-02	1.10E-02	4.81E-02	1.09E-02	4.77E-02	1.10E-02	4.81E-02	1.09E-02	4.77E-02	1.10E-02	4.81E-02
10-DBAC-0001	KLEEN AIR #1 (nH3 107.4 TON)45,000 cfm	2930	2.93E+00	2.93E-03	3.20E-02	2.93E-01	1.28E+00	4.16E-01	1.82E+00	2.46E-01	1.08E+00	2.40E-01	1.05E+00	2.23E-02	9.75E-02	2.24E-02	9.82E-02	2.23E-02	9.75E-02	2.24E-02	9.82E-02	2.23E-02	9.75E-02	2.24E-02	9.82E-02
10-DBAC-0002	KLEEN AIR #2 (nH3 107.4 TON)45,000 cfm	2930	2.93E+00	2.93E-03	3.20E-02	2.93E-01	1.28E+00	4.16E-01	1.82E+00	2.46E-01	1.08E+00	2.40E-01	1.05E+00	2.23E-02	9.75E-02	2.24E-02	9.82E-02	2.23E-02	9.75E-02	2.24E-02	9.82E-02	2.23E-02	9.75E-02	2.24E-02	9.82E-02
10-DBAC-0003	KLEEN AIR #3 (nH3 107.4 TON)45,000 cfm	2930	2.93E+00	2.93E-03	3.20E-02	2.93E-01	1.28E+00	4.16E-01	1.82E+00	2.46E-01	1.08E+00	2.40E-01	1.05E+00	2.23E-02	9.75E-02	2.24E-02	9.82E-02	2.23E-02	9.75E-02	2.24E-02	9.82E-02	2.23E-02	9.75E-02	2.24E-02	9.82E-02
10-DBAC-0004	KLEEN AIR #4 (nH3 107.4 TON)45,000 cfm	2930	2.93E+00	2.93E-03	3.20E-02	2.93E-01	1.28E+00	4.16E-01	1.82E+00	2.46E-01	1.08E+00	2.40E-01	1.05E+00	2.23E-02	9.75E-02	2.24E-02	9.82E-02	2.23E-02	9.75E-02	2.24E-02	9.82E-02	2.23E-02	9.75E-02	2.24E-02	9.82E-02
10-UTPM-0002	VAPORIZER/MIXER	880	8.80E-01	8.80E-04	9.62E-03	8.80E-02	3.85E-01	1.25E-01	5.48E-01	7.39E-02	3.24E-01	7.21E-02	3.16E-01	6.69E-03	2.93E-02	6.73E-03	2.95E-02	6.69E-03	2.93E-02	6.73E-03	2.95E-02	6.69E-03	2.93E-02	6.73E-03	2.95E-02
	Gas Heater in Dry Receiving	200	2.00E-01	2.00E-04	2.19E-03	2.00E-02	8.76E-02	2.84E-02	1.24E-01	1.68E-02	7.36E-02	1.64E-02	7.38E-02	1.52E-03	6.66E-03	1.53E-03	6.70E-03	1.52E-03	6.66E-03	1.53E-03	6.70E-03	1.52E-03	6.66E-03	1.53E-03	6.70E-03
	Gas Clothes Dryer Supply East	1	1.00E-03	1.00E-06	1.09E-05	1.00E-04	4.38E-04	1.42E-04	6.22E-04	8.40E-05	3.68E-04	8.20E-05	3.59E-04	7.60E-06	3.33E-05	7.65E-06	3.35E-								

10-UTEF-0057	OFFFALL HV-3	2259	2.26E+00	2.26E-03	2.47E-02	2.26E-01	9.89E-01	3.21E-01	1.41E+00	1.90E-01	8.31E-01	1.85E-01	8.11E-01	1.72E-02	7.52E-02	1.73E-02	7.57E-02	1.72E-02	7.52E-02	1.73E-02	7.57E-02	1.72E-02	7.52E-02	1.73E-02	7.57E-02
10-DFAC-0002	Gas Heater in Offal DAF Room	249	2.49E-01	2.49E-04	2.72E-03	2.49E-02	1.09E-01	3.54E-02	1.55E-01	2.09E-02	9.16E-02	2.04E-02	8.94E-02	1.89E-03	8.29E-03	1.90E-03	8.34E-03	1.89E-03	8.29E-03	1.90E-03	8.34E-03	1.89E-03	8.29E-03	1.90E-03	8.34E-03
10-EVAC-0006	MUA #6 (410A)	270	2.70E-01	2.70E-04	2.95E-03	2.70E-02	1.18E-01	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.21E-02	9.69E-02	2.05E-03	8.99E-03	2.07E-03	9.05E-03	2.05E-03	8.99E-03	2.07E-03	9.05E-03	2.05E-03	8.99E-03	2.07E-03	9.05E-03
10-ADAC-0021	RTU PBX (410A)	180	1.80E-01	1.80E-04	1.97E-03	1.80E-02	7.88E-02	2.56E-02	1.12E-01	1.51E-02	6.62E-02	1.48E-02	6.46E-02	1.37E-03	5.99E-03	1.38E-03	6.03E-03	1.37E-03	5.99E-03	1.38E-03	6.03E-03	1.37E-03	5.99E-03	1.38E-03	6.03E-03
10-LRAC-0001	ICP-1 LIVE RECEIVING (410A)	540	5.40E-01	5.40E-04	5.90E-03	5.40E-02	2.37E-01	7.67E-02	3.36E-01	4.54E-02	1.99E-01	4.43E-02	1.94E-01	4.10E-03	1.80E-02	4.13E-03	1.81E-02	4.10E-03	1.80E-02	4.13E-03	1.81E-02	4.10E-03	1.80E-02	4.13E-03	1.81E-02
10-LRAC-0002	ICP-2 LIVE RECEIVING (410A)	540	5.40E-01	5.40E-04	5.90E-03	5.40E-02	2.37E-01	7.67E-02	3.36E-01	4.54E-02	1.99E-01	4.43E-02	1.94E-01	4.10E-03	1.80E-02	4.13E-03	1.81E-02	4.10E-03	1.80E-02	4.13E-03	1.81E-02	4.10E-03	1.80E-02	4.13E-03	1.81E-02
New to be installed in 2020	MAU365	4930	4.93	4.93E-03	5.39E-02	4.93E-01	2.16E+00	7.00E-01	3.07E+00	4.14E-01	1.81E+00	4.04E-01	1.77E+00	3.75E-02	1.64E-01	3.77E-02	1.65E-01	3.75E-02	1.64E-01	3.77E-02	1.65E-01	3.75E-02	1.64E-01	3.77E-02	1.65E-01
New to be installed in 2020	MAU370	4108	4.11	4.11E-03	4.49E-02	4.11E-01	1.80E+00	5.84E-01	2.56E+00	3.45E-01	1.51E+00	3.37E-01	1.47E+00	3.12E-02	1.37E-01	3.14E-02	1.38E-01	3.12E-02	1.37E-01	3.14E-02	1.38E-01	3.12E-02	1.37E-01	3.14E-02	1.38E-01
New to be installed in 2020	MAU375	1232	1.23	1.23E-03	1.35E-02	1.23E-01	5.40E-01	1.75E-01	7.67E-01	1.03E-01	4.53E-01	1.01E-01	4.42E-01	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02
New to be installed in 2020	MAU380	1232	1.23	1.23E-03	1.35E-02	1.23E-01	5.40E-01	1.75E-01	7.67E-01	1.03E-01	4.53E-01	1.01E-01	4.42E-01	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02
New to be installed in 2020	MAU385	1232	1.23	1.23E-03	1.35E-02	1.23E-01	5.40E-01	1.75E-01	7.67E-01	1.03E-01	4.53E-01	1.01E-01	4.42E-01	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02
New to be installed in 2020	MAU390	1232	1.23	1.23E-03	1.35E-02	1.23E-01	5.40E-01	1.75E-01	7.67E-01	1.03E-01	4.53E-01	1.01E-01	4.42E-01	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02
New to be installed in 2020	MAU395	1232	1.23	1.23E-03	1.35E-02	1.23E-01	5.40E-01	1.75E-01	7.67E-01	1.03E-01	4.53E-01	1.01E-01	4.42E-01	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02
New to be installed in 2020	MAU400	1232	1.23	1.23E-03	1.35E-02	1.23E-01	5.40E-01	1.75E-01	7.67E-01	1.03E-01	4.53E-01	1.01E-01	4.42E-01	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02	9.36E-03	4.10E-02	9.43E-03	4.13E-02
	Total	54.81	0.05	0.60	5.48	24.01	7.79	34.11	4.60	20.16	4.49	19.68	0.42	1.82	0.42	1.84	0.42	1.82	0.42	1.84	0.42	1.82	0.42	1.84	

Equipment	Description	SOx				VOC				Lead				CO2e				Maximum PTE		Maximum PTE		Maximum PTE		Maximum PTE		Maximum PTE		Maximum PTE		Maximum PTE		Maximum PTE			
		NG		LP		NG		LP		NG		LP		NG		LP		NOx		CO		PM		PM10		PM2.5		SOx		VOC		Pb		CO2e	
		lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy										
10-ADAC-0001	RTU #1 (410A)	1.62E-04	7.10E-04	4.43E-03	1.94E-02	1.49E-03	6.50E-03	2.36E-03	1.03E-02	1.35E-07	5.91E-07			31.62	138.48	37.69	165.09	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.07E-03	9.05E-03	2.07E-03	9.05E-03	2.07E-03	9.05E-03	4.43E-03	1.94E-02	2.36E-03	1.03E-02	1.35E-07	5.91E-07	37.69	165.09
10-ADAC-0002	RTU #2 (410A)	1.62E-04	7.10E-04	4.43E-03	1.94E-02	1.49E-03	6.50E-03	2.36E-03	1.03E-02	1.35E-07	5.91E-07			31.62	138.48	37.69	165.09	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.07E-03	9.05E-03	2.07E-03	9.05E-03	2.07E-03	9.05E-03	4.43E-03	1.94E-02	2.36E-03	1.03E-02	1.35E-07	5.91E-07	37.69	165.09
10-ADAC-0003	RTU #3 EVIS BREAK ROOM (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0004	RTU #4 (410A)	1.62E-04	7.10E-04	4.43E-03	1.94E-02	1.49E-03	6.50E-03	2.36E-03	1.03E-02	1.35E-07	5.91E-07			31.62	138.48	37.69	165.09	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.07E-03	9.05E-03	2.07E-03	9.05E-03	2.07E-03	9.05E-03	4.43E-03	1.94E-02	2.36E-03	1.03E-02	1.35E-07	5.91E-07	37.69	165.09
10-ADAC-0005	RTU #5 (410A)	1.62E-04	7.10E-04	4.43E-03	1.94E-02	1.49E-03	6.50E-03	2.36E-03	1.03E-02	1.35E-07	5.91E-07			31.62	138.48	37.69	165.09	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.07E-03	9.05E-03	2.07E-03	9.05E-03	2.07E-03	9.05E-03	4.43E-03	1.94E-02	2.36E-03	1.03E-02	1.35E-07	5.91E-07	37.69	165.09
10-ADAC-0006	RTU #6 (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0007	RTU #7 (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0008	RTU #8 (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0009	RTU #9 (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0010	RTU #10 (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0011	RTU #11 (410A)	1.08E-04	4.73E-04	2.95E-03	1.29E-02	9.90E-04	4.34E-03	1.57E-03	6.89E-03	9.00E-08	3.94E-07			21.08	92.32	25.13	110.26	2.56E-02	1.12E-01	1.51E-02	6.62E-02	1.38E-03	6.03E-03	1.38E-03	6.03E-03	1.38E-03	6.03E-03	2.95E-03	1.29E-02	1.57E-03	6.89E-03	9.00E-08	3.94E-07	25.13	110.26
10-ADAC-0012	RTU #12 (410A)	2.34E-04	1.02E-03	6.39E-03	2.80E-02	2.15E-03	9.40E-03	3.41E-03	1.49E-02	1.95E-07	8.54E-07			45.67	200.03	54.44	238.46	5.54E-02	2.43E-01	3.28E-02	1.43E-01	2.98E-03	1.31E-02	2.98E-03	1.31E-02	2.98E-03	1.31E-02	6.39E-03	2.80E-02	3.41E-03	1.49E-02	1.95E-07	8.54E-07	54.44	238.46
10-ADAC-0013	RTU #13 (410A)	1.08E-04	4.73E-04	2.95E-03	1.29E-02	9.90E-04	4.34E-03	1.57E-03	6.89E-03	9.00E-08	3.94E-07			21.08	92.32	25.13	110.26	2.56E-02	1.12E-01	1.51E-02	6.62E-02	1.38E-03	6.03E-03	1.38E-03	6.03E-03	1.38E-03	6.03E-03	2.95E-03	1.29E-02	1.57E-03	6.89E-03	9.00E-08	3.94E-07	25.13	110.26
10-ADAC-0014	RTU #14 (410A)	1.17E-04	5.12E-04	3.20E-03	1.40E-02	1.07E-03	4.70E-03	1.70E-03	7.47E-03	9.75E-08	4.27E-07			22.83	100.01	27.22	119.23	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.49E-03	6.53E-03	1.49E-03	6.53E-03	1.49E-03	6.53E-03	3.20E-03	1.40E-02	1.70E-03	7.47E-03	9.75E-08	4.27E-07	27.22	119.23
10-ADAC-0015	RTU #15 (410A)	1.17E-04	5.12E-04	3.20E-03	1.40E-02	1.07E-03	4.70E-03	1.70E-03	7.47E-03	9.75E-08	4.27E-07			22.83	100.01	27.22	119.23	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.49E-03	6.53E-03	1.49E-03	6.53E-03	1.49E-03	6.53E-03	3.20E-03	1.40E-02	1.70E-03	7.47E-03	9.75E-08	4.27E-07	27.22	119.23
10-ADAC-0016	RTU #16 (410A)	1.17E-04	5.12E-04	3.20E-03	1.40E-02	1.07E-03	4.70E-03	1.70E-03	7.47E-03	9.75E-08	4.27E-07			22.83	100.01	27.22	119.23	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.49E-03	6.53E-03	1.49E-03	6.53E-03	1.49E-03	6.53E-03	3.20E-03	1.40E-02	1.70E-03	7.47E-03	9.75E-08	4.27E-07	27.22	119.23
10-ADAC-0017	RTU #17 (410A)	1.17E-04	5.12E-04	3.20E-03	1.40E-02	1.07E-03	4.70E-03	1.70E-03	7.47E-03	9.75E-08	4.27E-07			22.83	100.01	27.22	119.23	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.49E-03	6.53E-03	1.49E-03	6.53E-03	1.49E-03	6.53E-03	3.20E-03	1.40E-02	1.70E-03	7.47E-03	9.75E-08	4.27E-07	27.22	119.23
10-EVAC-0001	MUA #1	1.88E-03	8.21E-03	5.12E-02	2.24E-01	1.72E-02	7.53E-02	2.73E-02	1.20E-01	1.56E-06	6.84E-06			365.93	1602.78	436.24	1910.72	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.39E-02	1.05E-01	2.39E-02	1.05E-01	2.39E-02	1.05E-01	5.12E-02	2.24E-01	2.73E-02	1.20E-01	1.56E-06	6.84E-06	436.24	1910.72
10-EVAC-0002	MUA #2	1.88E-03	8.21E-03	5.12E-02	2.24E-01	1.72E-02	7.53E-02	2.73E-02	1.20E-01	1.56E-06	6.84E-06			365.93	1602.78	436.24	1910.72	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.39E-02	1.05E-01	2.39E-02	1.05E-01	2.39E-02	1.05E-01	5.12E-02	2.24E-01	2.73E-02	1.20E-01	1.56E-06	6.84E-06	436.24	1910.72
10-EVAC-0003	MUA #3	1.88E-03	8.21E-03	5.12E-02	2.24E-01	1.72E-02	7.53E-02	2.73E-02	1.20E-01	1.56E-06	6.84E-06			365.93	1602.78	436.24	1910.72	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.39E-02	1.05E-01	2.39E-02	1.05E-01	2.39E-02	1.05E-01	5.12E-02	2.24E-01	2.73E-02	1.20E-01	1.56E-06	6.84E-06	436.24	1910.72
10-EVAC-0004	MUA #4	1.88E-03	8.21E-03	5.12E-02	2.24E-01	1.72E-02	7.53E-02	2.73E-02	1.20E-01	1.56E-06	6.84E-06			365.93	1602.78	436.24	1910.72	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.39E-02	1.05E-01	2.39E-02	1.05E-01	2.39E-02	1.05E-01	5.12E-02	2.24E-01	2.73E-02	1.20E-01	1.56E-06	6.84E-06	436.24	1910.72
10-EVAC-0005	MUA #5	1.40E-04	6.12E-04	3.82E-03	1.67E-02	1.28E-03	5.61E-03	2.04E-03	8.92E-03	1.17E-07	5.10E-07			27.28	119.50	32.52	142.46	3.31E-02	1.45E-01	1.96E-02	8.57E-02	1.78E-03	7.81E-03	1.78E-03	7.81E-03	1.78E-03	7.81E-03	3.82E-03	1.67E-02	2.04E-03	8.92E-03	1.17E-07	5.10E-07	32.52	142.46
10-LRAC-0001	HV-01	1.40E-03	6.12E-03	3.82E-02	1.67E-01	1.28E-02	5.61E-02	2.04E-02	8.92E-02	1.17E-06	5.10E-06			272.84	1195.03	325.26	1424.63	3.31E-01	1.45E+00	1.96E-01	8.57E-01	1.78E-02	7.81E-02	1.78E-02	7.81E-02	1.78E-02	7.81E-02	3.82E-02	1.67E-01	2.04E-02	8.92E-02	1.17E-06	5.10E-06	325.26	1424.63
10-LRAC-0002	HV-02	8.60E-04	3.77E-03	2.35E-02	1.03E-01	7.89E-03	3.45E-02	1.25E-02	5.49E-02	7.17E-07	3.14E-06			167.92	735.48	200.18	876.79	2.04E-01	8.92E-01	1.20E-01	5.28E-01	1.10E-02	4.81E-02	1.10E-02	4.81E-02	1.10E-02	4.81E-02	2.35E-02	1.03E-01	1.25E-02	5.49E-02	7.17E-07	3.14E-06	200.18	876.79
10-DBAC-0001	KLEEN AIR #1 (n#3 107.4 TON)45,000 cfm	1.76E-03	7.70E-03	4.80E-02	2.10E-01	1.61E-																													

Grain Operations
Equity Group - Kentucky Division LLC
Albany, Kentucky

Emission Factor ¹	PM (lb/ton)	PM10 (lb/ton)	PM2.5 (lb/ton)
Grain Receiving Straight Truck (SCC 3-02-005-51)	0.18	0.059	0.01
Grain Receiving Hopper Truck (SCC 3-02-005-52)	0.035	0.0078	0.0013
Headhouse and Grain Handling (SCC 3-02-005-30)	0.061	0.034	0.0058
Storage Bin (vent) (SCC 3-02-005-40)	0.025	0.0063	0.0011
Grain Shipping Truck (SCC 3-02-005-60)	0.086	0.029	0.0049

1. Emission factors from AP 42 Table 9.9.1-1

PERMITTED EMISSIONS FROM 401 KAR 59:010 Section 4 (allowable PM emissions)

interpolation of the data for process weight rates up to 60,000 lb/hr. shall be accomplished by use of the equation

$$E = 3.59P^{0.62} \quad \text{where } E = \text{rate of emission in lb/hr and } P = \text{process weight rate in tons/hr.}$$

$$E = 3.59 \times 11.42^{0.62} \quad (\text{based on } 11.42 \text{ tons max per hour thruput})$$

Permitted Emissions = 16.2 pounds PM10 per hour

GRAIN PARTICULATE EMISSIONS
BASED ON 100,000 tons/year grain transfer

Emission Unit	Description	Equipment Capacity (tons/hr)	Actual Capacity (tons/hr)	Emissions (lbs/hr)			Emissions (TPY)		
				PM	PM10	PM2.5	PM	PM10	PM2.5
EU09	Truck Unloading	175	11.42	1.81	0.62	0.10	7.91	2.71	0.43
EU10	Auger Conveyor to Silo	175	11.42	0.70	0.39	0.07	3.05	1.70	0.29
EU11	Silo Transfer Conveyor	175	11.42	0.70	0.39	0.07	3.05	1.70	0.29
EU12	Silo #1	125	2.85	0.07	0.02	0.00	0.31	0.08	0.01
EU13	Silo #2	125	2.85	0.07	0.02	0.00	0.31	0.08	0.01
EU14	Silo #3	125	2.85	0.07	0.02	0.00	0.31	0.08	0.01
EU15	Silo #4	125	2.85	0.07	0.02	0.00	0.31	0.08	0.01
EU16	Auger Conveyor from Silo #1	175	2.85	0.07	0.10	0.02	0.31	0.43	0.07
EU17	Auger Conveyor from Silo #2	175	2.85	0.07	0.10	0.02	0.31	0.43	0.07
EU18	Auger Conveyor from Silo #3	175	2.85	0.07	0.10	0.02	0.31	0.43	0.07
EU19	Auger Conveyor from Silo #4	175	2.85	0.07	0.10	0.02	0.31	0.43	0.07
EU20	Truck Loadout	175	11.42	0.98	0.33	0.06	4.30	1.45	0.25
Total Emissions				4.75	2.19	0.37	20.81	9.57	1.60

Theoretical PM emissions in TONS
PER YEAR based on maximum
equipment process rates at 8,760
hours/year

PM	PM10	PM2.5
121.3	41.5	6.7
46.8	26.1	4.4
46.8	26.1	4.4
13.7	3.4	0.6
13.7	3.4	0.6
13.7	3.4	0.6
19.2	26.1	4.4
19.2	26.1	4.4
19.2	26.1	4.4
19.2	26.1	4.4
65.9	22.2	3.8
412.1	233.9	39.5

Process Discussion - The feed is processed at their Franklin, Kentucky. This facility is used only as a transfer point. The feed is stored at this facility then hauled to poultry farms.

FEED TRANSFER PROCESS ASSUMPTIONS

- Current grain transfer in 2009 was 89,000 tons and was based on the maximum feed delivered to the poultry suppliers to this facility. The facility is at maximum capacity for handling poultry processing and therefore the 89,000 is considered a limit based on the bottleneck of processing rates and capacity.
- For purposes of this permit, the maximum rate of grain transfer in future years is assumed to be 100,000 tons/year
 Grain trucks carry 48,000 pounds of grain (each)
- Unloading cycle is 30 minutes to unload truck and 20 minutes to reset prior to unloading next truck
- 85% of grain is delivered by straight trucks and 15% is by hopper truck - this factor is applied to EU09
- Grain Transfer Rate
 Maximum = 24 tons/hour
 Average = 100,000 tons per year / 8760 = 11.415525 tons/hour
- Transfers of grain to silos and from silos via augers is based on average rate / 4 since there are 4 silos and four loadout augers (to one truck loadout)
 Example - if only one silo was being filled, then the transfer rate from the unloading truck to the silo would be 11.41 tons per hour and the transfer rate to the other three silos would be zero.

Internal Engine Combustion
 Equity Group - Kentucky Division LLC
 Albany, Kentucky

Source	Emission Source ID	Gross Horsepower (bhp)	Heat Input Capacity ¹ (MMBtu/hr)	Diesel Heating Value (Btu/scf)	Hourly Diesel Consumption (Mgal/hr)	Annual Hours of Operation (hr/yr)
Fire Pump	EU07	117	0.82	140,000	0.006	500

Make	Model #	Serial Number	Rating in KW	Fuel Type	Tank Size Gal	Horse power	Tank Location	Estimated gals/yr
Syncro Flo	1500 FHSC85PH	980881		Diesel	165	117	Outside	3,000

Criteria Pollutant Potential Emissions from Fire Pump

Pollutant	Emission Factors Diesel ² (lb/hp-hr)	Emergency Generator Potential	
		Diesel (lb/hr)	Annual ³ (tpy)
NO _x	3.10E-02	3.63	0.91
CO	6.68E-03	0.78	0.20
PM	2.20E-03	0.26	0.06
PM ₁₀	2.20E-03	0.26	0.06
PM _{2.5}	2.20E-03	0.26	0.06
SO ₂	2.05E-03	0.24	0.06
VOC	2.51E-03	0.29	0.07
CO ₂ e ⁴	1.15	134.55	33.64

1. 7000 Btu/hp hr conversion per AP-42 Table 3.3.-1.
2. Emission factors obtained from AP-42, Section 3.3, Table 3.3-1 Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines (10/96). VOC and SO₂ emissions conservatively calculated using AP-42 emission factors.
3. The engines are only used for emergency back up power; therefore, potential annual emissions are estimated based on 500 hr/yr.
4. CO₂e factor calculated based on the emission factors for CO₂, CH₄, and N₂O from 40 CFR 98, Subpart C, Tables C-1 and C-2, and the global warming potential (GWP)

Internal Engine Combustion HAP Emissions
Equity Group - Kentucky Division LLC
Albany, Kentucky

Pollutant	Emission Factors Diesel ¹ (lb/hp-hr)	Emergency Engine Potential Emissions ²	
		Diesel (lb/hr)	Annual ³ (tpy)
Benzene	6.53E-06	7.64E-04	1.91E-04
Toluene	2.86E-06	3.35E-04	8.37E-05
Xylene	2.00E-06	2.33E-04	5.84E-05
Propylene	1.81E-05	2.11E-03	5.28E-04
1,3-Butadiene	2.74E-07	3.20E-05	8.01E-06
Formaldehyde	8.26E-06	9.66E-04	2.42E-04
Acetaldehyde	5.37E-06	6.28E-04	1.57E-04
Acrolein	6.48E-07	7.58E-05	1.89E-05
Naphthalene	5.94E-07	6.95E-05	1.74E-05
Acenaphthylene	3.54E-08	4.14E-06	1.04E-06
Acenaphthene	9.94E-09	1.16E-06	2.91E-07
Fluorene	5.33E-08	6.23E-06	1.56E-06
Phenanthrene	2.06E-07	2.41E-05	6.02E-06
Anthracene	1.31E-08	1.53E-06	3.83E-07
Fluoranthene	5.33E-08	6.23E-06	1.56E-06
Pyrene	3.35E-08	3.91E-06	9.79E-07
Benzo(a)anthracene	1.18E-08	1.38E-06	3.44E-07
chrysene	2.47E-09	2.89E-07	7.23E-08
Benzo(b)fluoranthene	6.94E-10	8.12E-08	2.03E-08
Benzo(k)fluoranthene	8.05E-10	9.42E-08	2.35E-08
Benzo(a)pyrene	1.32E-09	1.54E-07	3.85E-08
Indeno(1,2,3-cd)pyrene	2.63E-09	3.07E-07	7.68E-08
Dibenz(a, h)anthracene	4.08E-09	4.77E-07	1.19E-07
Benzo(g,h,l)perylene	3.42E-09	4.00E-07	1.00E-07
Total HAP		5.27E-03	1.32E-03

1. Emission factors obtained from AP-42, Section 3.3, Table 3.3-1 Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines (10/96). VOC and SO₂ emissions conservatively calculated using AP-42 emission factors.

HAP emission factors were converted from lb/MMBtu to lb/hp-hr using a conversion factor of 7,000 Btu/hp-hr per AP-42.

2. Potential emissions are calculated based on the rated capacity of the engine (117 hp fire pump).

3. The engine is only used for emergency back up power; therefore, potential annual emissions are estimated based on 500 hr/yr.

PAA Intervetion
 Equity Group - Kentucky Division LLC
 Albany, Kentucky

PAA PTE VOC Calculations

Updated 7/17/25

PAA CY2024 Emission Estimates		
Emission Factor (lbs VOC/gal of PAA Used) ¹	0.08	
Chemsan RBRXL CY2024 PAA (gal)	138,920	
Chemsan RBRXL Density	9.4242	
CY2024 PAA (lbs/yr)	1,309,210	
CY2024 VOC Emissions (lbs/yr)	11113.6	
CY2024 VOC Emissions (tpy)	5.56	
Projected Usage of New PAA		
Promoat XL (gal/yr)	198,000	
Promoat XL Density	9.4242	
Projected VOC (lbs/yr)	15840	
Projected VOC (tpy)	7.92	
Maximum PAA solution (gal/yr)		
Maximum PAA solution (gal/yr)	3 x projected usage	
Maximum PAA solution (gals/hr)	594,000	
Maximum PAA solution (gals/hr)	142.79	based on 16 hrs/day operation, 5 days/wk, 52 wks/yr; 4160 hrs/yr
PTE VOC Emissions (tpy) (multiply actual by 1.5)	23.76	
PTE VOC Emissions (lbs/hr)	11.42	
Albany PAA Old		
% Acetic Acid	40-50	
% Peroxyacetic Acid	24-30	
Albany PAA New		
% Acetic Acid	10-30	
% Peroxyacetic Acid	10-30	
Test Location PAA		
% Acetic Acid	42-49	
% Peroxyacetic Acid	19-25	
¹ Based off November 30, 2022 and December 1, 2022 stack testing done a similar facility, Stack Test is considered CBI		

Diesel Tanks PTE Emissions
 Equity Group - Kentucky Division LLC
 Albany, Kentucky

Diesel Tanks PTE

Site: Albany KY Keystone, Albany Processing

Equations for this site: After 2020 AP-42 revisions H/D ratio: calculated (for Tanks Module)

Tank ID	Start	Product	Tank Type	Height (ft)	Diameter (ft)	Throughput in gal.	Estimated standing losses (lbs)	Estimated working losses (lbs)	Total estimated emissions (lbs)	Total estimated emissions (tons)
Boiler Fuel Tank (1,500 gal)	1/1/2025	Distillate fuel oil no. 2	Horizontal Tank	9.2	5.33	5000	0.208	0.100	0.309	0.0002
Diesel Tank 1 (10,000 gal)	1/1/2025	Diesel	Horizontal Tank	28	8	1000000	1.400	9.409	10.809	0.0054
Diesel Tank 2 (12,000 gal)	1/1/2025	Diesel	Horizontal Tank	32	8	1000000	1.594	10.279	11.873	0.0059
Diesel Tank 3 (5,000 gal)	1/1/2025	Diesel	Horizontal Tank	9.2	5.3	100000	0.206	1.206	1.412	0.0007
Fire Pump Tank (174 gal)	1/1/2025	Diesel	Horizontal Tank	5.2	2.5	5000	0.026	0.100	0.126	0.0001

	Volume (gal)	Fuel Type	Color
Diesel Tank #1 (on road)	10,000	On road	white
Diesel Tank #2 (on road)	12,000	On road	white
Diesel Tank #3 (off road)	5,000	off road	white
Boiler Fuel Diesel Tank	1,500	No. 2 Diesel	white
Diesel Tank (Fire Pump)	174	off road	white

Cleaner/Sanitizer Chemical Tanks PTE Emissions
Equity Group - Kentucky Division LLC
Albany, Kentucky

It is assumed that Tank emissions are less than 0.1 tpy since these emissions would be part of the 100% of VOCs calculated to be emitted during usage of the each chemical.

		Dimensions				
	Volume (gallons)	Diameter	Height	Orientation	Color	Emissions (tpy)
Tank 4564	2500			Vertical	white	<0.1
Tank 9522	660			Vertical	white	<0.1

Cooling Condensers
Equity Group - Kentucky Division LLC
Albany, Kentucky

updated 9/2025

Emissions from cooling condensers are estimated using the methodology of AP-42 Section 13.4. Emissions estimates are summarized in the table below.

New units to be installed in Nov 2025 and Jan 2026				PM/PM10 Emissions^b	
Description	Maximum TDS (ppm)	Drift Rate^a (%)	Flow Rate (gpm)	(lb/hr)	(tpy)
Cooling Tower 1	1,500	0.0010	2,400	0.02	0.08
Cooling Tower 2	1,500	0.0010	2,400	0.02	0.08
Cooling Tower 3	1,500	0.0010	2,400	0.02	0.08
Cooling Tower 4	1,500	0.0010	2,400	0.02	0.08
				0.07	0.32

^a drift is based on manufacturer's information

^b For ease of analysis, PM10 emissions are assumed to be equal to PM emissions. In actuality, they will be only a fraction of total PM.

Example Calculations:

$$\text{PM lb/hr} = \text{flow rate (gal/min)} * 60 \text{ min/hr} * \text{drift rate\%/100} * \text{TDS ppm/1,000,000} * 8.34 \text{ lb water/gal water}$$

$$= 2,400 \text{ gal/min} * 60 \text{ min/hr} * 0.001/100 * 1,000 \text{ parts/1,000,000 parts} * 8.34 \text{ lb water/gal} = 0.02 \text{ lb/hr}$$

$$\text{PM tpy} = 0.02 \text{ lb/hr} * 8,760 \text{ hr/yr} * \text{ton/2,000 lb} = 0.08 \text{ tons/yr}$$

Live Hang
 Equity Group - Kentucky Division LLC
 Albany, Kentucky

Source 22A/B: Live Hang Operations
 Updated 9/23/25

The facility operates two live hang lines where the chicken are hung in preparations for slaughter. Emissions from dust and manure may be vented to atmosphere. AP-42 does not contain emission factors to account for these type of emissions. The facility no long operates live hang with conscious birds. The birds are stunned with CO2 prior to entering the live hang area which renders them unconscious thus the airborne dust and manure from wing flapping no longer occurs. Tyson completed a compliance test for the Live hang operation at the poultry processing facility in Union City, TN on April 15, 2025. Based on the Tennessee approved stack testing the developed emission factor is 4.16e-4 lbs/ton total for both lines

Maximum Process Rate: 16,800 birds/hr
 Maximum Pounds of Bird: 9.0 lbs/bird
 Maximum Pounds per hour of Bird: 151,281 lbs/hr
 Maximum tons per hour of Bird: 73.5 tph

Assume: PM = PM10
 Assume: PM2.5 = 25% of PM10

Assume room air particulate removal efficiency of 60% - References by EPA-450/3-88-008 (September 1988). 60% is conservative in comparison to the TCEQ guidance in Rock Crushing Draft Document Feb 2002, page 16 control efficiency of 90-100%.

$147,000 \text{ lbs bird/hr} \times (1 \text{ ton}/2000 \text{ lbs}) = 73.5 \text{ tons bird/hr}$

$73.5 \text{ tons bird/hr} \times (4.16\text{e-}6 \text{ lbs of PM/ton of bird}) \times (1 \text{ ton}/2000 \text{ lbs}) \times (8,760 \text{ hrs/yr}) = 0.13 \text{ tpy PM total}$

Live Hang		PM	PM10	PM2.5	units	
		4.16E-04	4.16E-04	4.16E-04	lbs/ton processed	Union City 4/15/25 Stack Test
	lbs/hr					
Live Hang	151,281	0.14	0.14	0.14	tpy	
assume 8,760 hrs/yr		0.03	0.03	0.03	lbs/hr	
		0.14	0.14	0.14	tpy	

Chemical Name	Manufacturer	MSDS Date	Product Code	Regulatory Forms	Specific Gravity	Density (lbs/gal)	Usage Rates (gal/yr)	Actual VOC (tpy/yr)	Actual HAP (tpy)	VOC%	HAP%
Vertex CSS-10	Vertex	10/6/1998	Vertex CSS-10	SDS		0		0.00	0.00	0%	0
Chemstation 30169 Foam	Chemstation	--	30169	Chem Supplier			610	0.00	0.00	0%	0
Chemstation 4564 Scrub Soap	Chemstation	--	4564	Chem Supplier	1.031	8.59854	4435	1.91	0.00	10%	0
Chemsan HQ Sanitizer	Chemstation	--	CHEMSANHQ	Chem Supplier	0.994	8.28996	275	0.11	0.00	10%	0
Chemstation 3260 CIP	Chemstation	--	3260	Chem Supplier			580	0.00	0.00	0%	0
Chemstation 9522 acid	Chemstation	--	9522	Chem Supplier	1.122	9.35748	5930	0.28	0.00	1%	0
Chem Foam 30422	Chemstation	--	30422	Chem Supplier			38230	0.00	0.00	0%	0
Degreaser 4694	Chemstation	--	4694	Chem Supplier			1925	0.00	0.00	0%	0
Foaming Chlorinated Cleaner 35123	Chemstation	--	35123	Chem Supplier			19035	0.00	0.00	0%	0
FoamSan	Chemstation	--	0300	Chem Supplier			825	0.00	0.00	0%	0
Off All Cleaner	Chemstation	--	3552	Chem Supplier			1785	0.00	0.00	0%	0
Chemstation Sonny Lube	Chemstation	--	Sonny Lube	Chem Supplier	0.76	6.3384	110	0.00	0.00	0%	0
Chemstation 3020	Chemstation	2/16/2024	3020	SDS			31834	0.00	0.00	0%	0
Ultra Activator	Chemstation (Sterilex)	--	CS3540055	Chem Supplier			55	0.00	0.00	0%	0
Chem Free Flow Drain	Chemsearch	4/18/2022	12078797	SDS	1.03	8.5902	240	4.12E-03	0.00	0.40%	0
CLNR,DEGRSR,NON TOXIC,BIO DEGRD,55GAL/DR	Sunshine Makers	3/12/2024	13008	SDS			170	0.00	0.00	0%	0
CLNR,FOAMIGHT	AFCO	7/1/2025	AF8509F	SDS	1.07	8.9238	715	0.38	0.00	12%	0
CLNR,POT/PAN,SANITIZER 21,4GAL/CS	HILL MFG Co	5/30/2025	HIL0358106	SDS	0.994	8.29	8	9.95E-04	0.00	3%	0
SPRY,LIQ,DISINFECT,END BAC II,15OZ	Johnson Wax (Diversey)	11/15/2024	4832	SDS	0.82	6.8388	2.808	5.86E-03	0.00	61%	0
Total Actual								2.69	0.00		
Total PTE (based on 2.5 times actual)								6.73	2.50		

Note, highest usage from Chemstation or SAP, where applicable for CY24

PTE is based on 2.5 times actual. PTE for HAPs is assumed at 2.5 tpy to account for any HAPs that may be in future cleaners or sanitizers

Haul Roads
Equity Group - Kentucky Division LLC
Albany, Kentucky

The facility's Franklin Ky operation holds a KY Air Permit and has similar grain handling and haul road length as the Albany, KY facility. The emission factors for haul roads from the Franklin air permit (AI NO 3969) for the Franklin emission Point 14 is 0.0453 pounds of PM10 per ton grain processed and 0.078 pounds of PM per ton grain processed with 90% control for dust suppression methods.

For purposes of this permit, the Albany KY facility will use the following factors:

	PM	PM10	PM2.5 Note 1
grain transfer per year	100,000	100,000	100,000
grain transfer per hour (average)	11.4	11.4	11.4
PM factor lbs/ton grain	0.078	0.0453	0.021
pounds per hour uncontrolled	0.8904	0.5171	0.2397
hr/yr	8760	8760	8760
lbs/yr	7800	4530	2100
lbs/ton	2000	2000	2000
Tons per year uncontrolled	3.90	2.27	1.05
Pounds per hour controlled (assume 90%)	0.089	0.005	0.002
hr/yr controlled	8760	8760	8760
lbs/yr controlled	780	39.7	18.4
lbs/ton	2000	2000	2000
tons/year controlled	0.39	0.02	0.01

Note 1 - assumed 50% of PM10 is PM2.5



September 9, 2022

Julian Breckinridge
Kentucky Division for Air Quality
Minerals Section Supervisor
300 Sower Boulevard, 2nd Floor
Frankfort, KY 40601

RE: *Keystone Foods LLC – Albany Processing*
Agency Interest #: 856
Insignificant Activity Permit Inclusion F-20-001; KY EIS: 21-053-00018

To Mr. Breckinridge:

Keystone Foods, LLC poultry processing facility located in Albany, KY installed three unpressurized (3) bulk peracetic acid (PAA) tanks; 2 @2500 gal installed in 2016 and 1 @3300 gal installed in 2019. These tanks were inadvertently left off the insignificant activities list in the 2020 renewal application. The vapor pressure at ambient conditions is less than the insignificant activity threshold for “Storage vessels having less than 10,567 gallons capacity that contain petroleum or organic liquids with a vapor pressure of 1.5 psia or less at storage temperature”. Tyson is requesting the inclusion of these three tanks into the insignificant activities list of the current air permit F-20-001.

If you have any questions or comments about the information presented in this letter, please do not hesitate to call Mr. Jason York at (606) 387-2226; jason.york@tyson.com, Rechelle Hollowaty at (479) 290-2506; Rechelle.Hollowaty@tyson.com or myself at (606) 387-2303, Tim.Esslinger@tyson.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tim Esslinger', with a long horizontal flourish extending to the right.

Tim Esslinger
Complex Manager

Attachments

Cc: Rechelle Hollowaty, Tyson Foods, Inc.
Jason York, Tyson Foods, Inc.
Todd Cartwright, Tyson Foods, Inc.

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	<h3 style="margin: 0;">DEP7007AI</h3> <h4 style="margin: 0;">Administrative Information</h4> ___ Section AI.1: Source Information ___ Section AI.2: Applicant Information ___ Section AI.3: Owner Information ___ Section AI.4: Type of Application ___ Section AI.5: Other Required Information ___ Section AI.6: Signature Block ___ Section AI.7: Notes, Comments, and Explanations	<h4 style="margin: 0;">Additional Documentation</h4> ___ Additional Documentation attached
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Source Name: Keystone Foods, LLC - Albany Processing
KY EIS (AFS) #: 21- 053-00018
Permit #: F-20-001
Agency Interest (AI) ID: 856
Date: September 9, 2022

Section AI.1: Source Information

Physical Location Address:	Street:	<u>2294 Highway 90W</u>		
	City:	<u>Albany</u>	County:	<u>Clinton</u>
			Zip Code:	<u>42602</u>
Mailing Address:	Street or P.O. Box:	<u>2292 Highway 90W</u>		
	City:	<u>Albany</u>	State:	<u>KY</u>
			Zip Code:	<u>42602</u>

Standard Coordinates for Source Physical Location

Longitude: 36.758655 (decimal degrees) **Latitude:** -85.179577 (decimal degrees)

Primary (NAICS) Category: Poultry Processing **Primary NAICS #:** 311615

Classification (SIC) Category: Poultry Processing and Slaughter **Primary SIC #:** 2015

Briefly discuss the type of business conducted at this site:
Poultry Processing and Slaughter

Description of Area Surrounding Source:	<input checked="" type="checkbox"/> Rural Area <input type="checkbox"/> Industrial Park <input type="checkbox"/> Residential Area	<input type="checkbox"/> Urban Area <input type="checkbox"/> Industrial Area <input type="checkbox"/> Commercial Area	Is any part of the source located on federal land?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Employees:	~1500
--	---	---	---	--	-----------------------------	-------

Approximate distance to nearest residence or commercial property: 600-700 ft **Property Area:** 611 acres **Is this source portable?** Yes No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A
Solid Waste:	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A
RCRA:	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A
UST:	<input type="checkbox"/> Currently Hold	<input type="checkbox"/> Need	<input checked="" type="checkbox"/> N/A

Type of Regulated Waste Activity:
 Mixed Waste Generator
 Generator
 Recycler
 Other: _____
 U.S. Importer of Hazardous Waste
 Transporter
 Treatment/Storage/Disposal Facility
 N/A

Section AI.2: Applicant Information

Applicant Name: Keystone Foods, LLC

Title: (if individual) _____

Mailing Address: **Street or P.O. Box:** _____

City: Albany **State:** KY **Zip Code:** 42602

Email: (if individual) _____

Phone: _____

Technical Contact

Name: Rechelle Hollowaty

Title: Sr. Environmental Manager

Mailing Address: **Street or P.O. Box:** 7136 Harrison Hill Trail

City: Chanhassen **State:** MN **Zip Code:** 55317

Email: Rechelle.Hollowaty@tyson.com

Phone: 479-290-2506

Air Permit Contact for Source

Name: Jason York

Title: Complex Environmental Manager

Mailing Address: **Street or P.O. Box:** 2294 Highway 90W

City: Albany **State:** KY **Zip Code:** 42602

Email: jason.york@tyson.com

Phone: 606-387-2226

Section AI.3: Owner Information

Owner same as applicant

Name: _____

Title: _____

Mailing Address: **Street or P.O. Box:** _____

City: _____ **State:** _____ **Zip Code:** _____

Email: _____

Phone: _____

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
<u>Grow-Out Holdings LLC</u>	<u>100%</u>
_____	_____
_____	_____

Section AI.4: Type of Application

Current Status: Title V Conditional Major State-Origin General Permit Registration None

Name Change Initial Registration Significant Revision Administrative Permit Amendment

Requested Action: Renewal Permit Revised Registration Minor Revision Initial Source-wide Operating Permit
(check all that apply)

502(b)(10)Change Extension Request Addition of New Facility Portable Plant Relocation Notice

Revision Off Permit Change Landfill Alternate Compliance Submittal Modification of Existing Facilities

Ownership Change Closure

Requested Status: Title V Conditional Major State-Origin PSD NSR Other: _____

Is the source requesting a limitation of potential emissions?

Yes No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
<input type="checkbox"/> Particulate Matter	_____	<input type="checkbox"/> Single HAP	_____
<input type="checkbox"/> Volatile Organic Compounds (VOC)	_____	<input type="checkbox"/> Combined HAPs	_____
<input type="checkbox"/> Carbon Monoxide	_____	<input type="checkbox"/> Air Toxics (40 CFR 68, Subpart F)	_____
<input type="checkbox"/> Nitrogen Oxides	_____	<input type="checkbox"/> Carbon Dioxide	_____
<input type="checkbox"/> Sulfur Dioxide	_____	<input type="checkbox"/> Greenhouse Gases (GHG)	_____
<input type="checkbox"/> Lead	_____	<input type="checkbox"/> Other	_____

For New Construction:

Proposed Start Date of Construction:
(MM/YYYY)

2016 and 2019

Proposed Operation Start-Up Date: (MM/YYYY)

2016 and 2019

For Modifications:

Proposed Start Date of Modification:
(MM/YYYY)

Proposed Operation Start-Up Date: (MM/YYYY)

Applicant is seeking coverage under a permit shield. Yes No

Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

- DEP7007A Indirect Heat Exchangers and Turbines
- DEP7007B Manufacturing or Processing Operations
- DEP7007C Incinerators and Waste Burners
- DEP7007F Episode Standby Plan
- DEP7007J Volatile Liquid Storage
- DEP7007K Surface Coating or Printing Operations
- DEP7007L Mineral Processes
- DEP7007M Metal Cleaning Degreasers
- DEP7007N Source Emissions Profile
- DEP7007P Perchloroethylene Dry Cleaning Systems
- DEP7007R Emission Offset Credit
- DEP7007S Service Stations
- DEP7007T Metal Plating and Surface Treatment Operations
- DEP7007V Applicable Requirements and Compliance Activities
- DEP7007Y Good Engineering Practice and Stack Height Determination
- DEP7007AA Compliance Schedule for Non-complying Emission Units
- DEP7007BB Certified Progress Report
- DEP7007CC Compliance Certification
- DEP7007DD Insignificant Activities
- DEP7007EE Internal Combustion Engines
- DEP7007FF Secondary Aluminum Processing
- DEP7007GG Control Equipment
- DEP7007HH Haul Roads
- Confidentiality Claim
- Ownership Change Form
- Secretary of State Certificate
- Flowcharts or diagrams depicting process
- Digital Line Graphs (DLG) files of buildings, roads, etc.
- Site Map
- Map or drawing depicting location of facility
- Safety Data Sheet (SDS)
- Emergency Response Plan
- Other: _____

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.



 Authorized Signature

 Tim Esslinger
 Type or Printed Name of Signatory

0/9/22

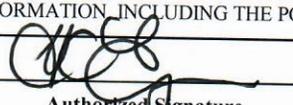
 Date

 Complex Manager
 Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	<h2 style="margin: 0;">DEP7007DD</h2> <h3 style="margin: 0;">Insignificant Activities</h3> <p style="margin: 0;">___ Section DD.1: Table of Insignificant Activities</p> <p style="margin: 0;">___ Section DD.2: Signature Block</p> <p style="margin: 0;">___ Section DD.3: Notes, Comments, and Explanations</p>
Source Name:	<u>Keystone Foods, LLC - Albany Processing</u>
KY EIS (AFS) #:	21- <u>053-00018</u>
Permit #:	<u>F-20-001</u>
Agency Interest (AI) ID:	<u>856</u>
Date:	<u>September 9, 2022</u>

Section DD.1: Table of Insignificant Activities				
Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
1	Bulk PAA Tank (3300 gal)	na	Insignificant Activity #2: Storage vessels having less than 10,567 gallons capacity that contain petroleum or organic liquids with a vapor pressure of 1.5 psia or less at storage temperature	3.65E-02 ton VOC/year as highest emitting criteria pollutant
2	Bulk PAA Tank x 2 (2500 gal)	na		6.33E-02 ton VOC/year as highest emitting criteria pollutant

Section DD.2: Signature Block	
I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.	
By:  _____ Authorized Signature	<u>8/9/22</u> _____ Date
_____ Type/Print Name of Signatory	_____ Title of Signatory

Tank Summary for PTE

Site: Albany KY Keystone, Albany Processing

Equations for this site: After 2019 AP-42 revisions H/D ratio: calculated

Tank ID	Throughput (gal)	Estimated standing losses (lbs)	Estimated working losses (lbs)	Total estimated emissions (lbs)	Total estimated emissions (tons)
PAA Tank 1 3300 gal	100000.0008	15.265786	57.764379	73.030165	0.036515083
PAA Tank 2 2500 gal	100000.0008	11.577549	51.714412	63.291961	0.031645981
PAA Tank 3 2500 gal	100000.0008	11.577549	51.714412	63.291961	0.031645981
					0.099807044

Tank Dimensions

3300 gal 6ft x 16 ft horizontal
2500 gal each 6 ft x 12 ft horizontal



TECHNICAL MEMORANDUM

To: Colby Rocha
Project Manager
Enviro Tech Chemical Services, Inc.

Date: October 17th, 2019

From: Ray Kapahi *RK*
Air Permitting Specialists
Tel: 916-687-8352
E-Mail: ray.kapahi@gmail.com

Copies: Carter Redding - Condor

Subject: Estimate of 30% Peracetic Acid Vapor Pressure Acid

We have calculated the vapor pressure for to ChemSan RBR-XL to determine if an offsite consequence analysis (OCA). We assumed the following composition of ChemSan RBR-XL based on the following composition:

Chemical	Percentage in ChemSan RBR-XL	Molecular Weight	Mol Fraction
Peracetic Acid:	30%	76	16.61%
Hydrogen Peroxide:	6.0%	34	3.16%
Acetic Acid:	45%	60	31.56%
Water	19%	18	44.40%
Other constituents	<1%		

The vapor pressure of pure peracetic acid is 13.9 mmHg at 25°C¹. The mole fraction of peracetic is estimated to be 0.1661. On this basis, the vapor pressure at 25°C is estimated to be 2.31 mmHg. This is calculated by using the mol fraction of peracetic acid as a fraction of the total as described in the OCA Guidance. Guidance requires a temperature correction for worst case modeling. At 40°C, the temperature correction is 2.3². The vapor pressure at 40°C is estimated to be 5.31 mm Hg.

Since the vapor pressure is below 10 mmHg at 25°C and at 40°C, ChemSan RBR-XL (30% PAA) would not be subject to EPA's OCA requirements per 40 CFR 68.115(b)(1).

¹ EPA Offsite Consequence Analysis Guidance Appendix B.1 Exhibit B-2 pg B-5 April 15, 1999.

² Ibid Appendix B.1 Exhibit B-4 pg B-9.

CHEMSTATION ALABAMA 3021 DUBLIN CIRCLE BESSEMER, AL 35020

SAFETY DATA SHEET**SECTION 1 - IDENTIFICATION**

Product Identifier: CHEMSAN RBR-XL
Product Use: FDA uses.
Chemical Family: Oxidizer
Dilution Information: 0.010%-0.38% (v/v)

Product Code: H848**CHEMSTATION ALABAMA**

3021 DUBLIN CIRCLE
 BESSEMER, AL 35020
 (205) 432-2290

24 Hr. Emergency Tel.#: 800-424-9300**SECTION 2 - HAZARDS IDENTIFICATION****Classification of the Product AS SOLD:**

Skin Corrosion - Category 1
 Serious Eye Damage - Category 1
 Oxidizing Liquids - Category 2
 Corrosive to Metals - Category 1
 Organic Peroxides - Type F
 Acute Toxicity - Oral Category 4
 Acute Toxicity - Dermal Category 4
 Hazardous to the Aquatic Environment, Acute Toxicity Category 2

**Signal Word:** DANGER**GHS label elements for Product AS SOLD****Hazard Statements:**

Causes severe skin burns and eye damage
 May intensify fire; oxidizer
 May be corrosive to metals
 Heating may cause fire
 Harmful if swallowed
 Harmful in contact with skin
 Toxic to aquatic life

Precautionary Statements:**Prevention**

Wear protective gloves/protective clothing/eye protection/face protection.
 Wash hands thoroughly after handling
 Keep away from heat/sparks/open flames/hot surfaces - No smoking.
 Keep/Store away from clothing/combustible materials.
 Do not eat, drink or smoke when using this product.
 Keep only in original container.
 Take any precaution to avoid mixing with combustibles.

Response**IF SWALLOWED:** Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.**IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing.**IF ON SKIN (or hair):** Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a POISON CENTER or doctor/physician if you feel unwell.**IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

For specific treatment see Section 4 First Aid.

Wash contaminated clothing before reuse.

In case of fire: Use dry sand, dry chemical, or alcohol resistant foam for extinction.

Absorb spillage to prevent material damage.

CHEMSTATION ALABAMA 3021 DUBLIN CIRCLE BESSEMER, AL 35020

SAFETY DATA SHEET**Storage**

It is recommended to store this product at temperatures where the bulk liquid will not exceed 86°F / 30°C. Keep cool. Store away from other materials. Protect from sunlight.
Store locked up. Store in a corrosive resistant container with a resistant inner liner.

Disposal

Dispose of contents/container in accordance with local regulations.

Hazards not Otherwise Classified:

No other hazards classified.

Classification of the Product AT USE DILUTION:

Acute Toxicity - Oral Category 5

GHS label elements for Product AT USE DILUTION

Signal Word: NONE

Hazard Pictograms: NONE

Hazard Statements:

May be harmful if swallowed

Precautionary Statements:**Prevention**

Wash hands thoroughly after handling

Do not eat, drink or smoke when using this product.

Response

IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

Disposal

Dispose of contents/container in accordance with local regulations.

Hazards not Otherwise Classified:

No other hazards classified.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS**Product AS SOLD**

Ingredient	Synonym	CAS Number	Concentration
HYDROGEN PEROXIDE	H2O2	7722-84-1	5-10%
ACETIC ACID	NONE	64-19-7	40-50%
PEROXYACETIC ACID	PAA	79-21-0	24-30%

Product AT USE DILUTION

Ingredient	Synonym	CAS Number	Concentration
HYDROGEN PEROXIDE	H2O2	7722-84-1	75-770 ppm
PEROXYACETIC ACID	PAA	79-21-0	20-2000 ppm

SECTION 4 - FIRST-AID MEASURES**Product AS SOLD**

Inhalation: Remove source of exposure or move person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER/doctor. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. If direct contact during rescue breathing poses a threat to the first aid provider, "Avoid mouth-to-mouth contact by using a barrier device."

Skin Contact: Take off immediately contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Rinse skin with lukewarm, gently flowing water/shower with a flushing duration of 30 minutes. Immediately call POISON CENTER/doctor. Wash contaminated clothing before re-use.

Eye Contact: Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 30 minutes. Take care not to rinse contaminated water into the unaffected eye or into the face. Immediately call a POISON CENTER/doctor.

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SAFETY DATA SHEET

Ingestion: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. If vomiting occurs naturally, lie on your side, in the recovery position.

Most Important Symptoms and Effects, both Acute and Delayed: Causes severe skin burns and eye damage, burning of the mouth, throat, and esophagus.

Indication of any Immediate Medical Attention and Special Treatment Needed: Treat symptomatically.

Product AT USE DILUTION:

Inhalation: Seek medical attention if symptoms occur.

Skin Contact: Rinse with plenty of water.

Eye Contact: Rinse with plenty of water.

Ingestion: Rinse mouth. Immediately call a poison center/doctor if symptoms occur.

Most Important Symptoms and Effects, both Acute and Delayed: Irritation of the gastrointestinal tract.

Indication of any Immediate Medical Attention and Special Treatment Needed: Treat symptomatically

SECTION 5 - FIRE-FIGHTING MEASURES

Product AS SOLD:

Extinguishing Media: Dry powder, foam, carbon dioxide, water spray, sand. Do NOT use heavy water stream.

Special hazards arising from the substance or mixture: Non combustible. May give off irritating or toxic fumes (or gases) in a fire.

Flammability classification (OSHA 29 CFR 1910.106) (Hazcom 2012): Non flammable

Hazardous Combustion Products: May cause fire and explosions when in contact with incompatible materials.

Special protective equipment and precautions for firefighters: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus.

Product AT USE DILUTION:

Extinguishing Media: Material is not flammable.

Special hazards arising from the substance or mixture: No special hazards known.

Flammability classification (OSHA 29 CFR 1910.106) (Hazcom 2012): Non flammable

Hazardous Combustion Products: None known.

Special protective equipment and precautions for firefighters: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Product AS SOLD:

Personal precautions, protective equipment and emergency procedures: Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Methods and materials for containment and cleaning up: SMALL SPILLS (less than 1 gallon): Neutralize with soda ash or cover with dry earth, sand or other non-combustible material, place into loosely covered plastic containers for later disposal. If neutralized, material can be diluted into drain. LARGE SPILL: Restrict access to area until completion of clean up. Prevent liquid from entering sewers or waterways. Stop or reduce leak if safe to do so. Dike with inert material (sand, earth, etc.). Collect into plastic containers for disposal. Ensure adequate decontamination of tools and equipment following clean up.

Special spill response procedures: Collect spills in plastic containers only. Prevent from entering sewers, waterways, or low areas.

Product AT USE DILUTION:

Personal precautions, protective equipment and emergency procedures: Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Methods and materials for containment and cleaning up: SMALL SPILLS (less than 1 gallon): Dike small spills with inert material (sand, earth, etc.). Collect in plastic containers only. Wash area and let dry. LARGE SPILL: Should be diked with sand ahead of spill. Collect in plastic containers only. Ensure adequate decontamination of tools and equipment following clean up.

Special spill response procedures: Collect spills in plastic containers only. Prevent from entering sewers, waterways, or low areas.

SECTION 7 - HANDLING AND STORAGE

Product AS SOLD:

Precautions for Safe Handling: Wear at least chemical resistant gloves and eye protection, face shield, and chemical resistant garments when handling, moving or using this product. Do not contaminate water, food, or feed by storage or disposal.

Conditions for Safe Storage: It is recommended to store this product at temperatures where the bulk liquid will not exceed 86°F / 30°C. Store in a cool, dry, well ventilated place away from direct sunlight. Keep container closed when not in use.

Incompatible Materials: Avoid strong reducing agents, soft metals, heat and bases (unless product has been diluted to less than 1000 ppm, then bases may be used to gradually adjust to a pH of less than 9).

CHEMSTATION ALABAMA 3021 DUBLIN CIRCLE BESSEMER, AL 35020

SAFETY DATA SHEET**Product AT USE DILUTION:****Precautions for Safe Handling:** Do not swallow or ingest. Wash hands thoroughly after handling.**Conditions for Safe Storage:** Store in a cool, dry, well ventilated place away from direct sunlight. Keep container closed when not in use.**Incompatible Materials:** Avoid strong reducing agents, soft metals, heat and bases.**SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION****Product AS SOLD:****EXPOSURE LIMITS:**

CHEMICAL NAME	CAS NO.	TWA	OSHA PEL	ACGIH TLV	
			STEL/CEILING	TWA	STEL
ACETIC ACID	64-19-7	10 ppm	15 ppm/40 ppm (CalOSHA)	10 ppm	15 ppm
HYDROGEN PEROXIDE	7722-84-1	1 ppm	1 ppm/N/A (CalOSHA)	1 ppm	N/A
PERACETIC ACID	79-21-1	N/A	N/A	N/A	0.4 ppm

Ventilation and engineering measures: Forced air, local exhaust, or open air is adequate.**Respiratory Protection:** In case of confined spaces or high levels encountered in the air, wear self contained breathing apparatus.**Skin Protection:** Wear chemical resistant gloves and chemical resistant garments when handling, wash garments before re-use.**Eye/Face Protection:** Wear chemical goggles; also wear a face shield if splashing hazard exists.**Other Protective Equipment:** Eye wash facility and emergency shower should be in close proximity.**General Hygiene Conditions:** Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industry hygiene and safety practice.**Product AT USE DILUTION:****Ventilation and engineering measures:** No special equipment needed.**Respiratory Protection:** No respiratory personal protective equipment (PPE) required.**Skin Protection:** No personal protective equipment (PPE) required.**Eye/Face Protection:** No personal protective equipment (PPE) required.**Other Protective Equipment:** No special protective equipment required.**General Hygiene Conditions:** Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES****Product AS SOLD:****Appearance:** Clear colorless liquid**Odor:** Vinegar odor**pH:** <1 (1:10)**Melting/Freezing point:** <-8°C / <17°F**Initial boiling point and boiling range:** No information available**Flash Point:** 147-190° F / 64-88 ° C**Flammability (solid, gas):** Non flammable**Vapor Pressure (mm Hg):** 25**Specific gravity:** 1.12-1.13 g/mL**Solubility in Water:** Complete**Auto ignition Temperature:** >518° F / >270° C**Decomposition temperature:** No information available**Viscosity:** 5-15 cSt at 20°C / 68°F**Volatiles (% by weight):** >99**Volatile organic Compounds (VOC's):** No information available**Product AT USE DILUTION:****Appearance:** Clear colorless liquid**Odor:** Slight vinegar odor**pH:** 3.0-6.0

CHEMSTATION ALABAMA 3021 DUBLIN CIRCLE BESSEMER, AL 35020

SAFETY DATA SHEET

SECTION 10 - STABILITY AND REACTIVITY

Product AS SOLD:

Reactivity: Reactive with bases, metals, reducing agents and combustible materials

Chemical Stability: Stable for up to 1 year when stored under normal conditions.

Possibility of Hazardous Reactions: May react with incompatible materials

Conditions to Avoid: Incompatible materials and high temperatures

Incompatible Materials: Reactive with bases, metals, reducing agents and combustible materials

Solutions of sodium and/or potassium hydroxide may be mixed with or added to water containing peroxyacetic acid solutions (<4000 ppm) with no known adverse health, safety or physical concerns. No known side reactions or noxious by-products will occur.

Hazardous Decomposition Products: Oxygen which supports combustion.

Product AT USE DILUTION:

Reactivity: Reactive with bases, metals, reducing agents and combustible materials

Chemical Stability: Stable for up to 8-24 hours in distilled water. Chemical stability may be drastically reduced if hard water is used.

Possibility of Hazardous Reactions: May react with incompatible materials

Conditions to Avoid: Incompatible materials and high temperatures

Incompatible Materials: Reactive with bases, metals, reducing agents and combustible materials

Hazardous Decomposition Products: None known.

SECTION 11 - TOXICOLOGICAL INFORMATION

Product AS SOLD:

Information on likely routes of exposure:

Routes of entry - inhalation: YES

Routes of entry - skin & eye: YES

Routes of entry - ingestion: YES

Routes of entry - skin absorption: NO

Potential Health Effects:

Signs and symptoms of short term (acute) exposure:

Inhalation: May cause irritation to respiratory system in mist/vapor form.

Ingestion: Corrosive! Swallowing causes severe burns of mouth, throat, and stomach. Severe scarring of tissue, corrosion, permanent tissue destruction and death may result. Symptoms may include severe pain, nausea, vomiting, diarrhea, shock, hemorrhaging and/or fall in blood pressure. Damage may appear days after exposure.

Skin: Corrosive! Contact with skin causes irritation or severe burns and scarring with greater exposures.

Eye: Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.

Potential Chronic Health Effects:

Mutagenicity: Not known to have mutagenic effects in humans or animals.

Carcinogenicity: No components are listed as carcinogens by ACGIH, IARC, OSHA, or NTP.

Reproductive effects: No known reproductive effects in humans or animals.

Sensitization to material: Not a known sensitizer in humans or animals.

Specific target organ effects: No known specific target organ effects.

Medical conditions aggravated by overexposure: No information available

Toxicological data: The calculated ATE values for this mixture are:

ATE oral = 640 mg/kg

ATE dermal = 1905 mg/kg

ATE inhalation = >20 mg/L

Product AT USE DILUTION:

Information on likely routes of exposure:

Routes of entry - inhalation: NO

Routes of entry - skin & eye: YES

Routes of entry - ingestion: YES

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SAFETY DATA SHEET

Routes of entry - skin absorption: NO

Potential Health Effects:

Signs and symptoms of short term (acute) exposure:

Inhalation: Respiratory irritant at higher range use levels

Ingestion: May cause irritation to the digestive system.

Skin: Not a skin irritant but may cause skin irritation on some individuals if not washed from skin. Rinse hands thoroughly if exposed.

Eye: Not an eye irritant.

Potential Chronic Health Effects:

Mutagenicity: No known mutagenic effects.

Carcinogenicity: No components are listed as carcinogens by ACGIH, IARC, OSHA, or NTP.

Reproductive effects: No known reproductive effects.

Sensitization to material: No expected to cause sensitization.

Specific target organ effects: No information available

Medical conditions aggravated by overexposure: No information available.

Toxicological data: The calculated ATE values for this mixture are:

ATE oral = 3773 mg/kg

ATE dermal = >10,000 mg/kg

ATE inhalation = >20 mg/L

SECTION 12 - ECOLOGICAL INFORMATION

Product AS SOLD:

Ecotoxicity: May be harmful to aquatic life.

Persistence and degradability: Not expected to persist. Expected to readily biodegrade.

Bioaccumulation potential: Not expected to bio accumulate.

Mobility in soil: No information available

Product AT USE DILUTION

Ecotoxicity: No information available.

Persistence and degradability: No information available.

Bioaccumulation potential: No information available.

Mobility in soil: No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Product AS SOLD:

Handling for disposal: Do not contaminate water, food, or feed by storage and/or disposal. When handling refer to protective measures listed in sections 7 and 8. Empty residue from containers, rinse container well.

Method of disposal: Dispose of in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.

RCRA: If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of: Corrosivity D002

Product AT USE DILUTION:

Handling for disposal: Do not contaminate water, food, or feed by storage and/or disposal. When handling refer to protective measures listed in sections 7 and 8. Empty residue from containers, rinse container well.

Method of disposal: Dispose of in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.

SECTION 14 - TRANSPORTATION INFORMATION

Certain shipping modes or package sizes may have exceptions from the transport regulations. The classification provided may not reflect those exceptions and may not apply to all shipping modes or package sizes.

Please note the GHS and DOT Standards are NOT identical and therefore can have varying classifications

CHEMSTATION ALABAMA 3021 DUBLIN CIRCLE BESSEMER, AL 35020

SAFETY DATA SHEET**Product AS SOLD:****US 49 CFR/DOT/IATA/IMDG Information:****UN No.:** 3109**UN Proper Shipping Name:** Organic peroxide type F, liquid (<=30% peracetic acid with <=10% hydrogen peroxide)**Transportation hazard class(es):** 5.2 (8)**Environmental hazards:** No hazards identified.**SECTION 15 - REGULATORY INFORMATION****Product AS SOLD:****US Federal Information:****FDA information:** This product complies with FCN 1419, 1738 and 1806 as well as directive list 7120.1 by the FSIS.**TSCA information:** All components are listed on the TSCA inventory.**US CERCLA Reportable quantity (Hazardous substance RQ):** Acetic acid has a RQ of approximately 10000 lbs of as is chemical.**US EPCRA Reportable quantity (Extremely hazardous substance RQ):** Peracetic acid has a RQ of approximately 2200 lbs. of as is chemical.**Clean Air Act Section 112(r) Threshold Quantity (TQ):** Peracetic acid has a TQ of approximately 45000 lbs. of as is chemical.**SARA Title III:** Reactivity Hazard, Acute Health Hazard

US State Right to Know Laws:

SECTION 16 - OTHER INFORMATION**Product AS SOLD:**

NFPA	Health Hazards 3	Flammability 1	Stability 1	Special Hazards OX, COR
HMIS	Health Hazards 3	Flammability 1	Physical Hazard 1	Personal Protection C
NFPA/HMIS Ratings Legend		Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0 Special hazards: OX = Oxidizer; COR = Corrosive Personal Protection = C (safety glasses, gloves, protective apron)		

Product AT USE DILUTION:

NFPA	Health Hazards 2	Flammability 0	Stability 0	Special Hazards NONE
HMIS	Health Hazards 2	Flammability 0	Physical Hazard 0	Personal Protection 0
NFPA/HMIS Ratings Legend		Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0 Personal Protection = 0 (none)		

Legend:**SARA:** The Superfund Amendments and Reauthorization Act**RCRA:** Resource Conservation and Recovery Act**TSCA:** Toxic Substances Control Act**CFR:** Code of Federal Regulations**DOT:** Department of Transportation**ATE:** Acute Toxicity Estimate**Preparation date:** 9/3/2019

Source	EU	NOx lbs/hr	CO lbs/hr	PM lbs/hr	PM10 lbs/hr	PM2.5 lbs/hr	SOx lbs/hr	VOC lbs/hr	Lead lbs/hr	CO2e lbs/hr	HAP lbs/hr	NOx tpy	CO tpy	PM tpy	PM10 tpy	PM2.5 tpy	SOx tpy	VOC tpy	Lead tpy	CO2e tpy	HAP tpy
Kewanee Boiler #3	EU24	2.37	1.40	0.13	0.13	0.13	0.27	0.15	8.35E-06	2,331	0.03	10.39	6.14	0.56	0.56	0.56	1.20	0.64	3.66E-05	10,211	0.14
Victory Boiler #4	EU25	2.99	1.76	0.49	0.16	0.16	0.34	0.18	1.05E-05	3,348	0.04	13.09	7.70	2.16	0.70	0.70	1.50	0.80	4.58E-05	14,664	0.17
Kemco Water Heater #1	EU03	1.56	0.92	0.08	0.08	0.08	0.18	0.10	5.50E-06	1,536	0.02	6.85	4.05	0.37	0.37	0.37	0.79	0.42	2.41E-05	6,726	0.09
Kemco Water Heater #2	EU04	1.56	0.92	0.08	0.08	0.08	0.18	0.10	5.50E-06	1,536	0.02	6.85	4.05	0.37	0.37	0.37	0.79	0.42	2.41E-05	6,726	0.09
Flare	EU08	1.80	1.51	0.14	0.14	0.14	0.10	0.10	0.00E+00	2,108	0.00	7.88	6.62	0.60	0.60	0.60	0.43	0.43	0.00E+00	9,232	0.00
Misc Small Heaters	--	7.79	4.60	0.42	0.42	0.42	0.90	0.48	2.74E-05	7,651	0.10	34.11	20.16	1.84	1.84	1.84	3.94	2.10	1.20E-04	33,511	0.45
Fire Pump	EU07	3.63	0.78	0.26	0.26	0.26	0.24	0.29	0.00E+00	135	0.01	0.91	0.20	0.06	0.06	0.06	0.06	0.07	0.00E+00	34	1.32E-03
Fire Pump Diesel Tank	T01	-	-	-	-	-	-	7.94E-06	-	-	-	-	-	-	-	-	-	3.48E-05	-	-	-
Truck Unloading	EU09	-	-	1.81	0.62	0.10	-	-	-	-	-	-	-	7.91	2.71	0.43	-	-	-	-	-
Auger Conveyor to Silo	EU10	-	-	0.70	0.39	0.07	-	-	-	-	-	-	-	3.05	1.70	0.29	-	-	-	-	-
Silo Transfer Conveyor	EU11	-	-	0.70	0.39	0.07	-	-	-	-	-	-	-	3.05	1.70	0.29	-	-	-	-	-
Silo #1	EU12	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Silo #2	EU13	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Silo #3	EU14	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Silo #4	EU15	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Auger Conveyor from Silo #1	EU16	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Auger Conveyor from Silo #2	EU17	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Auger Conveyor from Silo #3	EU18	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Auger Conveyor from Silo #4	EU19	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Truck Loadout	EU20	-	-	0.98	0.33	0.06	-	-	-	-	-	-	-	4.30	1.45	0.25	-	-	-	-	-
Live Hang	EU22A/B	-	-	0.96	0.96	0.96	-	-	-	-	-	-	-	4.18	4.18	4.18	-	-	-	-	-
Haul Roads	-	-	-	0.089	0.005	0.002	-	-	-	-	-	-	-	0.39	0.02	0.01	-	-	-	-	-
PAA	Fug	-	-	-	-	-	-	0.98	-	-	-	-	-	-	-	-	-	4.28	-	-	-
Cleaners and Sanitizers	Fug	-	-	-	-	-	-	1.48	-	-	-	-	-	-	-	-	-	6.50	-	-	-
Cooling Towers	INS	-	-	0.25	0.25	0.25	-	-	-	-	-	-	-	1.10	1.10	1.10	-	-	-	-	-
Total		21.70	11.91	7.65	4.67	2.84	2.21	3.86	0.00	18,643.33	0.22	80.07	48.92	32.44	19.37	11.39	8.71	15.68	0.00	81,102.11	0.95

Source	Emission Source ID	Heat Input Capacity (MMBtu/hr)	Annual Hours of Operation (hr/yr)	Natural Gas Heating Value (Btu/scf)	Hourly Natural Gas Consumption (MMscf/hr)	Propane Heating Value (Btu/gal)	Hourly Propane Consumption (Mgal/hr)	Fuel Oil Heating Value (Btu/gal)	Hourly Fuel Oil Consumption (Mgal/hr)	Biogas Heating Value (Btu/gal)	Hourly Biogas Consumption (MMscf/hr)
Kewanee Boiler #3	EU24	16.70	8,760	1,000	1.67E-02	91,500	0.18	na	na	750	2.23E-02
Victory Boiler #4	EU25	20.93	8,760	1,000	2.09E-02	91,500	0.23	140,000	0.15	750	2.79E-02
Kemco Water Heater #1	EU03	11.00	8,760	1,000	1.10E-02	91,500	0.12	na	na	na	na
Kemco Water Heater #2	EU04	11.00	8,760	1,000	1.10E-02	91,500	0.12	na	na	na	na
Flare	EU08	18.00	8,760	na	na	na	na	na	na	750	2.40E-02
Misc Small Heaters (combined)	Insign	54.81	8,760	1,000	5.48E-02	91,500	0.60	na	na	na	na

Emissions Factors

Pollutant	Secondary	Primary	Tertiary	Tertiary Biogas ⁴ before control	Tertiary Biogas ⁴ after control
	Natural Gas ¹ (lb/MMscf)	Propane ² (lb/Mgal)	Fuel Oil ³ (lb/Mgal)	(lb/MMscf)	(lb/MMscf)
NO _x	100	13	20	75	75
CO	84	7.5	5	63	63
PM	7.6	0.70	3.30	5.7	5.7
PM ₁₀	7.6	0.70	1.00	5.7	5.7
PM _{2.5}	7.6	0.70	0.25	5.7	5.7
SO ₂ ⁷	0.6	1.50	0.21	6.16	0.8
VOC	5.5	0.8	0.2	4.125	4.125
Lead	5.00E-04				
CO ₂ ⁶	117,098	12,773	22,399	87,824	87,824

- AP-42 Section 1.4, Natural Gas Combustion, Tables 1.4-1 and 1.4-2, dated July 1998.
- AP-42 Section 1.5 Liquefied Petroleum Gas Combustion, Tables 1.5-1 and 1.5-2 dated July 2008, Sulfur is assumed 15 ppm
- AP-42 Section 1.3 Fuel Oil Combustion, Tables 1.3-1 and 1.3-2 dated May 2010
- Natural Gas AP-42 1.4 emission factors was used for Biogas @ 75% natural gas values; Biogas is 75% methane and 25% CO₂.
- Potential annual emissions are based on the hourly potential emissions multiplied by 8,760 hours of operation per year.
- CO₂e factor calculated based on the emission factors for CO₂, CH₄, and N₂O from 40 CFR 98, Subpart C, Tables C-1 and C-2, and the global warming potential (GWP) for each pollutant per 40 CFR 98, Subpart A, Table A-1.
- See discussion below regarding SO_x emission factor modification to include H₂S in Biogas

Criteria Pollutant Potential Emissions from the Kewanee Boiler

Pollutant	Kewanee Natural Gas		Kewanee Propane		Kewanee Biogas		Kewanee Boiler	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	Biogas (lb/hr)	Annual (tpy)	PTE (lb/hr)	(tpy)
NO _x	1.67	7.31	2.37	10.39	1.67	7.31	2.37	10.39
CO	1.40	6.14	1.37	6.00	1.40	6.14	1.40	6.14
PM	0.13	0.56	0.13	0.56	0.13	0.56	0.13	0.56
PM ₁₀	0.13	0.56	0.13	0.56	0.13	0.56	0.13	0.56
PM _{2.5}	0.13	0.56	0.13	0.56	0.13	0.56	0.13	0.56
SO ₂	0.01	0.04	0.27	1.20	0.02	0.08	0.27	1.20
VOC	0.09	0.40	0.15	0.64	0.09	0.40	0.15	0.64
Lead	8.35E-06	3.66E-05	-	-	-	-	8.35E-06	3.66E-05
CO ₂ e	1,955.54	8,565.25	2,331.25	10,210.86	1,955.54	8,565.25	2,331.25	10,210.86

Criteria Pollutant Potential Emissions from the Victory Boiler

Pollutant	Victory Natural Gas		Victory Propane		Victory Fuel Oil		Victory Biogas		Victory Boiler	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	Fuel Oil (lb/hr)	Annual (tpy)	Biogas (lb/hr)	Annual (tpy)	PTE (lb/hr)	(tpy)
NO _x	2.09	9.17	2.97	13.02	2.99	13.09	2.09	9.17	2.99	13.09
CO	1.76	7.70	1.72	7.51	0.75	3.27	1.76	7.70	1.76	7.70
PM	0.16	0.70	0.16	0.70	0.49	2.16	0.16	0.70	0.49	2.16
PM ₁₀	0.16	0.70	0.16	0.70	0.15	0.65	0.16	0.70	0.16	0.70
PM _{2.5}	0.16	0.70	0.16	0.70	0.04	0.16	0.16	0.70	0.16	0.70
SO ₂	0.01	0.05	0.34	1.50	0.03	0.14	0.02	0.10	0.34	1.50
VOC	0.12	0.50	0.18	0.80	0.03	0.13	0.12	0.50	0.18	0.80
Lead	1.05E-05	4.58E-05	-	-	-	-	-	-	1.05E-05	4.58E-05
CO ₂ e	2,450.28	10,732.21	2,921.04	12,794.15	3,347.85	14,663.59	2,450.28	10,732.21	3,347.85	14,663.59

Criteria Pollutant Potential Emissions from the Kemco Water Heater #1

Pollutant	Kemco Natural Gas		Kemco Propane		Kemco Water Heater #1	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	PTE (lb/hr)	PTE (tpy)
NOX	1.10	4.82	1.56	6.85	1.56	6.85
CO	0.92	4.05	0.90	3.95	0.92	4.05
PM	0.08	0.37	0.08	0.37	0.08	0.37
PM10	0.08	0.37	0.08	0.37	0.08	0.37
PM2.5	0.08	0.37	0.08	0.37	0.08	0.37
SO2	0.01	0.03	0.18	0.79	0.18	0.79
VOC	0.06	0.26	0.10	0.42	0.10	0.42
Lead	5.50E-06	2.41E-05	-	-	5.50E-06	2.41E-05
CO2e	1,288.08	5,641.78	1,535.55	6,725.72	1,535.55	6,725.72

Criteria Pollutant Potential Emissions from the Kemco Water Heater #2

Pollutant	Kemco Natural Gas		Kemco Propane		Kemco Water Heater #2	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	PTE (lb/hr)	PTE (tpy)
NOX	1.10	4.82	1.56	6.85	1.56	6.85
CO	0.92	4.05	0.90	3.95	0.92	4.05
PM	0.08	0.37	0.08	0.37	0.08	0.37
PM10	0.08	0.37	0.08	0.37	0.08	0.37
PM2.5	0.08	0.37	0.08	0.37	0.08	0.37
SO2	0.01	0.03	0.18	0.79	0.18	0.79
VOC	0.06	0.26	0.10	0.42	0.10	0.42
Lead	5.50E-06	2.41E-05	-	-	5.50E-06	2.41E-05
CO2e	1,288.08	5,641.78	1,535.55	6,725.72	1,535.55	6,725.72

Criteria Pollutant Potential Emissions from the Flare

Pollutant	Flare Biogas	
	Natural Gas (lb/hr)	Annual (tpy)
NO _x	1.80	7.88
CO	1.51	6.62
PM	0.14	0.60
PM ₁₀	0.14	0.60
PM _{2.5}	0.14	0.60
SO ₂	0.10	0.43
VOC	0.10	0.43
Lead	-	-
CO ₂ e	2,107.76	9,232.01

NOTE 1 - Flare is rated at 24,000 cubic feet of digester gas per hour and per testing the digester gas averages 750 BTU per cubic foot with the remainder of the gas CO2 or Nitrogen.

Criteria Pollutant Potential Emissions from the Misc Small Heaters

Pollutant	Misc Small Heaters		Misc Small Heaters		Misc Small Heaters	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	PTE (lb/hr)	PTE (tpy)
NO _x	5.48	24.01	7.79	34.11	7.79	34.11
CO	4.60	20.16	4.49	19.68	4.60	20.16
PM	0.42	1.82	0.42	1.84	0.42	1.84
PM ₁₀	0.42	1.82	0.42	1.84	0.42	1.84
PM _{2.5}	0.42	1.82	0.42	1.84	0.42	1.84
SO ₂	0.03	0.14	0.90	3.94	0.90	3.94
VOC	0.30	1.32	0.48	2.10	0.48	2.10
Lead	2.74E-05	1.20E-04	-	-	2.74E-05	1.20E-04
CO ₂ e	6,417.79	28,109.92	7,650.82	33,510.58	7,650.82	33,510.58

SO_x Emission Factor Calculation to include H2S combustion

Emission factor for SO_x for Biogas is derived from 2 sources; the combustion of the methane/CO₂ as well as the combustion of H₂S that is in the biogas.

0.45 lbs/mmcf is assumed due to the fact that the biogas has 75% heat capacity of natural gas therefore, 75% of the emission factor for natural gas is assumed for biogas; 0.6 lbs/MMscf x 0.75 = 0.45 lbs/mmcf.

The other component of SO_x production is from the concentration of H₂S in the biogas.

Biogas burned in the flare will have a concentration of no more than 6000 ppm of H₂S. The conversion of H₂S to SO_x is as follows:
6000 ppm = 6000 mg/L.

Air flow rate = 24,000 cf/hr which equates to 6.769 L/hr

therefore: 6000 mg/l x 6.769 L/hr x 1 g/1000 mg x 1 lb/454 g = 0.0731 lbs/hr H₂S

0.0731 lbs/hr H₂S x (1 lb/mole/34 lb H₂S) x (1 lbmole SO₂/1 lbmole H₂S) x (64 lb SO_x/1 lbmole) = 0.137 lbs/hr SO_x;

In terms of lbs of SO_x/mmcf of SO_x production from the flare the emission factor is calculated as such: 0.137 lbs/hr SO_x/0.0240 mmcf/hr = 5.71 lbs/mmcf before control. Adding 5.71 lbs/mmcf for the H₂S conversion to the emission factor for the combustion of methane = 5.71 lbs/mmcf + 0.45 lbs/mmcf = 6.16 lbs/mmcf total

The average concentration of biogas vented to the boilers is much lower than that vented to the flare due to the glycol chiller which dehydrates the biogas stream causing the H₂S to be removed. Conservatively, approximately 95% of the H₂S is removed from the biogas stream before combustion in the boilers. Therefore, at 6000 mg/l x 6.769 l/hr x 1 g/1000 mg x 1 lb/454 g x (1-.95) = 0.0045 lbs/hr H₂S venting to the boilers.
0.0045 lbs/hr H₂S x (1 lb/mole/34 lb H₂S) x (1 lbmole SO₂/1 lbmole H₂S) x (64 lb SO_x/1 lbmole) = 0.0085 lbs/hr SO_x;

In terms of lbs of SO_x/mmcf the emission factor after control is (0.0085 lbs/hr SO_x / 0.024 mmcf/hr = 0.35 lbs/mmcf after control.

Adding 0.35 lbs/mmcf for the H₂S conversion to the emission factor for the combustion of methane = 0.35 lbs/mmcf + 0.45 lbs/mmcf = 0.80 lbs/mmcf total

Pollutant	Emission Factors		Kewanee Boiler #3		Victory Boiler #4				Kemco Water Heater #1		Kemco Water Heater #2		Misc Small Heaters (combined)	
	Natural Gas ¹	Fuel Oil ⁴	Natural Gas	Annual ²	Natural Gas	Annual ²	Fuel Oil	Annual ²	Natural Gas	Annual ²	Natural Gas	Annual ²	Natural Gas	Annual ²
	(lb/MMscf)	(lb/Mgal)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
1,1,1-Trichloroethane		2.36E-04	-	-	-	-	3.53E-05	1.54E-04	-	-	-	-	-	-
2-Methylnaphthalene ³	2.40E-05		4.01E-07	1.76E-06	5.02E-07	2.20E-06	-	-	2.64E-07	1.16E-06	2.64E-07	1.16E-06	1.32E-06	5.76E-06
3-Methylchloranthrene ³	1.80E-06		3.01E-08	1.32E-07	3.77E-08	1.65E-07	-	-	1.98E-08	8.67E-08	1.98E-08	8.67E-08	9.87E-08	4.32E-07
7,12-Dimethylbenz(a)anthracene ³	1.60E-05		2.67E-07	1.17E-06	3.35E-07	1.47E-06	-	-	1.76E-07	7.71E-07	1.76E-07	7.71E-07	8.77E-07	3.84E-06
Acenaphthene ³	1.80E-06	2.11E-05	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.15E-06	1.38E-05	1.98E-08	8.67E-08	1.98E-08	8.67E-08	9.87E-08	4.32E-07
Acenaphthylene ³	1.80E-06	2.53E-07	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.78E-08	1.66E-07	1.98E-08	8.67E-08	1.98E-08	8.67E-08	9.87E-08	4.32E-07
Anthracene ³	2.40E-06	1.22E-06	4.01E-08	1.76E-07	5.02E-08	2.20E-07	1.82E-07	7.99E-07	2.64E-08	1.16E-07	2.64E-08	1.16E-07	1.32E-07	5.76E-07
Benz(a)anthracene ³	1.80E-06	4.01E-06	3.01E-08	1.32E-07	3.77E-08	1.65E-07	5.99E-07	2.63E-06	1.98E-08	8.67E-08	1.98E-08	8.67E-08	9.87E-08	4.32E-07
Benzene	2.10E-03	2.14E-04	3.51E-05	1.54E-04	4.39E-05	1.92E-04	3.20E-05	1.40E-04	2.31E-05	1.01E-04	2.31E-05	1.01E-04	1.15E-04	5.04E-04
Benzo(a)pyrene ³	1.20E-06		2.00E-08	8.78E-08	2.51E-08	1.10E-07	-	-	1.32E-08	5.78E-08	1.32E-08	5.78E-08	6.58E-08	2.88E-07
Benzo(b)fluoranthene ³	1.80E-06		3.01E-08	1.32E-07	3.77E-08	1.65E-07	-	-	1.98E-08	8.67E-08	1.98E-08	8.67E-08	9.87E-08	4.32E-07
Benzo(g,h,i)perylene ³	1.20E-06	2.26E-06	2.00E-08	8.78E-08	2.51E-08	1.10E-07	3.38E-07	1.48E-06	1.32E-08	5.78E-08	1.32E-08	5.78E-08	6.58E-08	2.88E-07
Benzo(k)fluoranthene ³	1.80E-06		3.01E-08	1.32E-07	3.77E-08	1.65E-07	-	-	1.98E-08	8.67E-08	1.98E-08	8.67E-08	9.87E-08	4.32E-07
Chrysene ³	1.80E-06	2.38E-06	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.56E-07	1.56E-06	1.98E-08	8.67E-08	1.98E-08	8.67E-08	9.87E-08	4.32E-07
Dibenzof(a,h)anthracene ³	1.20E-06	1.67E-06	2.00E-08	8.78E-08	2.51E-08	1.10E-07	2.50E-07	1.09E-06	1.32E-08	5.78E-08	1.32E-08	5.78E-08	6.58E-08	2.88E-07
Dichlorobenzene	1.20E-03		2.00E-05	8.78E-05	2.51E-05	1.10E-04	-	-	1.32E-05	5.78E-05	1.32E-05	5.78E-05	6.58E-05	2.88E-04
Ethylbenzene		6.36E-06	-	-	-	-	9.51E-07	4.16E-06	-	-	-	-	-	-
Fluoranthene ³	3.00E-06	4.84E-06	5.01E-08	2.19E-07	6.28E-08	2.75E-07	7.23E-07	3.17E-06	3.30E-08	1.45E-07	3.30E-08	1.45E-07	1.64E-07	7.20E-07
Fluorene ³	2.80E-06	4.47E-06	4.68E-08	2.05E-07	5.86E-08	2.57E-07	6.68E-07	2.93E-06	3.08E-08	1.35E-07	3.08E-08	1.35E-07	1.53E-07	6.72E-07
Formaldehyde	0.08	0.06	1.25E-03	5.49E-03	1.57E-03	6.87E-03	9.12E-03	3.99E-02	8.25E-04	3.61E-03	8.25E-04	3.61E-03	4.11E-03	1.80E-02
Hexane	1.80		3.01E-02	1.32E-01	3.77E-02	1.65E-01	-	-	1.98E-02	8.67E-02	1.98E-02	8.67E-02	9.87E-02	4.32E-01
Indeno(1,2,3-cd)pyrene ³	1.80E-06	2.14E-06	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.20E-07	1.40E-06	1.98E-08	8.67E-08	1.98E-08	8.67E-08	9.87E-08	4.32E-07
Naphthalene	6.10E-04	1.13E-03	1.02E-05	4.46E-05	1.28E-05	5.59E-05	1.69E-04	7.40E-04	6.71E-06	2.94E-05	6.71E-06	2.94E-05	3.34E-05	1.46E-04
Phenanthrene ³	1.70E-05	1.05E-05	2.84E-07	1.24E-06	3.56E-07	1.56E-06	1.57E-06	6.87E-06	1.87E-07	8.19E-07	1.87E-07	8.19E-07	9.32E-07	4.08E-06
Pyrene ³	5.00E-06	4.25E-06	8.35E-08	3.66E-07	1.05E-07	4.58E-07	6.35E-07	2.78E-06	5.50E-08	2.41E-07	5.50E-08	2.41E-07	2.74E-07	1.20E-06
Toluene	3.40E-03	6.20E-03	5.68E-05	2.49E-04	7.11E-05	3.12E-04	9.27E-04	4.06E-03	3.74E-05	1.64E-04	3.74E-05	1.64E-04	1.86E-04	8.16E-04
o-Xylene		1.09E-04	-	-	-	-	1.63E-05	7.14E-05	-	-	-	-	-	-
Arsenic	2.00E-04	4.00E-06	3.34E-06	1.46E-05	4.19E-06	1.83E-05	5.98E-07	2.62E-06	2.20E-06	9.64E-06	2.20E-06	9.64E-06	1.10E-05	4.80E-05
Beryllium	1.20E-05	3.00E-06	2.00E-07	8.78E-07	2.51E-07	1.10E-06	4.48E-07	1.96E-06	1.32E-07	5.78E-07	1.32E-07	5.78E-07	6.58E-07	2.88E-06
Cadmium	1.10E-03	3.00E-06	1.84E-05	8.05E-05	2.30E-05	1.01E-04	4.48E-07	1.96E-06	1.21E-05	5.30E-05	1.21E-05	5.30E-05	6.03E-05	2.64E-04
Chromium	1.40E-03	3.00E-06	2.34E-05	1.02E-04	2.93E-05	1.28E-04	4.48E-07	1.96E-06	1.54E-05	6.75E-05	1.54E-05	6.75E-05	7.67E-05	3.36E-04
Cobalt	8.40E-05		1.40E-06	6.14E-06	1.76E-06	7.70E-06	-	-	9.24E-07	4.05E-06	9.24E-07	4.05E-06	4.60E-06	2.02E-05
Manganese	3.80E-04	3.00E-06	6.35E-06	2.78E-05	7.95E-06	3.48E-05	4.48E-07	1.96E-06	4.18E-06	1.83E-05	4.18E-06	1.83E-05	2.08E-05	9.12E-05
Mercury	2.60E-04	6.00E-06	4.34E-06	1.90E-05	5.44E-06	2.38E-05	8.97E-07	3.93E-06	2.86E-06	1.25E-05	2.86E-06	1.25E-05	1.42E-05	6.24E-05
Nickel	2.10E-03	3.00E-06	3.51E-05	1.54E-04	4.39E-05	1.92E-04	4.48E-07	1.96E-06	2.31E-05	1.01E-04	2.31E-05	1.01E-04	1.15E-04	5.04E-04
Selenium	2.40E-05	1.50E-05	4.01E-07	1.76E-06	5.02E-07	2.20E-06	2.24E-06	9.82E-06	2.64E-07	1.16E-06	2.64E-07	1.16E-06	1.32E-06	5.76E-06
Total Combustion HAP:			0.03	0.14	0.04	0.17	0.01	0.05	0.02	0.09	0.02	0.09	0.10	0.45

1. Emission factors for natural gas combustion per AP-42 Section 1.4, Tables 1.4-3 and 1.4-4, dated July 1998.
 2. Potential annual emissions are based on the hourly potential emissions from natural gas combustion multiplied by 8,760 hours of operation per year.
 3. HAP because it is Polycyclic Organic Matter (POM).
 4. Emission factors for fuel oil combustion per AP-42 Section 1.4, Tables 1.3-8 and 1.3-10, dated September 1998.

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007AI Administrative Information ___ Section AI.1: Source Information ___ Section AI.2: Applicant Information ___ Section AI.3: Owner Information ___ Section AI.4: Type of Application ___ Section AI.5: Other Required Information ___ Section AI.6: Signature Block ___ Section AI.7: Notes, Comments, and Explanations	Additional Documentation ___ Additional Documentation attached
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Source Name: Equity Group- Kentucky Division LLC

KY EIS (AFS) #: 21- 053-00018

Permit #: F-15-010 R1

Agency Interest (AI) ID: APE20160002

Date: 11-Mar-20

Section AI.1: Source Information

Physical Location Address:	Street: <u>2294 Highway 90W</u>	City: <u>Albany</u>	County: <u>Clinton</u>	Zip Code: <u>42602</u>
Mailing Address:	Street or P.O. Box: <u>2292 Highway 90W</u>	City: <u>Albany</u>	State: <u>KY</u>	Zip Code: <u>42602</u>

Standard Coordinates for Source Physical Location

Longitude: 36.758655 (decimal degrees) Latitude: -85.179577 (decimal degrees)

Primary (NAICS) Category: Poultry Processing Primary NAICS #: 311615

Classification (SIC) Category: Poultry Processing and Slaughter Primary SIC #: 2015

Briefly discuss the type of business conducted at this site:
Poultry Processing and Slaughter

Description of Area Surrounding Source:	<input checked="" type="checkbox"/> Rural Area <input type="checkbox"/> Industrial Park <input type="checkbox"/> Residential Area <input type="checkbox"/> Urban Area <input type="checkbox"/> Industrial Area <input type="checkbox"/> Commercial Area	Is any part of the source located on federal land? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Number of Employees: <div style="border: 1px solid black; padding: 2px; display: inline-block;">~1500</div>
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Approximate distance to nearest residence or commercial property: 600-700 ft Property Area: 611 acres Is this source portable? Yes No

What other environmental permits or registrations does this source currently hold or need to obtain in Kentucky?

NPDES/KPDES:	<input type="checkbox"/> Currently Hold <input type="checkbox"/> Need <input checked="" type="checkbox"/> N/A
Solid Waste:	<input type="checkbox"/> Currently Hold <input type="checkbox"/> Need <input checked="" type="checkbox"/> N/A
RCRA:	<input type="checkbox"/> Currently Hold <input type="checkbox"/> Need <input checked="" type="checkbox"/> N/A
UST:	<input type="checkbox"/> Currently Hold <input type="checkbox"/> Need <input checked="" type="checkbox"/> N/A

Type of Regulated Waste Activity:

<input checked="" type="checkbox"/> Mixed Waste Generator <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Recycler <input type="checkbox"/> Other: _____
<input type="checkbox"/> U.S. Importer of Hazardous Waste <input type="checkbox"/> Transporter <input type="checkbox"/> Treatment/Storage/Disposal Facility <input type="checkbox"/> N/A

Section AI.2: Applicant Information

Applicant Name: Equity Group - Kentucky Division LLC

Title: (if individual) _____

Mailing Address: **Street or P.O. Box:** _____

City: Albany **State:** KY **Zip Code:** 42602

Email: (if individual) _____

Phone: _____

Technical Contact

Name: Rechelle Hollowaty

Title: Sr. Environmental Manager

Mailing Address: **Street or P.O. Box:** 7136 Harrison Hill Trail

City: Chanhassen **State:** MN **Zip Code:** 55317

Email: Rechelle.Hollowaty@tyson.com

Phone: 479-290-2506

Air Permit Contact for Source

Name: Jason York

Title: Complex Environmental Manager

Mailing Address: **Street or P.O. Box:** 2294 Highway 90W

City: Albany **State:** KY **Zip Code:** 42602

Email: jason.york@tyson.com

Phone: 606-387-2226

Section AI.3: Owner Information

Owner same as applicant

Name: _____

Title: _____

Mailing Address: **Street or P.O. Box:** _____

City: _____ **State:** _____ **Zip Code:** _____

Email: _____

Phone: _____

List names of owners and officers of the company who have an interest in the company of 5% or more.

Name	Position
<u>Grow-Out Holdings LLC</u>	<u>100%</u>
_____	_____
_____	_____

Section AI.4: Type of Application

Current Status: Title V Conditional Major State-Origin General Permit Registration None

Name Change Initial Registration Significant Revision Administrative Permit Amendment

Requested Action: Renewal Permit Revised Registration Minor Revision Initial Source-wide Operating Permit
(check all that apply)

502(b)(10)Change Extension Request Addition of New Facility Portable Plant Relocation Notice

Revision Off Permit Change Landfill Alternate Compliance Submittal Modification of Existing Facilities

Ownership Change Closure

Requested Status: Title V Conditional Major State-Origin PSD NSR Other: _____

Is the source requesting a limitation of potential emissions? Yes No

Pollutant:	Requested Limit:	Pollutant:	Requested Limit:
<input checked="" type="checkbox"/> Particulate Matter	PM10 <100 tpy via production limitation	<input type="checkbox"/> Single HAP	_____
<input type="checkbox"/> Volatile Organic Compounds (VOC)	_____	<input type="checkbox"/> Combined HAPs	_____
<input type="checkbox"/> Carbon Monoxide	_____	<input type="checkbox"/> Air Toxics (40 CFR 68, Subpart F)	_____
<input type="checkbox"/> Nitrogen Oxides	_____	<input type="checkbox"/> Carbon Dioxide	_____
<input type="checkbox"/> Sulfur Dioxide	_____	<input type="checkbox"/> Greenhouse Gases (GHG)	_____
<input type="checkbox"/> Lead	_____	<input type="checkbox"/> Other	_____

For New Construction:

Proposed Start Date of Construction: _____
(MM YYYY)

Proposed Operation Start-Up Date: _____
(MM YYYY)

For Modifications:

Proposed Start Date of Modification: _____
(MM YYYY)

Proposed Operation Start-Up Date: _____
(MM YYYY)

Applicant is seeking coverage under a permit shield. Yes No **Identify any non-applicable requirements for which permit shield is sought on a separate attachment to the application.**

Section AI.5 Other Required Information

Indicate the documents attached as part of this application:

<input type="checkbox"/> DEP7007A Indirect Heat Exchangers and Turbines	<input type="checkbox"/> DEP7007CC Compliance Certification
<input type="checkbox"/> DEP7007B Manufacturing or Processing Operations	<input checked="" type="checkbox"/> DEP7007DD Insignificant Activities
<input type="checkbox"/> DEP7007C Incinerators and Waste Burners	<input type="checkbox"/> DEP7007EE Internal Combustion Engines
<input type="checkbox"/> DEP7007F Episode Standby Plan	<input type="checkbox"/> DEP7007FF Secondary Aluminum Processing
<input type="checkbox"/> DEP7007J Volatile Liquid Storage	<input type="checkbox"/> DEP7007GG Control Equipment
<input type="checkbox"/> DEP7007K Surface Coating or Printing Operations	<input type="checkbox"/> DEP7007HH Haul Roads
<input type="checkbox"/> DEP7007L Mineral Processes	<input type="checkbox"/> Confidentiality Claim
<input type="checkbox"/> DEP7007M Metal Cleaning Degreasers	<input type="checkbox"/> Ownership Change Form
<input type="checkbox"/> DEP7007N Source Emissions Profile	<input type="checkbox"/> Secretary of State Certificate
<input type="checkbox"/> DEP7007P Perchloroethylene Dry Cleaning Systems	<input type="checkbox"/> Flowcharts or diagrams depicting process
<input type="checkbox"/> DEP7007R Emission Offset Credit	<input type="checkbox"/> Digital Line Graphs (DLG) files of buildings, roads, etc.
<input type="checkbox"/> DEP7007S Service Stations	<input type="checkbox"/> Site Map
<input type="checkbox"/> DEP7007T Metal Plating and Surface Treatment Operations	<input type="checkbox"/> Map or drawing depicting location of facility
<input type="checkbox"/> DEP7007V Applicable Requirements and Compliance Activities	<input type="checkbox"/> Safety Data Sheet (SDS)
<input type="checkbox"/> DEP7007Y Good Engineering Practice and Stack Height Determination	<input type="checkbox"/> Emergency Response Plan
<input type="checkbox"/> DEP7007AA Compliance Schedule for Non-complying Emission Units	<input checked="" type="checkbox"/> Other: _____
<input type="checkbox"/> DEP7007BB Certified Progress Report	

Section AI.6: Signature Block

I, the undersigned, hereby certify under penalty of law, that I am a responsible official*, and that I have personally examined, and am familiar with, the information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the information is on knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false or incomplete information, including the possibility of fine or imprisonment.


Authorized Signature

4/2/20
Date

Tim Eastlinger
Type or Printed Name of Signatory

Complex Manager
Title of Signatory

*Responsible official as defined by 401 KAR 52:001.

Division for Air Quality 300 Sower Boulevard Frankfort, KY 40601 (502) 564-3999	DEP7007DD Insignificant Activities ___ Section DD.1: Table of Insignificant Activities ___ Section DD.2: Signature Block ___ Section DD.3: Notes, Comments, and Explanations
Source Name:	<u>Equity Group- Kentucky Division LLC</u>
KY EIS (AFS) #:	21- <u>053-00018</u>
Permit #:	<u>F-15-010 R1</u>
Agency Interest (AI) ID:	<u>APE20160002</u>
Date:	<u>3/11/2020</u>

Section DD.1: Table of Insignificant Activities

*Identify each activity with a unique Insignificant Activity number (IA #); for example: 1, 2, 3... etc.

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
1	PAA/Intervention/Fugitive Emissions	na	na	4.28 ton VOC/year as highest emitting criteria pollutant
2	Emergency Fire PumpGenerator Diesel Tank #1	na	na	2.85E-05 ton VOC/year as highest emitting criteria pollutant
3	RTU #1 (410A)	10-ADAC-0001	na	0.12 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.17 ton NOx/year as highest emitting criteria pollutant for Propane
4	RTU #2 (410A)	10-ADAC-0002	na	0.12 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.17 ton NOx/year as highest emitting criteria pollutant for Propane
5	RTU #3 EVIS BREAK ROOM (410A)	10-ADAC-0003	na	0.18 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.25 ton NOx/year as highest emitting criteria pollutant for Propane
6	RTU #4 (410A)	10-ADAC-0004	na	0.12 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.17 ton NOx/year as highest emitting criteria pollutant for Propane
7	RTU #5 (410A)	10-ADAC-0005	na	0.12 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.17 ton NOx/year as highest emitting criteria pollutant for Propane
8	RTU #6 (410A)	10-ADAC-0006	na	0.18 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.25 ton NOx/year as highest emitting criteria pollutant for Propane
9	RTU #7 (410A)	10-ADAC-0007	na	0.18 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.25 ton NOx/year as highest emitting criteria pollutant for Propane
10	RTU #8 (410A)	10-ADAC-0008	na	0.18 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.25 ton NOx/year as highest emitting criteria pollutant for Propane
11	RTU #9 (410A)	10-ADAC-0009	na	0.18 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.25 ton NOx/year as highest emitting criteria pollutant for Propane
12	RTU #10 (410A)	10-ADAC-0010	na	0.18 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.25 ton NOx/year as highest emitting criteria pollutant for Propane
13	RTU #11 (410A)	10-ADAC-0011	na	0.08 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.11 ton NOx/year as highest emitting criteria pollutant for Propane
14	RTU #12 (410A)	10-ADAC-0012	na	0.17 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.24 ton NOx/year as highest emitting criteria pollutant for Propane
15	RTU #13 (410A)	10-ADAC-0013	na	0.08 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.11 ton NOx/year as highest emitting criteria pollutant for Propane
16	RTU #14 (410A)	10-ADAC-0014	na	0.09 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.12 ton NOx/year as highest emitting criteria pollutant for Propane
17	RTU #15 (410A)	10-ADAC-0015	na	0.09 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.12 ton NOx/year as highest emitting criteria pollutant for Propane
18	RTU #16 (410A)	10-ADAC-0016	na	0.09 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.12 ton NOx/year as highest emitting criteria pollutant for Propane
19	RTU #17 (410A)	10-ADAC-0017	na	0.09 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.12 ton NOx/year as highest emitting criteria pollutant for Propane
20	MUA #1	10-EVAC-0001	na	1.37 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 1.94 ton NOx/year as highest emitting criteria pollutant for Propane
21	MUA #2	10-EVAC-0002	na	1.37 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 1.94 ton NOx/year as highest emitting criteria pollutant for Propane

Insignificant Activity #	Description of Activity including Rated Capacity	Serial Number or Other Unique Identifier	Applicable Regulation(s)	Calculated Emissions
22	MUA #3	10-EVAC-0003	na	1.37 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 1.94 ton NOx/year as highest emitting criteria pollutant for Propane
23	MUA #4	10-EVAC-0004	na	1.37 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 1.94 ton NOx/year as highest emitting criteria pollutant for Propane
24	MUA #5	10-EVAC-0005	na	0.10 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.14 ton NOx/year as highest emitting criteria pollutant for Propane
25	HV-01	10-LRAC-0001	na	1.02 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 1.45 ton NOx/year as highest emitting criteria pollutant for Propane
26	HV-02	10-LRAC-0002	na	0.63 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.89 ton NOx/year as highest emitting criteria pollutant for Propane
27	KLEEN AIR #1 (nh3 107.4 TON) 45,000 cmf	10-DBAC-0001	na	1.28 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 1.82 ton NOx/year as highest emitting criteria pollutant for Propane
28	KLEEN AIR #2 (nh3 107.4 TON) 45,000 cmf	10-DBAC-0002	na	1.28 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 1.82 ton NOx/year as highest emitting criteria pollutant for Propane
29	KLEEN AIR #3 (nh3 107.4 TON) 45,000 cmf	10-DBAC-0003	na	1.28 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 1.82 ton NOx/year as highest emitting criteria pollutant for Propane
30	KLEEN AIR #4 (nh3 107.4 TON) 45,000 cmf	10-DBAC-0004	na	1.28 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 1.82 ton NOx/year as highest emitting criteria pollutant for Propane
31	VAPORIZER/MIXER	10-UTPM-0002	na	0.39 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.55 ton NOx/year as highest emitting criteria pollutant for Propane
32	Gas Heater in Dry Receiving	na	na	0.09 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.12 ton NOx/year as highest emitting criteria pollutant for Propane
33	Gas Clothes Dryer Supply East	na	na	0.00 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.00 ton NOx/year as highest emitting criteria pollutant for Propane
34	Gas Clothes Dryer Supply West	na	na	0.00 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.00 ton NOx/year as highest emitting criteria pollutant for Propane
35	OFFALL HV-3	10-UTEF-0057	na	0.99 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 1.41 ton NOx/year as highest emitting criteria pollutant for Propane
36	Gas Heater in Offal DAF Room	10-OFAC-0002	na	0.11 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.15 ton NOx/year as highest emitting criteria pollutant for Propane
37	MUA #6 (410A)	10-EVAC-0006	na	0.12 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.17 ton NOx/year as highest emitting criteria pollutant for Propane
38	RTU PBX (410A)	10-ADAC-0021	na	0.08 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.11 ton NOx/year as highest emitting criteria pollutant for Propane
39	ICP-1 LIVE RECEIVING (410A)	10-LRAC-0001	na	0.24 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.34 ton NOx/year as highest emitting criteria pollutant for Propane
40	ICP-2 LIVE RECEIVING (410A)	10-LRAC-0002	na	0.24 ton NOx/year as highest emitting criteria pollutant for Natural Gas and 0.34 ton NOx/year as highest emitting criteria pollutant for Propane
41	Cleaning and Sanitizing Chemical Usage Fugitive emissions	na	na	4.34 ton VOC/year as highest emitting criteria pollutant of non-process fugitive
42	Cooling Condensers	na	na	1.10 ton PM10/year as highest emitting criteria pollutant

Section DD.2: Signature Block

I, THE UNDERSIGNED, HEREBY CERTIFY UNDER PENALTY OF LAW, THAT I AM A RESPONSIBLE OFFICIAL, AND THAT I HAVE PERSONALLY EXAMINED, AND AM FAMILIAR WITH, THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ITS ATTACHMENTS. BASED ON MY INQUIRY OF THOSE INDIVIDUALS WITH PRIMARY RESPONSIBILITY FOR OBTAINING THE INFORMATION, I CERTIFY THAT THE INFORMATION IS ON KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE OR INCOMPLETE INFORMATION, INCLUDING THE POSSIBILITY OF FINE OR IMPRISONMENT.

By:

Authorized Signature

Date

Tim Eastlinger

Complex Manager

Type/Print Name of Signatory

Title of Signatory

Source	EU	NOx lbs/hr	CO lbs/hr	PM lbs/hr	PM10 lbs/hr	PM2.5 lbs/hr	SOx lbs/hr	VOC lbs/hr	Lead lbs/hr	CO2e lbs/hr	HAP lbs/hr	NOx tpy	CO tpy	PM	PM10	PM2.5 tpy	SOx tpy	VOC tpy	Lead tpy	CO2e tpy	HAP tpy
Kewanee Boiler #3	EU24	2.37	1.40	0.13	0.13	0.13	0.27	0.15	8.35E-06	2,331	0.03	10.39	6.14	0.56	0.56	0.56	1.20	0.64	3.66E-05	10,211	0.14
Victory Boiler #4	EU25	2.99	1.76	0.49	0.16	0.16	0.34	0.18	1.05E-05	3,348	0.04	13.09	7.70	2.16	0.70	0.70	1.50	0.80	4.58E-05	14,664	0.17
Kemco Water Heater #1	EU03	1.56	0.92	0.08	0.08	0.08	0.18	0.10	5.50E-06	1,536	0.02	6.85	4.05	0.37	0.37	0.37	0.79	0.42	2.41E-05	6,726	0.09
Kemco Water Heater #2	EU04	1.56	0.92	0.08	0.08	0.08	0.18	0.10	5.50E-06	1,536	0.02	6.85	4.05	0.37	0.37	0.37	0.79	0.42	2.41E-05	6,726	0.09
Flare	EU08	1.80	1.51	0.14	0.14	0.14	0.01	0.10	0.00E+00	2,108	0.00	7.88	6.62	0.60	0.60	0.60	0.05	0.43	0.00E+00	9,232	0.00
Misc Small Heaters	--	5.45	3.22	0.29	0.29	0.29	0.63	0.34	1.92E-05	5,357	0.07	23.88	14.12	1.29	1.29	1.29	2.76	1.47	8.40E-05	23,465	0.32
Fire Pump	EU07	3.63	0.78	0.26	0.26	0.26	0.24	0.29	0.00E+00	135	0.01	0.91	0.20	0.06	0.06	0.06	0.06	0.07	0.00E+00	34	1.32E-03
Fire Pump Diesel Tank	T01	-	-	-	-	-	-	6.50E-06	-	-	-	-	-	-	-	-	-	2.85E-05	-	-	-
Truck Unloading	EU09	-	-	1.81	0.62	0.10	-	-	-	-	-	-	-	7.91	2.71	0.43	-	-	-	-	-
Auger Conveyor to Silo	EU10	-	-	0.70	0.39	0.07	-	-	-	-	-	-	-	3.05	1.70	0.29	-	-	-	-	-
Silo Transfer Conveyor	EU11	-	-	0.70	0.39	0.07	-	-	-	-	-	-	-	3.05	1.70	0.29	-	-	-	-	-
Silo #1	EU12	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Silo #2	EU13	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Silo #3	EU14	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Silo #4	EU15	-	-	0.07	0.02	0.00	-	-	-	-	-	-	-	0.31	0.08	0.01	-	-	-	-	-
Auger Conveyor from Silo #1	EU16	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Auger Conveyor from Silo #2	EU17	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Auger Conveyor from Silo #3	EU18	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Auger Conveyor from Silo #4	EU19	-	-	0.07	0.10	0.02	-	-	-	-	-	-	-	0.31	0.43	0.07	-	-	-	-	-
Truck Loadout	EU20	-	-	0.98	0.33	0.06	-	-	-	-	-	-	-	4.30	1.45	0.25	-	-	-	-	-
Live Hang	EU22	-	-	0.005	0.005	0.005	-	-	-	-	-	-	-	0.02	0.02	0.02	-	-	-	-	-
Haul Roads	-	-	-	0.089	0.005	0.002	-	-	-	-	-	-	-	0.39	0.02	0.01	-	-	-	-	-
PAA	Fug	-	-	-	-	-	-	0.98	-	-	-	-	-	-	-	-	-	4.28	-	-	-
Cleaners and Sanitizers	Fug	-	-	-	-	-	-	1.48	-	-	-	-	-	-	-	-	-	6.50	-	-	-
Total		19.37	10.53	6.32	3.34	1.52	1.86	1.25	0.00	16,350	0.19	69.85	42.87	26.63	13.56	5.58	7.14	15.05	0.00	71,056	0.81

Source	Emission Source ID	Heat Input Capacity (MMBtu/hr)	Annual Hours of Operation (hr/yr)	Natural Gas Heating Value (Btu/scf)	Hourly Natural Gas Consumption (MMscf/hr)	Propane Heating Value (Btu/gal)	Hourly Propane Consumption (Mgal/hr)	Fuel Oil Heating Value (Btu/gal)	Hourly Fuel Oil Consumption (Mgal/hr)	Biogas Heating Value (Btu/gal)	Hourly Biogas Consumption (MMscf/hr)
Kewanee Boiler #3	EU24	16.70	8,760	1,000	1.67E-02	91,500	0.18	na	na	750	2.23E-02
Victory Boiler #4	EU25	20.93	8,760	1,000	2.09E-02	91,500	0.23	140,000	0.15	750	2.79E-02
Kemco Water Heater #1	EU03	11.00	8,760	1,000	1.10E-02	91,500	0.12	na	na	na	na
Kemco Water Heater #2	EU04	11.00	8,760	1,000	1.10E-02	91,500	0.12	na	na	na	na
Flare	EU08	18.00	8,760	na	na	na	na	na	na	750	2.40E-02
Misc Small Heaters (combined)	Insign	38.38	8,760	1,000	3.84E-02	91,500	0.42	na	na	na	na

Emissions Factors

Pollutant	Emission Factors	Emission Factors	Emission Factors	Emission Factors
	Secondary	Primary	Tertiary	Tertiary
	Natural Gas ¹ (lb/MMscf)	Propane ² (lb/Mgal)	Fuel Oil ³ (lb/Mgal)	Biogas ⁴ (lb/MMscf)
NO _x	100	13	20	75
CO	84	7.5	5	63
PM	7.6	0.70	3.30	5.7
PM ₁₀	7.6	0.70	1.00	5.7
PM _{2.5}	7.6	0.70	0.25	5.7
SO ₂	0.6	1.50	0.21	0.45
VOC	5.5	0.8	0.2	4.125
Lead	5.00E-04			
CO ₂ e ⁶	117,098	12,773	22,399	87,824

- AP-42 Section 1.4, Natural Gas Combustion, Tables 1.4-1 and 1.4-2, dated July 1998.
- AP-42 Section 1.5 Liquefied Petroleum Gas Combustion, Tables 1.5-1 and 1.5-2 dated July 2008, Sulfur is assumed 15 ppm
- AP-42 Section 1.3 Fuel Oil Combustion, Tables 1.3-1 and 1.3-2 dated May 2010
- Natural Gas AP-42 1.4 emission factors was used for Biogas @ 75% natural gas values; Biogas is 75% methane and 25% CO₂.
- Potential annual emissions are based on the hourly potential emissions multiplied by 8,760 hours of operation per year.
- CO₂e factor calculated based on the emission factors for CO₂, CH₄, and N₂O from 40 CFR 98, Subpart C, Tables C-1 and C-2, and the global warming potential (GWP) for each pollutant per 40 CFR 98, Subpart A, Table A-1.

Criteria Pollutant Potential Emissions from the Kemanee Boiler

Pollutant	Kemanee Natural Gas		Kemanee Propane		Kemanee Biogas		Kemanee Boiler	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	Biogas (lb/hr)	Annual (tpy)	PTE (lb/hr)	(tpy)
NO _x	1.67	7.31	2.37	10.39	1.67	7.31	2.37	10.39
CO	1.40	6.14	1.37	6.00	1.40	6.14	1.40	6.14
PM	0.13	0.56	0.13	0.56	0.13	0.56	0.13	0.56
PM ₁₀	0.13	0.56	0.13	0.56	0.13	0.56	0.13	0.56
PM _{2.5}	0.13	0.56	0.13	0.56	0.13	0.56	0.13	0.56
SO ₂	0.01	0.04	0.27	1.20	0.01	0.04	0.27	1.20
VOC	0.09	0.40	0.15	0.64	0.09	0.40	0.15	0.64
Lead	8.35E-06	3.66E-05	-	-	-	-	8.35E-06	3.66E-05
CO ₂ e	1,955.54	8,565.25	2,331.25	10,210.86	1,955.54	8,565.25	2,331.25	10,210.86

Criteria Pollutant Potential Emissions from the Victory Boiler

Pollutant	Victory Natural Gas		Victory Propane		Victory Fuel Oil		Victory Biogas		Victory Boiler	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	Fuel Oil (lb/hr)	Annual (tpy)	Biogas (lb/hr)	Annual (tpy)	PTE (lb/hr)	(tpy)
NO _x	2.09	9.17	2.97	13.02	2.99	13.09	2.09	9.17	2.99	13.09
CO	1.76	7.70	1.72	7.51	0.75	3.27	1.76	7.70	1.76	7.70
PM	0.16	0.70	0.16	0.70	0.49	2.16	0.16	0.70	0.49	2.16
PM ₁₀	0.16	0.70	0.16	0.70	0.15	0.65	0.16	0.70	0.16	0.70
PM _{2.5}	0.16	0.70	0.16	0.70	0.04	0.16	0.16	0.70	0.16	0.70
SO ₂	0.01	0.05	0.34	1.50	0.03	0.14	0.01	0.05	0.34	1.50
VOC	0.12	0.50	0.18	0.80	0.03	0.13	0.12	0.50	0.18	0.80
Lead	1.05E-05	4.58E-05	-	-	-	-	-	-	1.05E-05	4.58E-05
CO ₂ e	2,450.28	10,732.21	2,921.04	12,794.15	3,347.85	14,663.59	2,450.28	10,732.21	3,347.85	14,663.59

Criteria Pollutant Potential Emissions from the Kemco Water Heater #1

Pollutant	Kemco Natural Gas		Kemco Propane		Kemco Water Heater #1	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	PTE (lb/hr)	(tpy)
NO _x	1.10	4.82	1.56	6.85	1.56	6.85
CO	0.92	4.05	0.90	3.95	0.92	4.05
PM	0.08	0.37	0.08	0.37	0.08	0.37
PM ₁₀	0.08	0.37	0.08	0.37	0.08	0.37
PM _{2.5}	0.08	0.37	0.08	0.37	0.08	0.37
SO ₂	0.01	0.03	0.18	0.79	0.18	0.79
VOC	0.06	0.26	0.10	0.42	0.10	0.42
Lead	5.50E-06	2.41E-05	-	-	5.50E-06	2.41E-05
CO ₂ e	1,288.08	5,641.78	1,535.55	6,725.72	1,535.55	6,725.72

Criteria Pollutant Potential Emissions from the Kemco Water Heater #2

Pollutant	Kemco Natural Gas		Kemco Propane		Kemco Water Heater #2	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	PTE (lb/hr)	(tpy)
NO _x	1.10	4.82	1.56	6.85	1.56	6.85
CO	0.92	4.05	0.90	3.95	0.92	4.05
PM	0.08	0.37	0.08	0.37	0.08	0.37
PM ₁₀	0.08	0.37	0.08	0.37	0.08	0.37
PM _{2.5}	0.08	0.37	0.08	0.37	0.08	0.37
SO ₂	0.01	0.03	0.18	0.79	0.18	0.79
VOC	0.06	0.26	0.10	0.42	0.10	0.42
Lead	5.50E-06	2.41E-05	-	-	5.50E-06	2.41E-05
CO ₂ e	1,288.08	5,641.78	1,535.55	6,725.72	1,535.55	6,725.72

Criteria Pollutant Potential Emissions from the Flare

Pollutant	Flare Biogas	
	Natural Gas (lb/hr)	Annual (tpy)
NO _x	1.80	7.88
CO	1.51	6.62
PM	0.14	0.60
PM ₁₀	0.14	0.60
PM _{2.5}	0.14	0.60
SO ₂	0.01	0.05
VOC	0.10	0.43
Lead	-	-
CO ₂ e	2,107.76	9,232.01

NOTE 1 - Flare is rated at 24,000 cubic feet of digester gas per hour and per testing the digester gas averages 750 BTU per cubic foot with the remainder of the gas CO₂ or Nitrogen.

Criteria Pollutant Potential Emissions from the Misc Small Heaters

Pollutant	Misc Small Heaters		Misc Small Heaters		Misc Small Heaters	
	Natural Gas (lb/hr)	Annual (tpy)	Propane (lb/hr)	Annual (tpy)	PTE (lb/hr)	(tpy)
NO _x	3.84	16.81	5.45	23.88	5.45	23.88
CO	3.22	14.12	3.15	13.78	3.22	14.12
PM	0.29	1.28	0.29	1.29	0.29	1.29
PM ₁₀	0.29	1.28	0.29	1.29	0.29	1.29
PM _{2.5}	0.29	1.28	0.29	1.29	0.29	1.29
SO ₂	0.02	0.10	0.63	2.76	0.63	2.76
VOC	0.21	0.92	0.34	1.47	0.34	1.47
Lead	1.92E-05	8.40E-05	-	-	1.92E-05	8.40E-05
CO ₂ e	4,493.87	19,683.15	5,357.26	23,464.81	5,357.26	23,464.81

Pollutant	Emission Factors		Kewanee Boiler #3		Victory Boiler #4				Kemco Water Heater #1		Kemco Water Heater #2		Misc Small Heaters (combined)	
	Natural Gas ¹	Fuel Oil ⁴	Natural Gas	Annual ²	Natural Gas	Annual ²	Fuel Oil	Annual ²	Natural Gas	Annual ²	Natural Gas	Annual ²	Natural Gas	Annual ²
	(lb/MMscf)	(lb/Mgal)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
1,1,1-Trichloroethane		2.36E-04	-	-	-	-	3.53E-05	1.54E-04	-	-	-	-	-	-
2-Methylnaphthalene ³	2.40E-05		4.01E-07	1.76E-06	5.02E-07	2.20E-06	-	-	2.64E-07	1.16E-06	2.64E-07	1.16E-06	9.21E-07	4.03E-06
3-Methylchloranthrene ³	1.80E-06		3.01E-08	1.32E-07	3.77E-08	1.65E-07	-	-	1.98E-08	8.67E-08	1.98E-08	8.67E-08	6.91E-08	3.03E-07
7,12-Dimethylbenz(a)anthracene ³	1.60E-05		2.67E-07	1.17E-06	3.35E-07	1.47E-06	-	-	1.76E-07	7.71E-07	1.76E-07	7.71E-07	6.14E-07	2.69E-06
Acenaphthene ³	1.80E-06	2.11E-05	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.15E-06	1.38E-05	1.98E-08	8.67E-08	1.98E-08	8.67E-08	6.91E-08	3.03E-07
Acenaphthylene ³	1.80E-06	2.53E-07	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.78E-08	1.66E-07	1.98E-08	8.67E-08	1.98E-08	8.67E-08	6.91E-08	3.03E-07
Anthracene ³	2.40E-06	1.22E-06	4.01E-08	1.76E-07	5.02E-08	2.20E-07	1.82E-07	7.99E-07	2.64E-08	1.16E-07	2.64E-08	1.16E-07	9.21E-08	4.03E-07
Benz(a)anthracene ³	1.80E-06	4.01E-06	3.01E-08	1.32E-07	3.77E-08	1.65E-07	5.99E-07	2.63E-06	1.98E-08	8.67E-08	1.98E-08	8.67E-08	6.91E-08	3.03E-07
Benzene	2.10E-03	2.14E-04	3.51E-05	1.54E-04	4.39E-05	1.92E-04	3.20E-05	1.40E-04	2.31E-05	1.01E-04	2.31E-05	1.01E-04	8.06E-05	3.53E-04
Benzo(a)pyrene ³	1.20E-06		2.00E-08	8.78E-08	2.51E-08	1.10E-07	-	-	1.32E-08	5.78E-08	1.32E-08	5.78E-08	4.61E-08	2.02E-07
Benzo(b)fluoranthene ³	1.80E-06		3.01E-08	1.32E-07	3.77E-08	1.65E-07	-	-	1.98E-08	8.67E-08	1.98E-08	8.67E-08	6.91E-08	3.03E-07
Benzo(g,h,i)perylene ³	1.20E-06	2.26E-06	2.00E-08	8.78E-08	2.51E-08	1.10E-07	3.38E-07	1.48E-06	1.32E-08	5.78E-08	1.32E-08	5.78E-08	4.61E-08	2.02E-07
Benzo(k)fluoranthene ³	1.80E-06		3.01E-08	1.32E-07	3.77E-08	1.65E-07	-	-	1.98E-08	8.67E-08	1.98E-08	8.67E-08	6.91E-08	3.03E-07
Chrysene ³	1.80E-06	2.38E-06	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.56E-07	1.56E-06	1.98E-08	8.67E-08	1.98E-08	8.67E-08	6.91E-08	3.03E-07
Dibenzof(a,h)anthracene ³	1.20E-06	1.67E-06	2.00E-08	8.78E-08	2.51E-08	1.10E-07	2.50E-07	1.09E-06	1.32E-08	5.78E-08	1.32E-08	5.78E-08	4.61E-08	2.02E-07
Dichlorobenzene	1.20E-03		2.00E-05	8.78E-05	2.51E-05	1.10E-04	-	-	1.32E-05	5.78E-05	1.32E-05	5.78E-05	4.61E-05	2.02E-04
Ethylbenzene		6.36E-06	-	-	-	-	9.51E-07	4.16E-06	-	-	-	-	-	-
Fluoranthene ³	3.00E-06	4.84E-06	5.01E-08	2.19E-07	6.28E-08	2.75E-07	7.23E-07	3.17E-06	3.30E-08	1.45E-07	3.30E-08	1.45E-07	1.15E-07	5.04E-07
Fluorene ³	2.80E-06	4.47E-06	4.68E-08	2.05E-07	5.86E-08	2.57E-07	6.68E-07	2.93E-06	3.08E-08	1.35E-07	3.08E-08	1.35E-07	1.07E-07	4.71E-07
Formaldehyde	0.08	0.06	1.25E-03	5.49E-03	1.57E-03	6.87E-03	9.12E-03	3.99E-02	8.25E-04	3.61E-03	8.25E-04	3.61E-03	2.88E-03	1.26E-02
Hexane	1.80		3.01E-02	1.32E-01	3.77E-02	1.65E-01	-	-	1.98E-02	8.67E-02	1.98E-02	8.67E-02	6.91E-02	3.03E-01
Indeno(1,2,3-cd)pyrene ³	1.80E-06	2.14E-06	3.01E-08	1.32E-07	3.77E-08	1.65E-07	3.20E-07	1.40E-06	1.98E-08	8.67E-08	1.98E-08	8.67E-08	6.91E-08	3.03E-07
Naphthalene	6.10E-04	1.13E-03	1.02E-05	4.46E-05	1.28E-05	5.59E-05	1.69E-04	7.40E-04	6.71E-06	2.94E-05	6.71E-06	2.94E-05	2.34E-05	1.03E-04
Phenanthrene ³	1.70E-05	1.05E-05	2.84E-07	1.24E-06	3.56E-07	1.56E-06	1.57E-06	6.87E-06	1.87E-07	8.19E-07	1.87E-07	8.19E-07	6.52E-07	2.86E-06
Pyrene ³	5.00E-06	4.25E-06	8.35E-08	3.66E-07	1.05E-07	4.58E-07	6.35E-07	2.78E-06	5.50E-08	2.41E-07	5.50E-08	2.41E-07	1.92E-07	8.40E-07
Toluene	3.40E-03	6.20E-03	5.68E-05	2.49E-04	7.11E-05	3.12E-04	9.27E-04	4.06E-03	3.74E-05	1.64E-04	3.74E-05	1.64E-04	1.30E-04	5.72E-04
o-Xylene		1.09E-04	-	-	-	-	1.63E-05	7.14E-05	-	-	-	-	-	-
Arsenic	2.00E-04	4.00E-06	3.34E-06	1.46E-05	4.19E-06	1.83E-05	5.98E-07	2.62E-06	2.20E-06	9.64E-06	2.20E-06	9.64E-06	7.68E-06	3.36E-05
Beryllium	1.20E-05	3.00E-06	2.00E-07	8.78E-07	2.51E-07	1.10E-06	4.48E-07	1.96E-06	1.32E-07	5.78E-07	1.32E-07	5.78E-07	4.61E-07	2.02E-06
Cadmium	1.10E-03	3.00E-06	1.84E-05	8.05E-05	2.30E-05	1.01E-04	4.48E-07	1.96E-06	1.21E-05	5.30E-05	1.21E-05	5.30E-05	4.22E-05	1.85E-04
Chromium	1.40E-03	3.00E-06	2.34E-05	1.02E-04	2.93E-05	1.28E-04	4.48E-07	1.96E-06	1.54E-05	6.75E-05	1.54E-05	6.75E-05	5.37E-05	2.35E-04
Cobalt	8.40E-05		1.40E-06	6.14E-06	1.76E-06	7.70E-06	-	-	9.24E-07	4.05E-06	9.24E-07	4.05E-06	3.22E-06	1.41E-05
Manganese	3.80E-04	3.00E-06	6.35E-06	2.78E-05	7.95E-06	3.48E-05	4.48E-07	1.96E-06	4.18E-06	1.83E-05	4.18E-06	1.83E-05	1.46E-05	6.39E-05
Mercury	2.60E-04	6.00E-06	4.34E-06	1.90E-05	5.44E-06	2.38E-05	8.97E-07	3.93E-06	2.86E-06	1.25E-05	2.86E-06	1.25E-05	9.98E-06	4.37E-05
Nickel	2.10E-03	3.00E-06	3.51E-05	1.54E-04	4.39E-05	1.92E-04	4.48E-07	1.96E-06	2.31E-05	1.01E-04	2.31E-05	1.01E-04	8.06E-05	3.53E-04
Selenium	2.40E-05	1.50E-05	4.01E-07	1.76E-06	5.02E-07	2.20E-06	2.24E-06	9.82E-06	2.64E-07	1.16E-06	2.64E-07	1.16E-06	9.21E-07	4.03E-06
Total Combustion HAP:			0.03	0.14	0.04	0.17	0.01	0.05	0.02	0.09	0.02	0.09	0.07	0.32

1. Emission factors for natural gas combustion per AP-42 Section 1.4, Tables 1.4-3 and 1.4-4, dated July 1998.
 2. Potential annual emissions are based on the hourly potential emissions from natural gas combustion multiplied by 8,760 hours of operation per year.
 3. HAP because it is Polycyclic Organic Matter (POM).
 4. Emission factors for fuel oil combustion per AP-42 Section 1.4, Tables 1.3-8 and 1.3-10, dated September 1998.

Pollutant	Emission Factors	Emission Factors
	Secondary	Primary
	Natural Gas ¹ (lb/MMscf)	Propane ² (lb/Mgal)
NO _x	100	13
CO	84	7.5
PM	7.6	0.70
PM ₁₀	7.6	0.70
PM _{2.5}	7.6	0.70
SO ₂	0.6	1.50
VOC	5.5	0.8
Lead	5.00E-04	
CO ₂ ³	117,098	12,773

1. AP-42 Section 1.4, Natural Gas Combustion, Tables 1.4-1 and 1.4-2, dated July 1998.
2. AP-42 Section 1.5 Liquefied Petroleum Gas Combustion, Tables 1.5-1 and 1.5-2 dated July 2008. Sulfur is assumed 15 ppm

Equipment	Description	Heat Capacity		Natural Gas		Propane		NOx				CO				PM				PM10				PM2.5					
		Mbtu/hr Gas	mmBtu/hr	mmscf/hr	mgal/hr	lbs/hr	tpy																						
						NG	NG	LP	LP																				
10-ADAC-0001	RTU #1 (410A)	270	2.70E-01	2.70E-04	2.95E-03	2.70E-02	1.18E-01	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.21E-02	9.69E-02	2.05E-03	8.99E-03	2.07E-03	9.05E-03												
10-ADAC-0002	RTU #2 (410A)	270	2.70E-01	2.70E-04	2.95E-03	2.70E-02	1.18E-01	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.21E-02	9.69E-02	2.05E-03	8.99E-03	2.07E-03	9.05E-03												
10-ADAC-0003	RTU #3 EVIS BREAK ROOM (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02												
10-ADAC-0004	RTU #4 (410A)	270	2.70E-01	2.70E-04	2.95E-03	2.70E-02	1.18E-01	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.21E-02	9.69E-02	2.05E-03	8.99E-03	2.07E-03	9.05E-03												
10-ADAC-0005	RTU #5 (410A)	270	2.70E-01	2.70E-04	2.95E-03	2.70E-02	1.18E-01	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.21E-02	9.69E-02	2.05E-03	8.99E-03	2.07E-03	9.05E-03												
10-ADAC-0006	RTU #6 (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02												
10-ADAC-0007	RTU #7 (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02												
10-ADAC-0008	RTU #8 (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02												
10-ADAC-0009	RTU #9 (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02												
10-ADAC-0010	RTU #10 (410A)	405	4.05E-01	4.05E-04	4.43E-03	4.05E-02	1.77E-01	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.32E-02	1.45E-01	3.08E-03	1.35E-02	3.10E-03	1.36E-02												
10-ADAC-0011	RTU #11 (410A)	180	1.80E-01	1.80E-04	1.97E-03	1.80E-02	7.88E-02	2.56E-02	1.12E-01	1.51E-02	6.62E-02	1.48E-02	6.46E-02	1.37E-03	5.99E-03	1.38E-03	6.03E-03												
10-ADAC-0012	RTU #12 (410A)	390	3.90E-01	3.90E-04	4.26E-03	3.90E-02	1.71E-01	5.54E-02	2.43E-01	3.28E-02	1.43E-01	3.20E-02	1.40E-01	2.96E-03	1.30E-02	2.98E-03	1.31E-02												
10-ADAC-0013	RTU #13 (410A)	180	1.80E-01	1.80E-04	1.97E-03	1.80E-02	7.88E-02	2.56E-02	1.12E-01	1.51E-02	6.62E-02	1.48E-02	6.46E-02	1.37E-03	5.99E-03	1.38E-03	6.03E-03												
10-ADAC-0014	RTU #14 (410A)	195	1.95E-01	1.95E-04	2.13E-03	1.95E-02	8.54E-02	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.60E-02	7.00E-02	1.48E-03	6.49E-03	1.49E-03	6.53E-03												
10-ADAC-0015	RTU #15 (410A)	195	1.95E-01	1.95E-04	2.13E-03	1.95E-02	8.54E-02	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.60E-02	7.00E-02	1.48E-03	6.49E-03	1.49E-03	6.53E-03												
10-ADAC-0016	RTU #16 (410A)	195	1.95E-01	1.95E-04	2.13E-03	1.95E-02	8.54E-02	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.60E-02	7.00E-02	1.48E-03	6.49E-03	1.49E-03	6.53E-03												
10-ADAC-0017	RTU #17 (410A)	195	1.95E-01	1.95E-04	2.13E-03	1.95E-02	8.54E-02	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.60E-02	7.00E-02	1.48E-03	6.49E-03	1.49E-03	6.53E-03												
10-EVAC-0001	MUA #1	3125	3.13E+00	3.13E-03	3.42E-02	3.13E-01	1.37E+00	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.56E-01	1.12E+00	2.38E-02	1.04E-01	2.39E-02	1.05E-01												
10-EVAC-0002	MUA #2	3125	3.13E+00	3.13E-03	3.42E-02	3.13E-01	1.37E+00	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.56E-01	1.12E+00	2.38E-02	1.04E-01	2.39E-02	1.05E-01												
10-EVAC-0003	MUA #3	3125	3.13E+00	3.13E-03	3.42E-02	3.13E-01	1.37E+00	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.56E-01	1.12E+00	2.38E-02	1.04E-01	2.39E-02	1.05E-01												
10-EVAC-0004	MUA #4	3125	3.13E+00	3.13E-03	3.42E-02	3.13E-01	1.37E+00	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.56E-01	1.12E+00	2.38E-02	1.04E-01	2.39E-02	1.05E-01												
10-EVAC-0005	MUA #5	233	2.33E-01	2.33E-04	2.55E-03	2.33E-02	1.02E-01	3.31E-02	1.45E-01	1.96E-02	8.57E-02	1.91E-02	8.37E-02	1.77E-03	7.76E-03	1.78E-03	7.81E-03												
10-LRAC-0001	HV-01	2330	2.33E+00	2.33E-03	2.55E-02	2.33E-01	1.02E+00	3.31E-01	1.45E+00	1.96E-01	8.57E-01	1.91E-01	8.37E-01	1.77E-02	7.76E-02	1.78E-02	7.81E-02												
10-LRAC-0002	HV-02	1434	1.43E+00	1.43E-03	1.57E-02	1.43E-01	6.28E-01	2.04E-01	8.92E-01	1.20E-01	5.28E-01	1.18E-01	5.15E-01	1.09E-02	4.77E-02	1.10E-02	4.81E-02												
10-DBAC-0001	KLEEN AIR #1 (nh3 107.4 TON)45,000 cfm	2930	2.93E+00	2.93E-03	3.20E-02	2.93E-01	1.28E+00	4.16E-01	1.82E+00	2.46E-01	1.08E+00	2.40E-01	1.05E+00	2.23E-02	9.75E-02	2.24E-02	9.82E-02												
10-DBAC-0002	KLEEN AIR #2 (nh3 107.4 TON)45,000 cfm	2930	2.93E+00	2.93E-03	3.20E-02	2.93E-01	1.28E+00	4.16E-01	1.82E+00	2.46E-01	1.08E+00	2.40E-01	1.05E+00	2.23E-02	9.75E-02	2.24E-02	9.82E-02												
10-DBAC-0003	KLEEN AIR #3 (nh3 107.4 TON)45,000 cfm	2																											

Equipment	Description	SOx				VOC				Lead				CO2e				Maximum PTE		Maximum PTE		Maximum PTE		Maximum PTE		Maximum PTE		Maximum PTE		Maximum PTE		Maximum PTE			
		NG		LP		NG		LP		NG		LP		NG		LP		NOx		CO		PM		PM10		PM2.5		SOx		VOC		Pb		CO2e	
		lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
10-ADAC-0001	RTU #1 (410A)	1.62E-04	7.10E-04	4.43E-03	1.94E-02	1.49E-03	6.50E-03	2.36E-03	1.03E-02	1.35E-07	5.91E-07			31.62	138.48	37.69	165.09	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.07E-03	9.05E-03	2.07E-03	9.05E-03	2.07E-03	9.05E-03	4.43E-03	1.94E-02	2.36E-03	1.03E-02	1.35E-07	5.91E-07	37.69	165.09
10-ADAC-0002	RTU #2 (410A)	1.62E-04	7.10E-04	4.43E-03	1.94E-02	1.49E-03	6.50E-03	2.36E-03	1.03E-02	1.35E-07	5.91E-07			31.62	138.48	37.69	165.09	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.07E-03	9.05E-03	2.07E-03	9.05E-03	2.07E-03	9.05E-03	4.43E-03	1.94E-02	2.36E-03	1.03E-02	1.35E-07	5.91E-07	37.69	165.09
10-ADAC-0003	RTU #3 EVIS BREAK ROOM (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0004	RTU #4 (410A)	1.62E-04	7.10E-04	4.43E-03	1.94E-02	1.49E-03	6.50E-03	2.36E-03	1.03E-02	1.35E-07	5.91E-07			31.62	138.48	37.69	165.09	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.07E-03	9.05E-03	2.07E-03	9.05E-03	2.07E-03	9.05E-03	4.43E-03	1.94E-02	2.36E-03	1.03E-02	1.35E-07	5.91E-07	37.69	165.09
10-ADAC-0005	RTU #5 (410A)	1.62E-04	7.10E-04	4.43E-03	1.94E-02	1.49E-03	6.50E-03	2.36E-03	1.03E-02	1.35E-07	5.91E-07			31.62	138.48	37.69	165.09	3.84E-02	1.68E-01	2.27E-02	9.93E-02	2.07E-03	9.05E-03	2.07E-03	9.05E-03	2.07E-03	9.05E-03	4.43E-03	1.94E-02	2.36E-03	1.03E-02	1.35E-07	5.91E-07	37.69	165.09
10-ADAC-0006	RTU #6 (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0007	RTU #7 (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0008	RTU #8 (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0009	RTU #9 (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0010	RTU #10 (410A)	2.43E-04	1.06E-03	6.64E-03	2.91E-02	2.23E-03	9.76E-03	3.54E-03	1.55E-02	2.03E-07	8.87E-07			47.42	207.72	56.54	247.63	5.75E-02	2.52E-01	3.40E-02	1.49E-01	3.10E-03	1.36E-02	3.10E-03	1.36E-02	3.10E-03	1.36E-02	6.64E-03	2.91E-02	3.54E-03	1.55E-02	2.03E-07	8.87E-07	56.54	247.63
10-ADAC-0011	RTU #11 (410A)	1.08E-04	4.73E-04	2.95E-03	1.29E-02	9.90E-04	4.34E-03	1.57E-03	6.89E-03	9.00E-08	3.94E-07			21.08	92.32	25.13	110.06	2.56E-02	1.12E-01	1.51E-02	6.62E-02	1.38E-03	6.03E-03	1.38E-03	6.03E-03	1.38E-03	6.03E-03	2.95E-03	1.29E-02	1.57E-03	6.89E-03	9.00E-08	3.94E-07	25.13	110.06
10-ADAC-0012	RTU #12 (410A)	2.34E-04	1.02E-03	6.39E-03	2.80E-02	2.15E-03	9.40E-03	3.41E-03	1.49E-02	1.95E-07	8.54E-07			45.67	200.03	54.44	238.46	5.54E-02	2.43E-01	3.28E-02	1.43E-01	2.98E-03	1.31E-02	2.98E-03	1.31E-02	2.98E-03	1.31E-02	6.39E-03	2.80E-02	3.41E-03	1.49E-02	1.95E-07	8.54E-07	54.44	238.46
10-ADAC-0013	RTU #13 (410A)	1.08E-04	4.73E-04	2.95E-03	1.29E-02	9.90E-04	4.34E-03	1.57E-03	6.89E-03	9.00E-08	3.94E-07			21.08	92.32	25.13	110.06	2.56E-02	1.12E-01	1.51E-02	6.62E-02	1.38E-03	6.03E-03	1.38E-03	6.03E-03	1.38E-03	6.03E-03	2.95E-03	1.29E-02	1.57E-03	6.89E-03	9.00E-08	3.94E-07	25.13	110.06
10-ADAC-0014	RTU #14 (410A)	1.17E-04	5.12E-04	3.20E-03	1.40E-02	1.07E-03	4.70E-03	1.70E-03	7.47E-03	9.75E-08	4.27E-07			22.83	100.01	27.22	119.23	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.49E-03	6.53E-03	1.49E-03	6.53E-03	1.49E-03	6.53E-03	3.20E-03	1.40E-02	1.70E-03	7.47E-03	9.75E-08	4.27E-07	27.22	119.23
10-ADAC-0015	RTU #15 (410A)	1.17E-04	5.12E-04	3.20E-03	1.40E-02	1.07E-03	4.70E-03	1.70E-03	7.47E-03	9.75E-08	4.27E-07			22.83	100.01	27.22	119.23	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.49E-03	6.53E-03	1.49E-03	6.53E-03	1.49E-03	6.53E-03	3.20E-03	1.40E-02	1.70E-03	7.47E-03	9.75E-08	4.27E-07	27.22	119.23
10-ADAC-0016	RTU #16 (410A)	1.17E-04	5.12E-04	3.20E-03	1.40E-02	1.07E-03	4.70E-03	1.70E-03	7.47E-03	9.75E-08	4.27E-07			22.83	100.01	27.22	119.23	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.49E-03	6.53E-03	1.49E-03	6.53E-03	1.49E-03	6.53E-03	3.20E-03	1.40E-02	1.70E-03	7.47E-03	9.75E-08	4.27E-07	27.22	119.23
10-ADAC-0017	RTU #17 (410A)	1.17E-04	5.12E-04	3.20E-03	1.40E-02	1.07E-03	4.70E-03	1.70E-03	7.47E-03	9.75E-08	4.27E-07			22.83	100.01	27.22	119.23	2.77E-02	1.21E-01	1.64E-02	7.17E-02	1.49E-03	6.53E-03	1.49E-03	6.53E-03	1.49E-03	6.53E-03	3.20E-03	1.40E-02	1.70E-03	7.47E-03	9.75E-08	4.27E-07	27.22	119.23
10-EVAC-0001	MUA #1	1.88E-03	8.21E-03	5.12E-02	2.24E-01	1.72E-02	7.53E-02	2.73E-02	1.20E-01	1.56E-06	6.84E-06			365.93	1602.78	436.24	1910.72	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.39E-02	1.05E-01	2.39E-02	1.05E-01	2.39E-02	1.05E-01	5.12E-02	2.24E-01	2.73E-02	1.20E-01	1.56E-06	6.84E-06	436.24	1910.72
10-EVAC-0002	MUA #2	1.88E-03	8.21E-03	5.12E-02	2.24E-01	1.72E-02	7.53E-02	2.73E-02	1.20E-01	1.56E-06	6.84E-06			365.93	1602.78	436.24	1910.72	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.39E-02	1.05E-01	2.39E-02	1.05E-01	2.39E-02	1.05E-01	5.12E-02	2.24E-01	2.73E-02	1.20E-01	1.56E-06	6.84E-06	436.24	1910.72
10-EVAC-0003	MUA #3	1.88E-03	8.21E-03	5.12E-02	2.24E-01	1.72E-02	7.53E-02	2.73E-02	1.20E-01	1.56E-06	6.84E-06			365.93	1602.78	436.24	1910.72	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.39E-02	1.05E-01	2.39E-02	1.05E-01	2.39E-02	1.05E-01	5.12E-02	2.24E-01	2.73E-02	1.20E-01	1.56E-06	6.84E-06	436.24	1910.72
10-EVAC-0004	MUA #4	1.88E-03	8.21E-03	5.12E-02	2.24E-01	1.72E-02	7.53E-02	2.73E-02	1.20E-01	1.56E-06	6.84E-06			365.93	1602.78	436.24	1910.72	4.44E-01	1.94E+00	2.63E-01	1.15E+00	2.39E-02	1.05E-01	2.39E-02	1.05E-01	2.39E-02	1.05E-01	5.12E-02	2.24E-01	2.73E-02	1.20E-01	1.56E-06	6.84E-06	436.24	1910.72
10-EVAC-0005	MUA #5	1.40E-04	6.12E-04	3.82E-03	1.67E-02	1.28E-03	5.61E-03	2.04E-03	8.92E-03	1.17E-07	5.10E-07			27.28	119.50	32.53	142.46	3.31E-02	1.45E-01	1.96E-02	8.57E-02	1.78E-03	7.81E-03	1.78E-03	7.81E-03	1.78E-03	7.81E-03	3.82E-03	1.67E-02	2.04E-03	8.92E-03	1.17E-07	5.10E-07	32.53	142.46
10-LRAC-0001	HV-01	1.40E-03	6.12E-03	3.82E-02	1.67E-01	1.28E-02	5.61E-02	2.04E-02	8.92E-02	1.17E-06	5.10E-06			272.84	1195.03	325.26	1424.63	3.31E-01	1.45E+00	1.96E-01	8.57E-01	1.78E-02	7.81E-02	1.78E-02	7.81E-02	1.78E-02	7.81E-02	3.82E-02	1.67E-01	2.04E-02	8.92E-02	1.17E-06	5.10E-06	325.26	1424.63
10-LRAC-0002	HV-02	8.60E-04	3.77E-03	2.35E-02	1.03E-01	7.89E-03	3.45E-02	1.25E-02	5.49E-02	7.17E-07	3.14E-06			167.92	735.48	200.18	876.79	2.04E-01	8.92E-01	1.20E-01	5.28E-01	1.10E-02	4.81E-02	1.10E-02	4.81E-02	1.10E-02	4.81E-02	2.35E-02	1.03E-01	1.25E-02	5.49E-02	7.17E-07	3.14E-06	200.18	876.79
10-DBAC-0001	KLEEN AIR #1 (nh3 107.4 TON)45,000 cfm	1.76E-03	7.70E-03	4.80E-02	2.10E-																														

Grain Operations
Equity Group - Kentucky Division LLC
Albany, Kentucky

Emission Factor ¹	PM (lb/ton)	PM10 (lb/ton)	PM2.5 (lb/ton)
Grain Receiving Straight Truck (SCC 3-02-005-51)	0.18	0.059	0.01
Grain Receiving Hopper Truck (SCC 3-02-005-52)	0.035	0.0078	0.0013
Headhouse and Grain Handling (SCC 3-02-005-30)	0.061	0.034	0.0058
Storage Bin (vent) (SCC 3-02-005-40)	0.025	0.0063	0.0011
Grain Shipping Truck (SCC 3-02-005-60)	0.086	0.029	0.0049

1. Emission factors from AP 42 Table 9.9.1-1

PERMITTED EMISSIONS FROM 401 KAR 59:010 Section 4 (allowable PM emissions)

interpolation of the data for process weight rates up to 60,000 lb/hr. shall be accomplished by use of the equation

$$E = 3.59P^{0.62} \quad \text{where } E = \text{rate of emission in lb/hr and } P = \text{process weight rate in tons/hr.}$$

$$E = 3.59 \times 11.42^{0.62} \quad (\text{based on } 11.42 \text{ tons max per hour thruput})$$

Permitted Emissions = 16.2 pounds PM10 per hour

GRAIN PARTICULATE EMISSIONS
BASED ON 100,000 tons/year grain transfer

Emission Unit	Description	Equipment Capacity (tons/hr)	Actual Capacity (tons/hr)	Emissions (lbs/hr)			Emissions (TPY)		
				PM	PM10	PM2.5	PM	PM10	PM2.5
EU09	Truck Unloading	175	11.42	1.81	0.62	0.10	7.91	2.71	0.43
EU10	Auger Conveyor to Silo	175	11.42	0.70	0.39	0.07	3.05	1.70	0.29
EU11	Silo Transfer Conveyor	175	11.42	0.70	0.39	0.07	3.05	1.70	0.29
EU12	Silo #1	125	2.85	0.07	0.02	0.00	0.31	0.08	0.01
EU13	Silo #2	125	2.85	0.07	0.02	0.00	0.31	0.08	0.01
EU14	Silo #3	125	2.85	0.07	0.02	0.00	0.31	0.08	0.01
EU15	Silo #4	125	2.85	0.07	0.02	0.00	0.31	0.08	0.01
EU16	Auger Conveyor from Silo #1	175	2.85	0.07	0.10	0.02	0.31	0.43	0.07
EU17	Auger Conveyor from Silo #2	175	2.85	0.07	0.10	0.02	0.31	0.43	0.07
EU18	Auger Conveyor from Silo #3	175	2.85	0.07	0.10	0.02	0.31	0.43	0.07
EU19	Auger Conveyor from Silo #4	175	2.85	0.07	0.10	0.02	0.31	0.43	0.07
EU20	Truck Loadout	175	11.42	0.98	0.33	0.06	4.30	1.45	0.25
Total Emissions				4.75	2.19	0.37	20.81	9.57	1.60

Theoretical PM emissions in TONS PER YEAR based on maximum equipment process rates at 8,760 hours/year		
PM	PM10	PM2.5
121.3	41.5	6.7
46.8	26.1	4.4
46.8	26.1	4.4
13.7	3.4	0.6
13.7	3.4	0.6
13.7	3.4	0.6
19.2	26.1	4.4
19.2	26.1	4.4
19.2	26.1	4.4
19.2	26.1	4.4
65.9	22.2	3.8
412.1	233.9	39.5

Process Discussion - The feed is processed at their Franklin, Kentucky. This facility is used only as a transfer point. The feed is stored at this facility then hauled to poultry farms.

FEED TRANSFER PROCESS ASSUMPTIONS

- Current grain transfer in 2009 was 89,000 tons and was based on the maximum feed delivered to the poultry suppliers to this facility. The facility is at maximum capacity for handling poultry processing and therefore the 89,000 is considered a limit based on the bottleneck of processing rates and capacity.
- For purposes of this permit, the maximum rate of grain transfer in future years is assumed to be 100,000 tons/year
 Grain trucks carry 48,000 pounds of grain (each)
- Unloading cycle is 30 minutes to unload truck and 20 minutes to reset prior to unloading next truck
- 85% of grain is delivered by straight trucks and 15% is by hopper truck - this factor is applied to EU09
- Grain Transfer Rate
 Maximum = 24 tons/hour
 Average = 100,000 tons per year / 8760 = 11.415525 tons/hour
- Transfers of grain to silos and from silos via augers is based on average rate / 4 since there are 4 silos and four loadout augers (to one truck loadout)
 Example - if only one silo was being filled, then the transfer rate from the unloading truck to the silo would be 11.41 tons per hour and the transfer rate to the other three silos would be zero.

Internal Engine Combustion

Equity Group - Kentucky Division LLC

Albany, Kentucky

Source	Emission Source ID	Gross Horsepower (bhp)	Heat Input Capacity ¹ (MMBtu/hr)	Diesel Heating Value (Btu/scf)	Hourly Diesel Consumption (Mgal/hr)	Annual Hours of Operation (hr/yr)
Fire Pump	EU07	117	0.82	140,000	0.006	500

Make	Model #	Serial Number	Rating in KW	Fuel Type	Tank Size Gal	Horse power	Tank Location	Estimated gals/yr
Syncro Flo	1500 FHSC85PH	980881		Diesel	165	117	Outside	3,000

Criteria Pollutant Potential Emissions from Fire Pump

Pollutant	Emission Factors Diesel ² (lb/hp-hr)	Emergency Generator Potential	
		Diesel (lb/hr)	Annual ³ (tpy)
NO _x	3.10E-02	3.63	0.91
CO	6.68E-03	0.78	0.20
PM	2.20E-03	0.26	0.06
PM ₁₀	2.20E-03	0.26	0.06
PM _{2.5}	2.20E-03	0.26	0.06
SO ₂	2.05E-03	0.24	0.06
VOC	2.51E-03	0.29	0.07
CO ₂ e ⁴	1.15	134.55	33.64

1. 7000 Btu/hp hr conversion per AP-42 Table 3.3.-1.

2. Emission factors obtained from AP-42, Section 3.3, Table 3.3-1 Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines (10/96). VOC and SO2 emissions conservatively calculated using AP-42 emission factors.

3. The engines are only used for emergency back up power; therefore, potential annual emissions are estimated based on 500 hr/yr.

4. CO₂e factor calculated based on the emission factors for CO₂, CH₄, and N₂O from 40 CFR 98, Subpart C, Tables C-1 and C-2, and the global warming potential (GWP)

Internal Engine Combustion HAP Emissions
Equity Group - Kentucky Division LLC
Albany, Kentucky

Pollutant	Emission Factors Diesel ¹ (lb/hp-hr)	Emergency Engine Potential Emissions ²	
		Diesel (lb/hr)	Annual ³ (tpy)
Benzene	6.53E-06	7.64E-04	1.91E-04
Toluene	2.86E-06	3.35E-04	8.37E-05
Xylene	2.00E-06	2.33E-04	5.84E-05
Propylene	1.81E-05	2.11E-03	5.28E-04
1,3-Butadiene	2.74E-07	3.20E-05	8.01E-06
Formaldehyde	8.26E-06	9.66E-04	2.42E-04
Acetaldehyde	5.37E-06	6.28E-04	1.57E-04
Acrolein	6.48E-07	7.58E-05	1.89E-05
Naphthalene	5.94E-07	6.95E-05	1.74E-05
Acenaphthylene	3.54E-08	4.14E-06	1.04E-06
Acenaphthene	9.94E-09	1.16E-06	2.91E-07
Fluorene	5.33E-08	6.23E-06	1.56E-06
Phenanthrene	2.06E-07	2.41E-05	6.02E-06
Anthracene	1.31E-08	1.53E-06	3.83E-07
Fluoranthene	5.33E-08	6.23E-06	1.56E-06
Pyrene	3.35E-08	3.91E-06	9.79E-07
Benzo(a)anthracene	1.18E-08	1.38E-06	3.44E-07
chrysene	2.47E-09	2.89E-07	7.23E-08
Benzo(b)fluoranthene	6.94E-10	8.12E-08	2.03E-08
Benzo(k)fluoranthene	8.05E-10	9.42E-08	2.35E-08
Benzo(a)pyrene	1.32E-09	1.54E-07	3.85E-08
Indeno(1,2,3-cd)pyrene	2.63E-09	3.07E-07	7.68E-08
Dibenz(a, h)anthracene	4.08E-09	4.77E-07	1.19E-07
Benzo(g,h,l)perylene	3.42E-09	4.00E-07	1.00E-07
Total HAP		5.27E-03	1.32E-03

1. Emission factors obtained from AP-42, Section 3.3, Table 3.3-1 Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines (10/96). VOC and SO₂ emissions conservatively calculated using AP-42 emission factors.

HAP emission factors were converted from lb/MMBtu to lb/hp-hr using a conversion factor of 7,000 Btu/hp-hr per AP-42.

2. Potential emissions are calculated based on the rated capacity of the engine (117 hp fire pump).

3. The engine is only used for emergency back up power; therefore, potential annual emissions are estimated based on 500 hr/yr.

Diesel Tank Calculations
 Equity Group- Kentucky Division LLC
 Albany, KY

Emissions are calculated from Tanks ESP software

Source		Fire Pump Diesel Tank
Tank 1		T01
Fuel		No. 2 Diesel Fuel
Emissions	lbs/yr	5.70E-02
	tpy	2.85E-05

Diesel Tank ESP Calculations
 Equity Group - Kentucky Division LLC
 Albany, Kentucky

Tank Summaries for 2020 Potential Emissions

Site: Albany KY, Albany Processing

Equations for this site: After 2018 AP-42 revisions H/D ratio: calculated

Tank ID	Tank Diameter (ft)	Tank Type	Product	RVP	Throughput (gal)	Bulk Liquid Temperature (degF)	Avg. Liquid Surface Temp. (degF)	Avg. TVP (psia)	Includes a landing loss?
Fire Pump Tank	3.3851375	Horizontal Tank	Diesel		2999.999982	57.19613	59.599207	0.006396832	N

Initial fill?	Includes a tank cleaning?	Number of Days	Estimated standing losses (lbs)	Estimated working losses (lbs)	Routine Emissions (lbs)	Non Routine Emissions (lbs)	Total estimated emissions (lbs)
N	N	365	0.026988426	0.029982181	0.056970608	0	0.056970608

Acetic Acid and PAA Potential Emission Estimates

Facility Name: Albany, Ky
 Reviewed: 3/1/2020

Constants for VOC Emission Calculations

Water Molecular Weight (M)	18.02 lb/lb-mol
Water Mass Transfer Coefficient (K)	0.83 cm/s
Water Mass Transfer Coefficient (K)	98.031 ft/hr
Ideal Gas Constant	998.9 ft ³ mmHg/lb-mol K
Density Water	8.34 lb/gal
Conversion Factor	3.7854 dm ³ /gallon
Acetic Acid Concentration	30-60%
Peroxyacetic Acid Concentration	15-30%

Constants for VOC Emission Calculations for Acetic Acid and Peroxyacetic Acid

Chemical	Henry's Law Constants ¹		T0 (K)	Molecular Weight (M) (lb/lb-mol)	Mass Transfer Coefficient (K) (ft/hr)
	kH0 (g-mol/dm ³ atm)	-ΔH/R (K)			
Acetic Acid	980	4,900	298.15	60.05	65.63
Peroxyacetic Acid	840	5,300	298.15	76.05	60.66

1. Henry's Law Constants obtained from Compilation of Henry's Law Constants for Inorganic and Organic Species of Potential Importance in Environmental Chemistry, Version 3 by R. Sander April 8, 1999.

Constants for VOC Emission Calculations for the PAA Dip Tanks

Equipment	Temperature ¹ (C)	Temperature (K)	Henry's Constant		Concentration PAA ¹ ppm	Concentration	
			Acetic Acid kH (M/atm)	Peroxyacetic Acid kH (M/atm)		Acetic Acid M (lb-mol/dm ³)	Peroxyacetic Acid M (lb-mol/dm ³)
OLR 1	15.5	289	1,683	1,508	300	6.60E-06	2.61E-06
OLR 2	15.5	289	1,683	1,508	300	6.60E-06	2.61E-06
FECAL CABINET 1	15.5	289	1,683	1,508	300	6.60E-06	2.61E-06
FECAL CABINET 2	15.5	289	1,683	1,508	300	6.60E-06	2.61E-06
SAVAGE DIP	15.5	289	1,683	1,508	300	6.60E-06	2.61E-06
PRE-CHILLER 1	0.55	274	4,254	4,111	1300	2.86E-05	1.13E-05
PRE-CHILLER 2	0.55	274	4,254	4,111	1300	2.86E-05	1.13E-05
CHILLER 1	0.55	274	4,254	4,111	130	2.86E-06	1.13E-06
CHILLER 2	0.55	274	4,254	4,111	130	2.86E-06	1.13E-06
FINISHING CHILLER	0.55	274	4,254	4,111	1400	3.08E-05	1.22E-05
DEBONE SAVAGE CUTUP LINE	15.5	289	1,683	1,508	1400	3.08E-05	1.22E-05
WING DIP1	15.5	289	1,683	1,508	700	1.54E-05	6.08E-06
WING DIP2	15.5	289	1,683	1,508	700	1.54E-05	6.08E-06
TENDER DIP 1	15.5	289	1,683	1,508	700	1.54E-05	6.08E-06
TENDER DIP 2	15.5	289	1,683	1,508	700	1.54E-05	6.08E-06
BREAST DIP1	15.5	289	1,683	1,508	700	1.54E-05	6.08E-06
BREAST DIP 2	15.5	289	1,683	1,508	700	1.54E-05	6.08E-06

1. Temperatures and concentrations based on operating data provided by Albany Processing. Temperatures and concentrations are assumed to be at the highest of the ranges allowed.

Table A-7. Potential VOC Emissions for PAA Dip Tanks

Equipment	Partial Pressure		Evaporation Surface Area (ft ²)	Evaporation Rate ¹		Evaporation Rate ¹	
	Acetic Acid mmHg	Peroxyacetic Acid mmHg		Acetic Acid (lb/hr)	Peroxyacetic Acid (lb/hr)	Acetic Acid (tpy)	Peroxyacetic Acid (tpy)
OLR 1	1.35E-03	5.96E-04	8,400	1.55E-01	8.01E-02	0.6802	0.3509
OLR 2	1.35E-03	5.96E-04	8,400	1.55E-01	8.01E-02	0.6802	0.3509
FECAL CABINET 1	1.35E-03	5.96E-04	8,400	1.55E-01	8.01E-02	0.6802	0.3509
FECAL CABINET 2	1.35E-03	5.96E-04	8,400	1.55E-01	8.01E-02	0.6802	0.3509
SAVAGE DIP	1.35E-03	5.96E-04	6	1.11E-04	5.72E-05	0.0005	0.0003
PRE-CHILLER 1	2.32E-03	9.47E-04	225	7.52E-03	3.60E-03	0.0329	0.0158
PRE-CHILLER 2	2.32E-03	9.47E-04	225	7.52E-03	3.60E-03	0.0329	0.0158
CHILLER 1	2.32E-04	9.47E-05	720	2.41E-03	1.15E-03	0.0105	0.0050
CHILLER 2	2.32E-04	9.47E-05	720	2.41E-03	1.15E-03	0.0105	0.0050
FINISHING CHILLER	2.50E-03	1.02E-03	20	7.20E-04	3.44E-04	0.0032	0.0015
DEBONE SAVAGE CUTUP LINE	6.31E-03	2.78E-03	6	5.18E-04	2.67E-04	0.0023	0.0012
WING DIP1	3.16E-03	1.39E-03	12	5.18E-04	2.67E-04	0.0023	0.0012
WING DIP2	3.16E-03	1.39E-03	12	5.18E-04	2.67E-04	0.0023	0.0012
TENDER DIP 1	3.16E-03	1.39E-03	12	5.18E-04	2.67E-04	0.0023	0.0012
TENDER DIP 2	3.16E-03	1.39E-03	12	5.18E-04	2.67E-04	0.0023	0.0012
BREAST DIP1	3.16E-03	1.39E-03	12	5.18E-04	2.67E-04	0.0023	0.0012
BREAST DIP 2	3.16E-03	1.39E-03	12	5.18E-04	2.67E-04	0.0023	0.0012
Total Emissions						2.83	1.46

1. Evaporation rate estimated based on EPA's EIIP Volume II: Chapter 16, Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, August 2007. Equation 3-24, & 3-27

Example Calculation of Acetic Acid in PAA Dip Tanks

Henry's Law Constant	$\frac{980 \text{ g-mol}}{\text{dm}^3 \text{ atm}}$	exp (	4,900 K (	$\frac{1}{288.65 \text{ K}}$	-	$\frac{1}{298.15 \text{ K}}$) =
Concentration of acetic acid	$\frac{300 \text{ lb PAA}}{1,000,000 \text{ lb Water}}$	$\frac{8.34 \text{ lb}}{\text{gallon}}$	$\frac{\text{gallon}}{3.7854 \text{ dm}^3}$	$\frac{0.60 \text{ lb acetic acid}}{\text{lb PAA}}$	$\frac{\text{lb-mol}}{60.05 \text{ lb}}$	=	$\frac{6.60E-6 \text{ lb-mol acetic acid}}{\text{dm}^3}$
Partial pressure of acetic acid	$\frac{6.60E-6 \text{ lb-mol}}{\text{dm}^3}$	$\frac{\text{dm}^3 \text{ atm}}{1,683 \text{ g-mol}}$	$\frac{453.59 \text{ g-mol}}{\text{lb-mol}}$	$\frac{760 \text{ mmHg}}{\text{atm}}$	=	$\frac{1.35E-3 \text{ mmHg acetic acid}}{\text{dm}^3 \text{ atm}}$	$\frac{1,683 \text{ g-mol}}{\text{dm}^3 \text{ atm}}$
Mass transfer coefficient	$\frac{98.03 \text{ ft (water)}}{\text{hr}}$	(	$\frac{18.02 \text{ lb/lb-mol (water)}}{60.05 \text{ lb/lb-mol (acetic acid)}}$) ^(1/3) =	$\frac{65.63 \text{ ft (acetic acid)}}{\text{hr}}$			
Evaporation rate of acetic acid	$\frac{60.05 \text{ lb (acetic acid)}}{\text{lb-mol}}$	$\frac{65.63 \text{ ft}}{\text{hr}}$	$\frac{8400 \text{ ft}^2}{\text{hr}}$	$\frac{1.35E-3 \text{ mmHg}}{288.65 \text{ K}}$	=	$\frac{1.55E-01 \text{ lb acetic acid}}{\text{hr}}$	

Chemical Name	Manufacturer	MSDS Date	Product Code	Approval	Regulatory Forma	Specific Gravity	Density (lbs/gal)
Vertex CSS-10	Vertex	10/6/1998	Vertex CSS-10	Approved	SDS		0
Chemstation 30169 Foam	Chemstation	4/7/2015	30169	Approved	SDS	1.167	9.73278
Chemstation 4564 Scrub Soap	Chemstation	5/20/2015	4564	Approved	SDS	1.031	8.59854
Chemsan HQ Sanitizer	Chemstation	4/14/2016	CHEMSANHQ	Approved	SDS	0.994	8.28996
Chemstation 3260 CIP	Chemstation	4/19/2015	3260	Approved	SDS	1.158	9.65772
Chemstation 9522 acid	Chemstation	4/19/2015	9522	Approved	SDS	1.122	9.35748
Chemstation Sonny Lube	Chemstation	5/1/2015	Sonny Lube	Approved	SDS	0.76	6.3384

Usage Rates (gal/mo)	VOC (lbs/mo)	Projected Annual Usage (lbs)	Projected VOC (tpy)	Projected HAP (tpy)	VOC	HAP	Units
2340	0.00	0.00	0.00	0.00	0	0	%
610	0.00	78368.34	0.00	0.00	0	0	%
640	550.31	72640.47	3.63	0.00	10	0	%
30	24.87	3282.82	0.16	0.00	10	0	%
580	0.00	73939.50	0.00	0.00	0	0	%
58	0	696	0.00	0.00	0	0	%
180	570.456	2160	0.54	0.00	50	0	%
		Total Actual VOC	4.34				
		Potential VOC (Scaled up to 1.5 times actual usage)	6.50				

Cooling Condensers

Equity Group - Kentucky Division LLC

Albany, Kentucky

Emissions from cooling condensers are estimated using the methodology of AP-42 Section 13.4. Emissions estimates are summarized in the table below.

Description	Maximum TDS (ppm)	Drift Rate (%)	Flow Rate (gpm)	PM/PM10 Emissions ^a	
				(lb/hr)	(tpy)
Cooling Tower 1	1,500	0.0050	1,668	0.06	0.27
Cooling Tower 2	1,500	0.0050	1,668	0.06	0.27
Cooling Tower 3	1,500	0.0050	1,668	0.06	0.27
Cooling Tower 4	1,500	0.0050	1,668	0.06	0.27
				0.25	1.10

^a For ease of analysis, PM10 emissions are assumed to be equal to PM emissions. In actuality, they will be only a fraction of total PM.

Example Calculations:

$$\text{PM lb/hr} = \text{flow rate (gal/min)} * 60 \text{ min/hr} * \text{drift rate\%/100} * \text{TDS ppm/1,000,000} * 8.34 \text{ lb water/gal water}$$

$$= 1,130 \text{ gal/min} * 60 \text{ min/hr} * 0.005/100 * 1,000 \text{ parts/1,000,000 parts} * 8.34 \text{ lb water/gal} = 0.025 \text{ lb/hr}$$

$$\text{PM tpy} = 0.025 \text{ lb/hr} * 8,760 \text{ hr/yr} * \text{ton/2,000 lb} = 0.11 \text{ tons/yr}$$

Haul Roads
Equity Group - Kentucky Division LLC
Albany, Kentucky

The facility's Franklin Ky operation holds a KY Air Permit and has similar grain handling and haul road length as the Albany, KY facility. The emission factors for haul roads from the Franklin air permit (AI NO 3969) for the Franklin emission Point 14 is 0.0453 pounds of PM10 per ton grain processed and 0.078 pounds of PM per ton grain processed with 90% control for dust suppression methods.

For purposes of this permit, the Albany KY facility will use the following factors:

	PM	PM10	PM2.5 Note 1
grain transfer per year	100,000	100,000	100,000
grain transfer per hour (average)	11.4	11.4	11.4
PM factor lbs/ton grain	0.078	0.0453	0.021
pounds per hour uncontrolled	0.8904	0.5171	0.2397
hr/yr	8760	8760	8760
lbs/yr	7800	4530	2100
lbs/ton	2000	2000	2000
Tons per year uncontrolled	3.90	2.27	1.05
Pounds per hour controlled (assume 90%)	0.089	0.005	0.002
hr/yr controlled	8760	8760	8760
lbs/yr controlled	780	39.7	18.4
lbs/ton	2000	2000	2000
tons/year controlled	0.39	0.02	0.01

Note 1 - assumed 50% of PM10 is PM2.5



July 17, 2025

To: File

RE: Signatory Authority

The Manager listed below is hereby authorized to serve as my delegated Responsible Official to sign permit applications, renewals and terminations required by permits, regulations and/or compliance plans for the location listed below:

Delegated Responsible Official			
Name	Title	Legal Entity	Facility Address
Tracy Reese	Complex Manager	Keystone Foods LLC Processing Plant	2294KY HWY 90W Albany, KY 42602
Tracy Reese	Complex Manager	Keystone Foods LLC Franklin Feed mill & Hatchery	3150 Nashville Rd. Franklin, KY 42134

The Manager listed below is hereby designated to serve as a Cognizant Official (or duly authorized representative) for signing reports, inspection certifications, etc., by environmental permits, regulations and other information requested by the KDEP Director.

Delegated Cognizant Official			
Name	Title	Legal Entity	Facility Address
Jason York	Complex Environmental Manger	Keystone Foods LLC Processing Plant	2294KY HWY 90W Albany, KY 42602
Jason York	Complex Environmental Manger	Keystone Foods LLC Franklin Feed mill & Hatchery	3150 Nashville Rd. Franklin, KY 42134
Tony Delk	Plant Manager	Keystone Foods LLC Processing Plant	2294 KY HWY 90W Albany, KY 42602

Regards,


Dustin Tippin

Vice President Operations