Commonwealth of Kentucky
Division for Air Quality

STATEMENT OF BASIS / SUMMARY

Conditional Major, Operating
Permit: F-24-053
Marzetti Manufacturing Company
1000 Top Quality Drive
Horse Cave, KY 42749
November 6, 2024
Michael Baidy, Reviewer

SOURCE ID:	21-099-00035
AGENCY INTEREST:	71651
ACTIVITY:	APE20240001

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 2035, Pickled Fruits and Vegetables, Vegetable Sauces and Seasonings, and Salad Dressings (sauces and salad dressings)

Single Source Det. ☐ Yes ☒ No If Yes, Affiliated Source AI:

Source-wide Limit ☒ Yes ☐ No If Yes, See Section 4, Table A

28 Source Category ☐ Yes ☒ No If Yes, Category:

County: Hart
Nonattainment Area ☒ N/A ☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☐ Ozone ☐ Lead
If yes, list Classification: N/A

PTE* greater than 100 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☒ VOC

PTE* greater than 250 tpy for any criteria air pollutant ☒ Yes ☐ No
If yes, for what pollutant(s)?
☐ PM_{10} ☐ $PM_{2.5}$ ☐ CO ☐ NO_X ☐ SO_2 ☒ VOC

PTE* greater than 10 tpy for any single hazardous air pollutant (HAP) ☐ Yes ☒ No
If yes, list which pollutant(s): N/A

PTE* greater than 25 tpy for combined HAP ☐ Yes ☒ No

*PTE does not include self-imposed emission limitations.

Description of Facility:
Marzetti Manufacturing Company operates a food products manufacturing facility in Horse Cave, Kentucky. The facility produces sauces and dressings for food service customers.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-24-053 Activity: APE20240001

Application Received: August 16, 2024 Application Complete Date(s): October 13, 2024

Permit Action: ☐ Initial ☒ Renewal ☐ Significant Rev ☐ Minor Rev ☐ Administrative

Construction/Modification Requested? ☐Yes ☒No

Previous 502(b)(10) or Off-Permit Changes incorporated with this permit action ☐Yes ☒No

Description of Action:
Marzetti Manufacturing Company requested a permit renewal with several changes. Additional changes were submitted as an addendum after the renewal package was submitted.

- Updating EU 09-01 and 21-01with correct cyclone control device description (Rotoclone 1).
- Updating EU 09-02 and 21-02 to specify that the Rotoclone does not control VOC.
- Updating EU 08 with correct cyclone control device description (Rotoclone 2).
- Updating EU 10 "Ink Jet and Spray Stencil" to clarify the emissions vent inside the facility and not through a stack.

Addendum submitted November 1, 2024:

- Updating EU 08 name from "Spice Room" to "Legacy Spice Room"
- Updating EU 09 name from "Cook Kitchen Cooking Vessels" to "Cook Kitchen Cooking Vessels – Legacy Cook Kitchens 21-22".
- Updating EU 21-01 name from "Proprietary Spice Mixture/Dry Ingredient Transfer" to "Spice Room Expansion, Dry Ingredient Transfer"
- Adding control device "Camfil Fan 1" to EU 21-01 to control particulate matter.

F-24-053 Emission Summary		
Pollutant	2023 Actual (tpy)	PTE F-24-053 (tpy)
CO	3.50	35.42
NOx	4.32	43.98
PT	4.75E-01	5.06
PM_{10}	4.75E-01	4.37
$PM_{2.5}$	4.70E-01	2.69
SO_2	3.86E-02	3.60E-01
VOC	2.00	1537.55
Lead	1.99E-05	2.08E-04
Greenhouse Gases (GHGs)		
Carbon Dioxide	4,950	50,102
Methane	9.51E-02	1.14
Nitrous Oxide	9.06E-02	9.17E-01
CO_2 Equivalent (CO_2e)	4,980	50,404
Hazardous Air Pollutants (HAPs)		
Dichloromethane (Methylene chloride)	5.70E-01	5.27
Hexane; N-Hexane	6.91E-02	7.51E-01
Toluene	5.70E-01	5.27
Combined HAPs:	1.20	11.36

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

<table>
<tr><th colspan="5">Emission Units 01, 02, & 16 Three Natural Gas-Fired Indirect Heat Exchangers</th></tr>
<tr><th>Pollutant</th><th colspan="2">Emission Limit or Standard</th><th>Regulatory Basis for Emission Limit or Standard</th><th>Emission Factor Used and Basis</th><th>Compliance Method</th></tr>
<tr><td rowspan="6">PM</td><td>EU</td><td>Limit (lb/MMBtu)</td><td rowspan="4">401 KAR 59:015, Section 4(1)(c)</td><td rowspan="5">7.6 lb/MMscf AP-42 1.4-2</td><td rowspan="6">Assumed to be in compliance while burning natural gas.</td></tr>
<tr><td>01</td><td>0.38</td></tr>
<tr><td>02</td><td>0.38</td></tr>
<tr><td>16</td><td>0.35</td></tr>
<tr><td colspan="2">20% Opacity, except a max 40% for no more than 6 minutes in any consecutive 60 minutes during fire box cleaning or blowing soot</td><td>401 KAR 59:015, Section 4(2)</td></tr>
<tr><td rowspan="4">SO_2</td><td>EU</td><td>Limit (lb/MMBtu)</td><td rowspan="4">401 KAR 59:015, Section 5(c) 2. b.</td><td rowspan="4">0.6 lb/MMscf AP-42 1.4-2</td></tr>
<tr><td>01</td><td>1.56</td></tr>
<tr><td>02</td><td>1.56</td></tr>
<tr><td>16</td><td>1.29</td></tr>
</table>

Construction Date: Listed by emission unit:
EU01&2 – 2005, EU 16 –2020

Process Description:
Natural gas fired indirect heat exchangers each rated at 20.9 MMBtu/hr

Applicable Regulations:
401 KAR 59:015, *New indirect heat exchangers*, is applicable to indirect heat exchangers having a heat input capacity greater than 1 million BTU per hour (MMBtu/hr) and commenced on or after April 9, 1972.

401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c through 60.48c (Subpart Dc), *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, is applicable to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr.

Comments:
The facility must monitor and maintain records of natural gas usage (MMscf) on a monthly basis. The facility must document actions during startup periods and shutdown periods.

See **Appendix B – Indirect Heat Exchanger History** for details on calculations for emission limitations.

<table>
<tr><th colspan="5">Emissions Unit 03-06 Four Natural Gas-Fired Indirect Heat Exchangers
Emissions Unit 17-20 Four Natural Gas-Fired Space Heaters</th></tr>
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</table>

Construction Date: Listed by emission unit:
EU03&04 – 2005; EU05&06 – 2005, EU17-20 – 2020

Process Description:

Unit	Rated Capacity	Construction Commenced	Fuel
03	1.095 MMBtu/hr	2005	Natural Gas
04	1.095 MMBtu/hr		
05	2.58 MMBtu/hr		
06	2.58 MMBtu/hr		
17	1.095	December 2020	
18	1.095		
19	2.58		
20	2.58		

Applicable Regulation:
401 KAR 59:015, *New indirect heat exchangers*, is applicable to indirect heat exchangers having a heat input capacity greater than 1 million BTU per hour (MMBtu/hr) and commenced on or after April 9, 1972.

Comments:
The facility must monitor and maintain records of natural gas usage (MMscf) on a monthly basis. The facility must document actions during startup periods and shutdown periods.

Emissions Unit 03-06 Four Natural Gas-Fired Indirect Heat Exchangers Emissions Unit 17-20 Four Natural Gas-Fired Space Heaters
See **Appendix B – Indirect Heat Exchanger History** for details on calculations for emission limitations.

Emission Unit 12 Natural Gas-Fired Water Heater				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	$[3.59(P)^{0.62}]$ lbs/hr where P is the weekly average processing rate in tons per hour. If the process rate is 0.5 tons/hr or less, then PM emissions shall not exceed 2.34 lbs/hr	401 KAR 59:010, Section 3(2)	1.9 lb/MMscf AP-42 1.4-2	These units are assumed to be in compliance with the allowable PM and opacity while burning natural gas
	20% Opacity	401 KAR 59:010, Section 3(1)(a)		

Construction Date: 8/2017

Process Description:

Emission Unit	Model	Rated Capacity (MMBtu/hr)	Construction	Fuel
12	Armstrong Flo-Direct Natural Gas Water Heater, Model 15000	15	August 2017	Natural Gas

Applicable Regulation:
401 KAR 59:010, *New process operations*, is applicable to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.

401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c through 60.48c (Subpart Dc), *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*, is applicable to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than or equal to 10 MMBtu/hr.

Comments:
None

Emission Unit 12 Natural Gas-Fired Water Heater				
Emission Unit 09 Cook Kitchen Cooking Vessels – Legacy Cook Kitchens 21-22 Emission Unit 21 New Kitchen – Cooking Vessels, Sets #3, #4, & #5 Emission Unit 08 Legacy Spice Room				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	$[3.59(P)^{0.62}]$ lbs/hr where P is the weekly average processing rate in tons per hour. If the process rate is 0.5 tons/hr or less, then PM emissions shall not exceed 2.34 lbs/hr	401 KAR 59:010, Section 3(2)	0.029 lb/ton AP42 9.9.1	PM emissions (lb/hr) = EF(lb/ton) X P(lb/hr) *EF* = emission factor as listed under AP42 9.9.1 (0.029 lb/ton) *P = (pounds of ingredients combined per month)/(hours of operation per month)*
	20% Opacity	401 KAR 59:010, Section 3(1)(a)		Weekly qualitative visual observation of the opacity, US EPA Reference Method 9 if necessary

Construction Date: Listed by emission unit.

Process Description:

Unit	Description	Process Rate	Construction Commenced	Control Device
09-01	Propriety Spice Mixture/Dry Ingredient Transfer	27.4 tons/hr	2005	Rotoclone 1
09-02	Various Proof Distillate Alcohols/Distillate Cooking	42.67 gallons/hr		
21-01	Spice Room Expansion, Dry Ingredient Transfer	82.2 tons/hr	December 2020	Camfil Fan 1
21-02	Various Proof Distillate Alcohols/Distillate Cooking	64 gallons/hr		Rotoclone 1
08	Raw Dry Spice Mixing/Dry Ingredient Transfer	54.8 tons/hr	2005, Modified in 2020	Rotoclone 2

Applicable Regulation:
401 KAR 59:010, *New process operations*, is applicable to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.

Comments:
Rotoclone 1 is an AAF International Roto Clone, model 1655182-004.
Rotoclone 2 is an AAF International Roto Clone, model 131896-014.
Camfil Fan 1 was added in 2024 (APE20240001), model HPBC ARR-4.

Emission Unit 12 Natural Gas-Fired Water Heater				
Emission Unit 10 Ink Jet and Spray Stencil				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	$[3.59(P)^{0.62}]$ lbs/hr where P is the weekly average processing rate in tons per hour. If the process rate is 0.5 tons/hr or less, then PM emissions shall not exceed 2.34 lbs/hr	401 KAR 59:010, Section 3(2)	10a – 1.43 lb/gallon 10d – 0.66 lb/gallon	US EPA Reference Method 5 if requested by the Division
	20% Opacity	401 KAR 59:010, Section 3(1)(a)		US EPA Reference Method 9 if requested by the Division

Construction Date: 1/1/2005, 2020

Process Description:

Unit	Description	Process Rate (gallons/hr)	Construction Commenced	Material Processed
10a	Video Jet Ink Usage	0.1268	2005, additional units added 2020	Video Jet Ink
10b	Video Jet Make-up Fluid Usage	0.2536		Make-up Fluid
10c	Video Jet Clean-up solvent	0.0076		Clean-up Solvent
10d	Marsh Ink Usage	0.3170		Marsh Ink

Applicable Regulation:
401 KAR 59:010, *New process operations*, is applicable to each affected facility or source, associated with a process operation, which is not subject to another emission standard with respect to particulates in 401 KAR Chapter 59, commenced on or after July 2, 1975.

Comments:
The additional units were added in 2020. These units increased the process rate for units 10c and 10d.

Emission Unit 011 Diesel-Fired Emergency Generator

Construction Date: 1/1/2005

Process Description:

Unit	Fuel Input Capacity	Power Output	Manufacturer	Construction Commenced
11	1.52 MMBtu/hr	277 HP (150 KW)	Cummins DGFA	2005

Applicable Regulation:
401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A **(Subpart ZZZZ**), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines* is applicable to stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand. The permittee shall meet the requirements of 40 CFR Part 63 by meeting the requirements of 40 CFR 60, Subpart IIII. No further requirements apply for the engine under 40 CFR Part 63 [40 CFR 63.6590(a)(2)(iii) and 63.6590(c)].

Comments:
None

Emissions Unit 22 Natural Gas-Fired Emergency Generator

Construction Date: 9/1/2022

Process Description:

Unit	Maximum Fuel Consumption	Power Output	Manufacturer	Construction Commenced
22	1873.5 scf/hr	239 HP	Kohler	September 2022

Applicable Regulation:
401 KAR 63:002, Section 2(4)(eeee), 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (**Subpart ZZZZ**), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, is applicable. Pursuant to 40 CFR 63.6590(c)(1), new or reconstructed stationary RICE located at an area source shall meet the requirements of 40 CFR 63, Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart JJJJ. No further requirements apply to these engines under 40 CFR 63.

401 KAR 60:005, Section 2(2)(eeee), 40 C.F.R. 60.4230 to 60.4248, Tables 1 to 4 (**Subpart JJJJ**), *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines* is applicable to stationary spark ignition (SI) emergency engines greater than 25 hp for which construction is commenced after June 12, 2006 and which are manufactured after January 1, 2009.

Emissions Unit 22 Natural Gas-Fired Emergency Generator
Comments: The permittee shall comply with the emission standards for new SI engines in 40 CFR 60.4233.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements\Results
N/A

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
90 tpy of VOC emissions	To preclude 401 KAR 52:020, *Title V permits*	Source-wide

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 60:005, Section 2(2)(d), 40 C.F.R. 60.40c to 60.48c (Subpart Dc), *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*	EU 01, 02, 12, 16
401 KAR 63:002, Section 2(4)(eeee) 40 C.F.R. 63.6580 to 63.6675, Tables 1a to 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*	EU 11, 22
401 KAR 60:005, Section 2(2)(eeee) 40 C.F.R. 60.4230 through 60.4248, Tables 1 through 4 (Subpart JJJJ), *Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*	EU 22
401 KAR 59:015, *New indirect heat exchangers*	EU 01, 02, 16, 03-06, 17-20
401 KAR 59:010, *New process operations*	EU 08, 09, 10, 12, 21

Table C - Summary of Precluded Regulations:

N/A

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

Table D - Summary of Non Applicable Regulations:

N/A

Air Toxic Analysis

N/A

Single Source Determination

N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
S-05-059	State Origin	APE20050002	10/2/2005	12/12/2005	Initial Construction Permit	N/A
F-09-029	Initial	APE20090001	7/14/2009	10/12/2009	Initial Operating Permit	N/A
F-09-029 R1	Minor Revision	APE20110001	4/27/2011	10/12/2009	Permitting Emergency Generator and Laser Ink Applicator	N/A
F-14-030	Renewal	APE20140001	6/8/2014	1/14/2015	Renewal and adding three insignificant activities.	N/A
F-14-030 R1	Minor Revision	APE20170001	7/20/2017	10/20/2017	Added Emission Unit 12	N/A
F-14-030 R2	Administrative Amendment	APE20180002	11/14/2018	11/30/2018	Permittee address change	N/A
F-19-030	Renewal	APE20190003	7/16/2019	2/2/2020	Renewal	N/A
F-19-030 R1	Minor Revision	APE20200001	3/20/2020	4/6/2020	Addition of a new cook kitchen, emergency generator, and three indirect heat exchangers. Expansion of ink jet stencils and spice room.	N/A
F-19-030 R2	Minor Revision	APE20220005	9/26/2022	1/4/2023	Change EU22 from diesel to natural gas generator	N/A

SECTION 6 – PERMIT APPLICATION HISTORY

None

APPENDIX A – ABBREVIATIONS AND ACRONYMS

AAQS – Ambient Air Quality Standards
BACT – Best Available Control Technology
Btu – British thermal unit
CAM – Compliance Assurance Monitoring
CO – Carbon Monoxide
Division – Kentucky Division for Air Quality
ESP – Electrostatic Precipitator
GHG – Greenhouse Gas
HAP – Hazardous Air Pollutant
HF – Hydrogen Fluoride (Gaseous)
MSDS – Material Safety Data Sheets
mmHg – Millimeter of mercury column height
NAAQS – National Ambient Air Quality Standards
NESHAP – National Emissions Standards for Hazardous Air Pollutants
NO_x – Nitrogen Oxides
NSR – New Source Review
PM – Particulate Matter
PM_{10} – Particulate Matter equal to or smaller than 10 micrometers
$PM_{2.5}$ – Particulate Matter equal to or smaller than 2.5 micrometers
PSD – Prevention of Significant Deterioration
PTE – Potential to Emit
SO_2 – Sulfur Dioxide
TF – Total Fluoride (Particulate & Gaseous)
VOC – Volatile Organic Compounds

APPENDIX B – INDIRECT HEAT EXCHANGER HISTORY

Number	Construction Date	Date Removed	Capacity (MMBtu/hr)	Total for Year (T) (MMBtu/hr)	PM Limit (E_P)* (lb/MMBtu)	SO_2 Limit (E_S)** (lb/MMBtu)
01	2005	N/A	20.9	49.15	0.38	1.56
02	2005		20.9			
03	2005		1.095			
04	2005		1.095			
05	2005		2.58			
06	2005		2.58			
16	2020		20.9	77.4	0.35	1.29
17	2020		1.095			
18	2020		1.095			
19	2020		2.58			
20	2020		2.58			

* $E_P = 0.9634 (T^{-0.2356})$
** $E_S = 7.7223 (T^{-0.4106})$