Commonwealth of Kentucky
Division for Air Quality

STATEMENT OF BASIS/SUMMARY

Conditional Major, Operating
Permit: F-25-001
Miller Waste Mills, Inc. dba RTP Company
1450 Commonwealth Drive, Henderson, KY 42420
March 10, 2025
Johnson Luma, Reviewer

SOURCE ID:	21-101-00125
AGENCY INTEREST:	1831
ACTIVITY:	APE20240001

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 3087, Custom Compounding of Purchased Plastics Resins

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

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):

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

*PTE does not include self-imposed emission limitations.

Description of Facility:
Miller Waste Mills, Inc. dba RTP Company (Miller Waste) is a manufacturer of black plastic color concentrate. The manufacture of black plastic color concentrates consists of compounding various polymer resins with carbon black, calcium carbonate and/or other filler materials to produce the end product of a pelletized plastic color concentrate. Physical processes taking place include pneumatically feeding raw materials from silos and dump stations equipped to handle super sacks of carbon black and plastic resins into hoppers on the compounding lines. Thermal processes include the heating of the polymer resin and additives to produce specific temperature and mixing in the compounding line. Finished product is fed into one of two blending silos.

SECTION 2 – CURRENT APPLICATION

Permit Number: F-25-001 Activities: APE20240001

Received: January 3, 2024 Application Complete Date(s): March 7, 2025

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:
APE20240001: Renewal Permit

- Basic Permit Renewal
- Removal of the Schick Loading Hopper (001-14)
- Addition of Insignificant Activities to KYEIS

F-25-001 Emission Summary				
Pollutant	2023 Actual (tpy)	Previous PTE F-19-001 R2 (tpy	Change (tpy)	Renewal PTE F-25-001 (tpy)
CO	0	0	0.09	0.09
NO_X	0	0	0.10	0.10
PT	3.32	174.94 (65.45*)	-3.94 (-13.45 *)	171 (52*)
PM_{10}	3.32	174.94 (65.45*)	-3.94 (-13.45 *)	171 (52*)
$PM_{2.5}$	3.14	144.79 (63.91*)	-3.95 (-13.44 *)	140.84 (50.47*)
SO_2	0	0	6.18E-04	6.18E-04
VOC	0.15	0.99	0	0.99
Lead	0	0	5.15E-07	5.15E-07
Greenhouse Gases (GHGs)				
Carbon Dioxide	0	0	123	123
Methane	0	0	2.32E-03	2.32E-03
Nitrous Oxide	0	0	2.32 E-04	2.32 E-04
CO_2 Equivalent (CO_2e)	0	0	123	123
Hazardous Air Pollutants (HAPs)				
Combined HAPs:	0.0924	0.476	-8.67E-03	0.467

*Permit contains federally enforceable requirements to use controls to reduce PM emissions.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Unit 001: Process Room #2					
Pollutant	**Emission Limit (lb/hr) or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used (lb/ton) and Basis (see Comments)**		**Compliance Method**
PM	When $P \leq 0.5$ tons/hr $E = 2.34$ lb/hr When $P > 0.5, \leq 30$ tons/hr $E = 3.59 \times P^{0.62}$ Where: E = PM in lb/hr; P = process rate in tons/hr	401 KAR 59:010, Section 3(2)	001-01, 001-02	PT: 4.72 $PM_{2.5}$: 3.49	Assumed based on outlet grain loading, exhaust flow rate and processing rate provided Monitoring, recording, and maintaining weekly log of pressure drop
			001-04 through 001-06	PT: 2.36 $PM_{2.5}$: 1.75	
			001-08 through 001-10	PT: 1.18 $PM_{2.5}$: 0.87	
			001-12, 001-13	PT: 0.59 $PM_{2.5}$: 0.44	
			001-14, 001-16	PT: 0.8 $PM_{2.5}$: 0.8	Assumed in compliance based on emissions profile and engineering estimates provided
	20% Opacity	401 KAR 59:010, Section 3(1)(a)	N/A		Weekly qualitative visual observations, Method 9 or corrective action

Initial Construction Date: 001-01 to 001-03: August 1997; 001-04 to 001-07: February 1998; 001-08 to 001-11: March 1998; 001-12 to 001-16: August 1997; 001-11b: August 2022

Process Description:
001-01: K-03 FCM Dump Station
Emissions: Carbon Black, PM; Max Capacity: 1000 lb/hr
Controls: Dacron polyester baghouse, with secondary baghouse at total 99.9% efficiency

001-02: K-03 FCM Feed Station
Emissions: Carbon Black, PM; Max Capacity: 1000 lb/hr
Controls: Dacron polyester baghouse, with secondary baghouse at total 99.9% efficiency

001-03: K-03 FCM
Emissions: VOC, HAPs; Max Capacity: 1000 lb/hr
Controls: None

001-04: K-02 FCM Dump Station
Emissions: Carbon Black, PM; Max Capacity: 2000 lb/hr
Controls: Dacron polyester baghouse, with secondary baghouse at total 99.9% efficiency

001-05: K-02 FCM Additive Station
Emissions: Carbon Black, PM; Max Capacity: 2000 lb/hr

Emission Unit 001: Process Room #2

Controls: Dacron polyester baghouse, with secondary baghouse at total 99.9% efficiency

001-06: K-02 FCM Feed Station
Emissions: Carbon Black, PM; Max Capacity: 2000 lb/hr
Controls: Dacron polyester baghouse, with secondary baghouse at total 99.9% efficiency

001-07: K-02 FCM
Emissions: VOC, HAPs; Max Capacity: 2000 lb/hr
Controls: None

001-08: K-01 FCM Dump Station
Emissions: Carbon Black, PM; Max Design Capacity: 8000 lb/hr Max Operating Capacity: 4000 lb/hr
Controls: Donaldson Torit polyester baghouse, with secondary baghouse at total 99.9% efficiency

001-09: K-01 FCM Additive Station
Emissions: Carbon Black, PM; Max Design Capacity: 8000 lb/hr Max Operating Capacity: 4000 lb/hr
Controls: Donaldson Torit polyester baghouse, with secondary baghouse at total 99.9% efficiency

001-10: K-01 FCM Feed Station
Emissions: Carbon Black, PM; Max Design Capacity: 8000 lb/hr Max Operating Capacity: 4000 lb/hr
Controls: Donaldson Torit polyester baghouse, with secondary baghouse at total 99.9% efficiency

001-11b: K-01 FCM
Emissions: VOC, HAPs; Max Capacity: 4000 lb/hr
Controls: None

001-12: Blending Silo #1
Emissions: PM; Max Capacity: 8000 lb/hr
Controls: Dacron polyester baghouse, at 99.9% efficiency

001-13: Blending Silo #2
Emissions: PM; Max Capacity: 8000 lb/hr
Controls: Dacron polyester baghouse, at 99.9% efficiency

001-16: Finished Product Load Station #2
Emissions: PM; Max Capacity: 8000 lb/hr
Controls: None

Applicable Regulation:
401 KAR 59:010, *New process operations*. This regulation is applicable to each affected facility, associated with a process operation, which is not subject to another emission standard with respect to particulates, commenced on or after July 2, 1975; applicable to 001-01, 001-02, 001-04 through 001-06, 001-08, through 001-10, and 001-12 through 001-16.

State Origin Requirement:
401 KAR 63:020, *Potentially hazardous matter or toxic substances*. This regulation applies to each affected facility which emits or may emit potentially hazardous matter or toxic substances; applicable to processes

Emission Unit 001: Process Room #2
001-03, 001-07, and 001-11b. **Precluded Regulations:** **401 KAR 52:020**, *Title V permits* **Comments:** The emission factors for processes 001-01, 001-02, 001-04 through 001-06, 001-08 through 001-10, 001-12, and 001-13 are calculated based on the outlet grain loading of the bag filters, whereas the emission factor for 001-16 are calculated based on engineering estimates provided by the facility. The outlet grain loading of the bag filters is 0.0001745 g/dscm for PT, and 0.0001289 g/dscm for $PM_{2.5}$. The exhaust flowrate for the baghouse at this emission unit is 3,696 acfm. For several emission points, PT = PM_{10}, as seen in the permit. APE20220001: Emissions units (001-08), (001-09), (001-010) had a reduction of max operating capacity from 8000 lb/hr to 4000 lb/hr due to (001-011) with a max design capacity of 8000 lb/hr being replaced with mixer with max design capacity of 4000 lb/hr that is designated as (001-11b). Emission unit 001-015 was also removed. APE20240001: Emission Unit 001-014 (Schick Loading Hopper) is removed.

Emission Unit 002: Process Room #1				
Pollutant	**Emission Limit (lb/hr) or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis (see Comments)**	**Compliance Method**
PM	When $P \leq 0.5$ tons/hr $E = 2.34$ lb/hr When $P > 0.5, \leq 30$ tons/hr $E = 3.59 \times P^{0.62}$ Where: E = PM in lb/hr; P = process rate in tons/hr	401 KAR 59:010, Section 3(2)	0.8 lb/ton 0.8 lb/ton	Assumed in compliance based on emissions profile and engineering estimates provided
	20% Opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Weekly qualitative visual observations, Method 9 or corrective action
Initial Construction Date: 002-04: August 1997; 002-11: April 2021 **Process Description:** 002-04: 100 cu ft Ribbon Blender Emissions: PM; Max Capacity: 6000 lb/hr				

Emission Unit 002: Process Room #1

Controls: None

002-11: Marion Mixer FCS-HA 140SV
Emissions: PM; Max Capacity: 12000 lb/hr
Controls: None

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

Precluded Regulations:
401 KAR 52:020, *Title V permits*

Comments:
The emission factors are derived from uncontrolled emission factor listing for Criteria Air Pollutants, Emission Inventory Improvement Program Vol 2: Chapter 14.

For Emission Points 002-04 and 002-11, PT = PM_{10}.

Emission Unit 003: Outdoor Silos				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used (lb/ton) and Basis (See Comments)**	**Compliance Method**
PM	When $P \leq 0.5$ tons/hr $E = 2.34$ lb/hr When $P > 0.5, \leq 30$ tons/hr $E = 3.59 \times P^{0.62}$ Where: E = PM in lb/hr; P = process rate in tons/hr	401 KAR 59:010, Section 3(2)	PT/PM_{10}: 0.062 $PM_{2.5}$: 0.046	Assumed based on outlet grain loading, exhaust flow rate and processing rate provided Monitoring, recording, and maintaining weekly log of pressure drop
	20% Opacity	401 KAR 59:010, Section 3(1)(a)	N/A	Weekly qualitative visual observations, Method 9 or corrective action

Initial Construction Date: 003-01: August 1997

Process Description:
003-01: Two (2) Outdoor Silos
Emissions: PM; Max Capacity: 44000 lb/hr each
Controls: Dacron polyester baghouse, at 99.9% efficiency

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

Precluded Regulations:
401 KAR 52:020, *Title V permits*

Comments:
The emission factors for process 003-01 are calculated based on the outlet grain loading of the bag filters.

The outlet grain loading of the bag filters is 0.0001745 g/dscm for PT, and 0.0001289 g/dscm for $PM_{2.5}$. The exhaust flowrate for the baghouse at this emission unit is 4,336 acfm.

For Emission Point 003-01, PT = PM_{10}.

Insignificant Activities

Description	Generally Applicable Regulation
Pneumatic Conveying System (PCS)	401 KAR 59:010
Cook Off Oven (C-Oven)	401 KAR 59:010, 401 KAR 63:020
Resin Dumps (RD)	401 KAR 59:010
Resin Feeds (RF)	401 KAR 59:010
Central Vacuum Cleaner (CVAC)	401 KAR 59:010

Comments:

- The Insignificant Activities are first added to KYEIS during the APE20240001 F-25-001 Renewal.
- A 55 lb Bagger was requested to be removed (by email on 2/20/25) from this list for the Renewal.
- During a March 6, 2025 site visit, the Plant Manager pointed out 3 process lines with capacities of 1000 lbs/hr, 2000 lbs/hr, and 4000 lbs/hr which the Division combines for a total Hourly Design Rate for the Pneumatic Conveying System.
  - Though the Pneumatic Conveying System is a major equipment that allows the material to move around within the facility, it is designed to emit as little as possible, thus emissions will still be insignificant even with controls.
    - The facility confirmed via email on 2/20/25 that the Pneumatic Conveying System emissions route to the same Baghouse as the K-03 Dump & Feed Stations.
    - The Division used AP 42, Table 11.26.1 (Pneumatic Conveyor Venting, with Fabric Filter) and engineering estimations for the Conveying System's Emission Factors after the site visit.
    - The Emission Factors from Table 11.26.1 are already controlled, so a capture efficiency of 100% is assumed, and the Baghouse's control efficiency is not used for our estimations.
    - We held the same assumption as seen in the K-03 Stations that Carbon Black = PT = PM_{10}.
- The Cook Off Oven is used to cook off resin that has cooled and hardened on the screws of the equipment. It was found to also be subject to 401 KAR 63:020 as it burns natural gas and will use Emission Factors from AP 42, Tables 1.4-1 to 1.4-4. It has a max capacity of 240,000 Btu/hr.
  - During a March 6, 2025 site visit, the Division determined that potential emissions released from the material being cooked off does not need to be quantified.
- From a 2/20/25 email, the facility responded that the Resin Dump & Resin Feed route to the same Baghouse as the K-03 Dump & Feed Stations (99.90% Control Efficiency, 95% Capture Efficiency).
  - Similar pollutant characteristics (but minus Carbon Black) exist in the Resin Dump and Resin Feed as the K-03 Dump & Feed Stations, so using engineering estimates, max PTE, and design rates, the Division derives emission factors for all Particulate Matter.
  - During a March 6, 2025, site visit, the Plant Manager mentioned that the ratio of Carbon Black to Resin was 20% Carbon black to 80% resin. So, using the same hourly design rates from the K-03 Dump & Feed Stations, we multiply by the Resin to Carbon Black ratio to obtain the Hourly Design Rates for both the Resin Dump and Resin Feed insignificant activities.
- The Central Vacuum Cleaner was first seen in the APE20240001 Renewal application and added to KYEIS. It could potentially fall under the "Trivial Activities: Item 6 - Janitorial Services…", but for now we will keep as insignificant as reported in the Renewal application.
  - The Division used AP 42, Table 11.26.1 (Pneumatic Conveyor Venting, with Fabric Filter) and engineering estimations for the Vacuum System's Emission Factors after the site visit. We held the same assumption as seen in the K-03 Stations that Carbon Black = PT = PM_{10}.

Testing Requirements\Results:

None

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
90 tpy of PT/PM_{10} emissions	To preclude the applicability of **401 KAR 52:020,** *Title V Permits*	Source-wide

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 59:010, *New process operations*	001-01, 001-02, 001-04 through 001-06, 001-08 through 001-10, 001-12 through 001-16, 002-04, 002-11, and 003-01
401 KAR 63:020, *Potentially hazardous matter or toxic substances*.	001-03, 001-07, and 001-11b

Table C - Summary of Precluded Regulations:

Precluded Regulations	Emission Unit
401 KAR 52:020, *Title V permits*	Source-wide

Table D - Summary of Non-Applicable Regulations:
None

Air Toxic Analysis
401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*
The Division for Air Quality (Division) has performed Screenview on March 20, 2025 of potentially hazardous matter or toxic substances (Acetaldehyde, Acrolein, Acrylic Acid, Acrylonitrile, Benzene, Biphenyl, Caprolactam, Dichloromethane, Ethyl Benzene, Formaldehyde, Methyl Ethyl Ketone, Phenol, Phthalic Anhydride, Propionaldehyde, Styrene, Toluene, and Xylene) that may be emitted by the facility based upon the process rates, material formulations, stack heights and other pertinent information provided by the applicant. Based upon this information, the Division has determined that the conditions outlined in this permit will assure compliance with the requirements of 401 KAR 63:020.

Single Source Determination
N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
F-13-012	Renewal	APE20120001	2/28/2013	12/20/2013	Renewal	N/A
F-13-012 R1	Admin Amend	APE20160002	5/13/2016	6/17/2016	Name Change	N/A
F-19-001	Renewal	APE20180003	3/25/2019	7/14/2019	Permit Renewal, Renaming of Process Lines, Removal of unconstructed units and processes Removal of historical VOC and total HAPs allowable	N/A
F-19-001 R1	Minor Revision	APE20210001	8/4/2021	9/12/2021	Addition of 002-11 (Marion Mixer) to Process Room #1	N/A
F-19-001 R2	Minor Revision	APE20220001	10/12/2022	1/3/2022	Removal of 001-15, Replaced 001-11 with a new mixer designated 001-11b, adjust throughputs of 001-08, 001-09 and 001-10	N/A

SECTION 6 – PERMIT APPLICATION HISTORY

None

APPENDIX A – ABBREVIATIONS AND ACRONYMS

acfm – Actual cubic feet per minute
Btu – British thermal unit
CO – Carbon Monoxide
dscm – Dry standard cubic meters
Division – Kentucky Division for Air Quality
FCM – Farrel Continuous Mixer
GHG – Greenhouse Gas
HAP – Hazardous Air Pollutant
KYEIS – Kentucky Emissions Inventory System
MMBtu/hr – million BTU per hour
NO_x – Nitrogen Oxides
PM – Particulate Matter
$PM_{2.5}$ – Particulate Matter equal to or smaller than 2.5 micrometers
PM_{10} – Particulate Matter equal to or smaller than 10 micrometers
PT – Total Particulate Matter
PTE – Potential to Emit
SO_2 – Sulfur Dioxide
VOC – Volatile Organic Compounds