Commonwealth of Kentucky
Division for Air Quality

STATEMENT OF BASIS / SUMMARY

Conditional Major, Construction / Operating
Permit: F-25-016
Kentucky Department of Military Affairs - Bluegrass Station Division
5751 Briar Hill Road
Lexington, KY 40516
March 26, 2025
Nathan Cox, Reviewer

SOURCE ID:	21-067-00032
AGENCY INTEREST:	1022
ACTIVITY:	APE20240002

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SECTION 1 – SOURCE DESCRIPTION

SIC Code and description: 9711, National Security

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: Fayette
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): Methyl Isobutyl Ketone, Toluene, Xylenes

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

*PTE does not include self-imposed emission limitations.

Description of Facility:
The Bluegrass Station facility is owned by the Commonwealth of Kentucky and operated by the Kentucky Department of Military Affairs. Bluegrass Station is a light industrial/business park catering to defense agencies and contractors. Operations are varied, but primary operations include military equipment maintenance and modification; clothing and equipment distribution; warehousing and storage; and administrative and office type work.

SECTION 2 – CURRENT APPLICATION AND EMISSION SUMMARY FORM

Permit Number: F-25-016 Activity: APE20240002

Application Received: October 22, 2024 Application Complete Date(s): December 21, 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:

APE20240001 502(b)(10) Change

- Add spray gun to EP86 Building 135 Touchup Painting. Addition results in EP86 no longer qualifying as an insignificant activity.

APE20240002 Permit Renewal

- Application for permit renewal
- Addition of one insignificant activity, a blast cabinet for aluminum parts (EP88)
- Replacement of one blast cabinet for steel parts at EP05 in Building 3E with a newer model. No change to potential emissions.
- Replacement of steel tanks in Iridite II process at EP24 in Building 192 with polypropylene tanks. No change to potential emissions.

APE20250001 502(b)(10) Change

- Addition of one insignificant activity (IA66), downdraft tables for sanding aluminum parts not associated with Iridite chromium-coating process.
- Addition of one insignificant activity (IA67), cutting and sawing equipment for assembling wooden crates in Building 3 and Building 5.

F-25-016 Emission Summary		
Pollutant	2023 Actual (tpy)	PTE F-25-016 (tpy)
CO	1.15	18.56
NOx	3.44	72.66
PT	0.35	27.78
PM_{10}	0.35	27.69
$PM_{2.5}$	0.33	21.63
SO_2	0.15	5.22
VOC	50.87	237.07*
Lead	1.9E-6	1.63E-5
Greenhouse Gases (GHGs)		
Carbon Dioxide	570	7,077
Methane	0.02	0.163
Nitrous Oxide	0.008	0.008
CO_2 Equivalent (CO_2e)	572	7,083
Hazardous Air Pollutants (HAPs)		
1,6-Hexamethylene Diisocyanate	0.04	1.56
4-Chlorobenzotrifluoride	-	20.38
Chromium	0.001	1.22
Chromium, Hexavalent (as Cr)	0.0000001	0.0041
Ethyl Benzene	0.13	9.35
Methyl Isobutyl Ketone	0.80	40.55*
Toluene	0.28	23.86*
Xylenes (Total)	0.33	31.54*
Combined HAPs:	1.61	108.95*

*Note: Emissions limited by federally-enforceable emission limitations to ensure the source remains below major source thresholds.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS

Emission Point #01 Helicopter Paint Booth and Helicopter Media Blasting Booth				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Material Balance & SDS, 65% Paint PM Transfer Efficiency; Blast booth Engineering Estimation	Paint Booth Dry Filters, 98% C.E., Daily Pressure Drop Reading; Blast Booth HEPA Filters, 98% C.E.
	20% opacity	401 KAR 59:010, Section 3(1)	N/A	Weekly Stack Visual Observation
VOC	90 tpy of VOC emissions source-wide	To Preclude 401 KAR 52:020	Material Balance & SDS	Recordkeeping Requirements / Carbon Adsorber
Single HAP	9.0 tpy of individual HAP emissions source-wide	To Preclude 401 KAR 52:020	Material Balance & SDS	Recordkeeping Requirements / Carbon Adsorber
Combined HAP	22.5 tpy of combined HAP emissions source-wide	To Preclude 401 KAR 52:020	Material Balance & SDS	Recordkeeping Requirements / Carbon Adsorber
Chrome VI	6.0 pounds per year source-wide	401 KAR 63:020	Material Balance & SDS	Paint Booth Dry Filters, 98% C.E., Recordkeeping Requirements
1,6-Hexamethyl-ene Diisocyanate (CAS# 822-06-0)	0.178 tons per year source-wide	401 KAR 63:020	Material Balance & SDS	Recordkeeping Requirements

Initial Construction Date: 10/2003

Process Description:

Paint booth with four HVLP paint guns.
Utilizes a Cascade UG7500 Automatic Spray Gun Cleaner
Control Equipment: XFP-6000 Paint Overspray System for control of particulates (three stage). Filter condition is monitored with anemometers.
Permanent Total Enclosure with activated carbon adsorption for control of VOCs. Two MSA CHEMGARD infrared gas monitors.
Particulate Control Efficiency: 98%
VOC Control Efficiency: 94.4% (Tested on July 20, 2020)

Emission Point #01 Helicopter Paint Booth and Helicopter Media Blasting Booth

Permanent total enclosure: Capture efficiency is assumed 100%

Helicopter Media Blasting Booth
Control Equipment: HEPA Filters
Particulate Control Efficiency: 98%

Applicable Regulations:
401 KAR 59:010, *New process operations*

State Origin Requirements:
401 KAR 63:020, *Potentially hazardous matter and toxic substance emissions*

Comments:
An A.J. Dralle XFP-6000 Aerospace Paint Overspray Collection System, 3-stage filtration system, is utilized to control particulate matter. An activated carbon adsorption system contained in a permanent total enclosure (PTE) is utilized to control VOC emissions. Performance testing for the control of VOC emissions was performed on August 4, 2010 on the EP 01 Helicopter Paint Booth. The capture efficiency of the paint booth enclosure is assumed 100% as it meets the definition of PTE. The Bluegrass Station has installed a MSA CHEMGARD infrared gas monitor in place of the PID gas monitor to monitor VOC emissions to the atmosphere.

The emissions from paint coating are calculated using mass balances. A transfer efficiency of 65% is assumed for calculating PM/PM_{10} emissions from coating activities. VOC emission controls from the carbon adsorbers assumed to be 84.7% for the purposes of calculating potential to emit. The most recent test of the carbon adsorbers yielded a control efficiency of 94.4%. A particulate matter control efficiency of 98% is assumed for the spray booth and media blast booth filters. Blast booth emissions are estimated using engineering estimations. The blast booth uses plastic blasting media.

In the future, the facility plans to stop using chromium coatings. Currently these coatings are still in use.

Emission Point #02 (7A and 7B) 221 D Painting, Emission Point #04 (16A, 16B and 16C) 3B Small Parts Paint Booth, Emission Point #07 (20) 3C Small Parts Paint Booth, Emission Point #08 (39) 221F Drive In Paint Booth				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Material Balance & SDS, 65% Paint PM Transfer Efficiency	Dry Filters, 98% C.E., Daily Pressure Drop Reading
	20% opacity	401 KAR 59:010, Section 3(1)	N/A	Weekly Stack Visual Observation
VOC	90 tpy of VOC emissions source-wide	To Preclude 401 KAR 52:020	Material Balance & SDS	Recordkeeping Requirements
Single HAP	9.0 tpy source-wide	To Preclude 401 KAR 52:020	Material Balance & SDS	Recordkeeping Requirements
Combined HAP	22.5 tpy source-wide	To Preclude 401 KAR 52:020	Material Balance & SDS	Recordkeeping Requirements
Chrome VI	6.0 pounds per year source-wide	401 KAR 63:020	Material Balance & SDS	Dry Filters, 98% C.E., Recordkeeping Requirements
1,6-Hexamethylene Diisocyanate (CAS# 822-06-0)	0.178 tons per year source-wide	401 KAR 63:020	Material Balance & SDS	Recordkeeping Requirements

Initial Construction Dates: EP02 1978, EP04 1986, EP07 1988, EP08 1988

Process Description:

EP02: Two paint booths with three electric baking ovens to paint small metal parts.

EP04: Two station paint booths.

EP07: Paint booth.

EP08: Drive in paint booth for trucks, vans and large equipment. Paint booth utilizes a propane fired direct heat exchanger.

Each booth possesses paint gun cleaning tank, three-stage filters contained in a three-stage filter bank and is monitored using handheld anemometers. EP08 has two cleaning tanks.

Emission Point #02 (7A and 7B) 221 D Painting, Emission Point #04 (16A, 16B and 16C) 3B Small Parts Paint Booth, Emission Point #07 (20) 3C Small Parts Paint Booth, Emission Point #08 (39) 221F Drive In Paint Booth

Applicable Regulations:
401 KAR 59:010, *New process operations*

State Origin Requirements:
401 KAR 63:020, *Potentially hazardous matter and toxic substance emissions*

Comments:
The emissions from paint coating are calculated using mass balances. A transfer efficiency of 65% is assumed for calculating PM/PM_{10} emissions from coating activities. A particulate matter control efficiency of 98% is assumed for the spray booth filters.

In the future, the facility plans to stop using chromium coatings. Currently these coatings are still in use.

Emission Point #48 Touchup Surface Coating Hangars 192A&C, 194, and 352, Emission Point #86 Building 135 Touchup Painting

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Material Balance & SDS, 65% Paint PM Transfer Efficiency	70% Building Enclosure
	20% opacity	401 KAR 59:010, Section 3(1)	N/A	Weekly Stack or Vent Visual Observation
VOC	90 tpy source-wide	To Preclude 401 KAR 52:020	Material Balance & SDS	Recordkeeping Requirements
Single HAP	9.0 tpy source-wide	To Preclude 401 KAR 52:020	Material Balance & SDS	Recordkeeping Requirements
Combined HAP	22.5 tpy source-wide	To Preclude 401 KAR 52:020	Material Balance & SDS	Recordkeeping Requirements
4-Chlorobenzotrifluoride (CAS# 98-56-6)	2.89 tpy source-wide	401 KAR 63:020	Material Balance & SDS	Recordkeeping Requirements
1,6-Hexamethylene Diisocyanate (CAS# 822-06-0)	0.178 tons per year source-wide	401 KAR 63:020	Material Balance & SDS	Recordkeeping Requirements

Emission Point #48 Touchup Surface Coating Hangars 192A&C, 194, and 352, Emission Point #86 Building 135 Touchup Painting

Initial Construction Date: EP48: 2017, EP86: 2024

Process Description:
Emission Point 48: The facility performs touchup helicopter painting activities outside of the paint booths. An HVLP spray gun is used for coating activities.

Emission Point 86: Touch-up painting for small portions of surfaces of immobile military equipment. Coatings are applied using manually brushed-on coatings and one manually operated HVLP spray gun.

Applicable Regulations:
401 KAR 59:010, *New process operations*

State Origin Requirements:
401 KAR 63:020, *Potentially hazardous matter and toxic substance emissions*

Comments:
Emission Point 48: The emissions from paint coating are calculated using mass balances. A transfer efficiency of 65% is assumed for calculating PM/PM_{10} emissions from the coating activities. A particulate matter control efficiency of 70% is assumed for the building enclosure. To demonstrate compliance with the 401 KAR 59:010 PM limit, all hangar doors should be closed during surface coating activities.

Emission Point 86: A transfer efficiency of 100% is assumed for the brushed-on coatings and a transfer efficiency of 70% is assumed for the spray coating operations. A particulate matter control efficiency of 70% is assumed for the building enclosure.

In the future, the facility plans to stop using chromium coatings. Currently these coatings are still in use.

Emission Point #05 221F & 3E Blast Cabinets (Aluminum Parts)				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Engineering Estimation	Filter Operating and Recordkeeping Requirements, 99% C.E.
	20% opacity	401 KAR 59:010, Section 3(1)	N/A	Compliance Assumed, Filter Operating and Unit Vents Inside Building Enclosure

Emission Point #05 221F & 3E Blast Cabinets (Aluminum Parts)

Initial Construction and/or Modification Date: Constructed 1986, one replaced in 2025.

Process Description:
Hand sandblast cabinets

Applicable Regulation:
401 KAR 59:010, *New process operations*

State Origin Requirements:
401 KAR 63:020, *Potentially hazardous matter and toxic substance emissions*

Comments:
The emissions from abrasive blasting are calculated using an engineering estimation of 600 lbs PM emissions per ton blast material used. Particulate matter control efficiency is assumed to be 99%. All blast cabinets at the facility are equipped with a dust collector. This unit vents into the building. Due to high PM control efficiency and low PTE (0.6 tpy) for PM from this hand sandblaster combined with settling inside the building prior to escaping to the ambient air, compliance with the opacity standard for PM emissions from 401 KAR 59:010 Section 3(1) is assumed when the control equipment is operated properly and vents inside the building enclosure.

Emission Point #11 Building 1 Two Boilers

Pollutant	Emission Limit or Standard	Regulatory Basis for Emission Limit or Standard	Emission Factor Used and Basis	Compliance Method
PM	0.42 lb/MMBtu	401 KAR 59:015, Section 4(1)(c)	AP-42 Chapter 1.4	Assumed based upon natural gas combustion
	20% opacity	401 KAR 59:015, Section 4(2)	N/A	Assumed based upon natural gas combustion
SO_2	1.81 lbs/MMBtu	401 KAR 59:015, Section 5(1)	AP-42 Chapter 1.4	Assumed based upon natural gas combustion

Initial Construction and/or Modification Date: 11/1995

Process Description:
Two boilers
Rated Capacity: 1.884 MMBtu/hr each
Primary Fuel: Natural Gas
Backup Fuels: Distillate Oils No. 1 and No. 2 (Facility does not plan to use these)

Applicable Regulations:
401 KAR 59:015, *New Indirect Heat Exchangers*

Comments:
Emission Point 11 limits were established with Permit F-03-029. It is unknown what specific heat capacity was used to arrive at these limits, as summing the existing boilers in that permit [33.024 MMBtu/hr (14 + 6.6 + 6.6 + 1.884 + 1.884 + 2.056)] will yield a slightly different value for the SO_2 limit. The decision was

Emission Point #11 Building 1 Two Boilers
made to not alter the SO_2 limit since it may not be incorrect. A total heat capacity of 33.8 MMBtu/hr, for example, will yield the above limits. AP-42 factors were used to estimate natural gas and fuel oil combustion emissions. While the boilers are capable of using No. 1 and No. 2 distillate oil, the facility has no plans to use these. The permittee is required to monitor the hours of operation in liquid service to demonstrate the boilers are gas fired boilers pursuant to 40 CFR 63 Subpart JJJJJJ. Otherwise, 40 CFR 63 Subpart JJJJJJ could apply.

Emission Point #24, 26, 28, 29, 30, 31, 32, 33, 60, 64, 65, 77-83 Dip Tanks and Downdraft Tables				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Engineering Estimation	Compliance with 40 C.F.R. 63 Subpart WWWWWW
	20% opacity	401 KAR 59:010, Section 3(1)	N/A	Weekly Stack Visual Observation

Initial Construction/Modification Dates: EP24 2008, replaced metal tanks with plastic in 2025, EP26 4/1985, EP28 9/2010, EP29 9/2010, EP30 12/2011, EP31 12/2011, EP32 10/2012, EP33 2014, EP60 6/2020, EP64 1/2020, EP65 1/2017, EP77-83 12/2021

Process Description:
EP24 (59) Building 192 Type II Iridite Dip Tank Room
Cleaner Dip Tank, Deoxidizer Dip Tank, and Surface Treatment Dip Tank, with 4 water rinse tanks.

EP 26 (61) Building 3C Iridite Dip Tank Room
Iridite Dip Tank, Two Isoprep Dip tanks

EP 28 (63) Downdraft Table #P10274003
One System Technologies Downdraft Sanding Table
Control Equipment: Type of Filter Unit: HEPA: Filtering Material: Fabric
Control Efficiency: 98%

EP 29 (64) Downdraft Table #P10274002
one System Technologies Downdraft Sanding Table
Control Equipment: Type of Filter Unit: HEPA: Filtering Material: Fabric
Control Efficiency: 98%

EP 30 (65 & 66) Two Downdraft Tables #P10274001, # P11336001
Two System Technologies Downdraft Sanding Tables
Control Equipment: Type of Filter Unit: HEPA: Filtering Material: Fabric
Control Efficiency: 98%

Emission Point #24, 26, 28, 29, 30, 31, 32, 33, 60, 64, 65, 77-83 Dip Tanks and Downdraft Tables

EP 31 (67) Downdraft Table #P11341001
One System Technologies Downdraft Sanding Table
Control Equipment: Type of Filter Unit: HEPA: Filtering Material: Fabric
Control Efficiency: 98%

EP 32 (68) Downdraft Table #P13070001
One System Technologies Downdraft Sanding Table
Control Equipment: Type of Filter Unit: HEPA: Filtering Material: Fabric
Control Efficiency: 98%

EP 33 (69) Building 221A Parkerization Dip Tank Process

EP 60 (88) Building 3C Type II Iridite Process (7 tanks)
Cleaner Dip Tank, Deoxidizer Dip tank, and Surface Treatment Dip tank with 4 water rinse tanks

EP 64 (90) Downdraft Table #P11341002
One System Technologies Downdraft Sanding Table
Control Equipment: Type of Filter Unit: HEPA: Filtering Material: Fabric
Control Efficiency: 98%

EP 65 (91) Downdraft Table #P17086001
One DownFlex Downdraft Sanding Table
Control Equipment: Type of Filter Unit: HEPA: Filtering Material: Fabric
Control Efficiency: 98%

EP 77-83 (92a-g) 7 Superior SD23 Downdraft Sanding Tables, Asset #'s SD23a – SD23g
7 Superior SD23 Downdraft Sanding Tables
Control Equipment: Type: Nano Fiber: Material: Fabric
Control Efficiency: 99%

Applicable Regulations:
401 KAR 59:010, *New process operations*

401 KAR 63:002 Section 2(4)(uuuuu), 40 C.F.R. 63.11504 through 63.11512, Table 1 (Subpart WWWWWW), *National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations*

Comments:
Dip tanks and dry mechanical polishing processes. For the Dip tanks, 10% of the solids throughput is assumed to be emitted. The downdraft table emissions are calculated using engineering estimations.

Compliance with 401 KAR 59:010's emission standard is assumed.

Emission Point #13, 15, 16 Emergency Diesel Generators

Initial Construction Dates: EP13 1996, EP15 2000, EP16 1996

Emission Point #13, 15, 16 Emergency Diesel Generators

Process Description:

EP13 (48A)221 Emergency Generator 00514
Caterpillar Diesel Fuel-Fired Power Generator Set
Horsepower: 587
BTU input: 1.4 MMBtu/hour

EP15 (48C)221 Emergency Generator O3340
Caterpillar Diesel Fuel-Fired Power Generator Set
Horsepower: 587
BTU input: 1.4 MMBtu/hour

EP16 (48D)221 Emergency Generator l5227
Onan Diesel Fuel-Fired Power Generator Set
Horsepower: 600
BTU input: 2.1 MMBtu/hour

Applicable Regulations:

401 KAR 63:002 Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

Comments:

None

Emission Point #17, 25, 36, 37, 38, 39, 41, 43, 63, 87 Diesel Emergency Generators

Initial Construction Dates: EP17 2007, EP25 2008, EP36 2013, EP37 2014, EP38 2014, EP39 2014, EP41 2009, EP43 2015, EP63 11/2020, EP87 3/2023

Process Description:

EP17 (51) Building 3 Emergency Generator
Detroit Diesel, Model 12V4000
Horsepower: 2328
BTU input: 14.6 MMBtu/hour
Cylinder volume: 4.77 L

EP25 (60) Building 221 Emergency Generator
Caterpillar Model C18DITA
Horsepower: 900
BTU input: 5.89 MMBtu/hour
Cylinder volume: 3.02 L

EP36 (75) Building 415 Emergency Generator
MTU Onsite Energy Model 12V2000G85
Horsepower: 1193
BTU input: 7.92 MMBtu/hour

Emission Point #17, 25, 36, 37, 38, 39, 41, 43, 63, 87 Diesel Emergency Generators

EP37 (76) Building 194/195 Emergency Generator
MTU Onsite Energy Model 12V2000DS800
Horsepower: 1193
BTU input: 7.92 MMBtu/hour

EP38 (77) Building 192A/192C Emergency Generator
MTU Onsite Energy Model 12V2000DS800
Horsepower: 1193
BTU input: 7.92 MMBtu/hour

EP39 (78) Building 192B Emergency Generator
MTU Onsite Energy Model 12V2000DS800
Horsepower: 1193
BTU input: 7.92 MMBtu/hour

EP41 (80) Portable Emergency Air Compressor
Sullair Model 4024TF270
Horsepower: 60
BTU input: 0.425 MMBtu/hour
Cylinder volume: 0.61 L

EP43 (82) Building 221 Emergency Generator
Kohler Model 100REOZJF
Horsepower: 158
BTU input: 1.12 MMBtu/hour
Cylinder volume: 1.13 L

EP63 (89) Building 415 Emergency Generator
Generac, Diesel, Model SD500
Horsepower: 670
Fuel input: 32 gal/hr
Cylinder volume: 2.53 L

EP87 (102) Building 344 Emergency Generator
Caterpillar model D1250 GC
Horsepower: 1200
Fuel input: 87.4 gal/hr
Cylinder volume: 2.675 L

Applicable Regulations:
401 KAR 63:002 Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

401 KAR 60:005 Section 2(2)(dddd), 40 C.F.R. 60.4200 through 60.4219, Tables 1 through 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

Emission Point #17, 25, 36, 37, 38, 39, 41, 43, 63, 87 Diesel Emergency Generators

Comments:
Emission Point 25 is the only generator constructed prior to 2007 and has its own specific emission standard in this grouping.

Emission Point #40 Emergency Diesel Fire Pump

Initial Construction Date: EP40, 2010

Process Description:
EP40 (79) Building 20 Emergency Fire Pump
Clarke Model JX6H-UFADF0
Horsepower: 488
BTU input: 3.33 MMBtu/hour
Cylinder volume: 2.25 L

Applicable Regulations:
401 KAR 63:002 Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

401 KAR 60:005 Section 2(2)(dddd), 40 C.F.R. 60.4200 through 60.4219, Tables 1 through 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

Comments:
None

Emission Point #46, 47 Emergency Natural Gas Generators

Initial Construction Date: EP46 2016, EP47 2017

Process Description:
EP46 (85) Building 6 Emergency Natural Gas Generator
Cummins Model: C60 N6
Horsepower: 98
Max Fuel Consumption: 933.8 scfh

EP47 (53) Building 12A Emergency Propane Generator
Kohler Model: 60REZGB
Liquefied Petroleum Gas Rich Burn Engine
Horsepower: 105
Max Fuel Consumption: 328 scfh

Applicable Regulations:
401 KAR 63:002 Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

Emission Point #46, 47 Emergency Natural Gas Generators
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* **Comments:** EP46 and EP47 have different emission standards. This is because EP47 is a liquid petroleum gas rich burn engine.

Insignificant Activity - Building 1 Generator (EP #18)
Initial Construction Date: 7/22/2008 **Process Description:** 25 kW, 27 hp propane-fired generator. Model: 25-GGMB-A S/N: E080183406 **Applicable Regulations:** 401 KAR 63:020, *Potentially hazardous matter or toxic substances.* **Comments:** Because the engine was constructed after June 12, 2006, it is considered a new engine by 40 CFR 63, Subpart ZZZZ. This means it has no requirements from 40 CFR 63, Subpart ZZZZ except to comply with all applicable requirements of 40 CFR 60, Subpart JJJJ. The engine was manufactured prior to January 1, 2009, therefore it is not subject to 40 CFR 60, Subpart JJJJ.

Insignificant Activity 66: Mobile Downdraft Tables				
Pollutant	**Emission Limit or Standard**	**Regulatory Basis for Emission Limit or Standard**	**Emission Factor Used and Basis**	**Compliance Method**
PM	2.34 lbs/hr	401 KAR 59:010, Section 3(2)	Engineering Estimation	Integral Cartridge Filters with 99.97% PM Control Efficiency
	20% opacity	401 KAR 59:010, Section 3(1)	N/A	Monthly Stack Visual Observation
Initial Construction Date: 4/2025 **Process Description:** Four mobile downdraft tables used for capture and control of particulates associated with hand sanding of parts including aluminum, steel, Kevlar, and phenolic composites. The downdraft tables are not associated with the Iridite coating process and any Iridite-coated (aluminum) parts that are sanded will contain less than 0.1% chromium. The tables use an integral cartridge filter with an estimated 99.97% control effectiveness for PM.				

Insignificant Activity 66: Mobile Downdraft Tables

Applicable Regulations:
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.

401 KAR 63:020, *Potentially hazardous matter or toxic substances.*

Comments:
The aluminum parts sanded in the tables are coated with an Iridite coating that contains chromium. This coating is applied at a density of approximately 20 mg/ft^3. The average surface-area-to-volume ratio of the parts is 6 cm^2/cm^3. The density of the aluminum used is 2.79 g/cm^3. This results in an approximate ratio of 0.128 mg of Iridite coating per 2,790 mg aluminum part. This yields a chromium content of 0.0043%, which is less than 0.1%. Because the chromium content is less than 0.1%, the parts are not considered to be plating and polishing metal HAP by 40 CFR 63.11511. Therefore, 40 CFR 63, Subpart WWWWWW does not apply to the process.

SECTION 3 – EMISSIONS, LIMITATIONS AND BASIS (CONTINUED)

Testing Requirements\Results

Emission Unit(s)	Control Device	Parameter	Regulatory Basis	Frequency	Test Method	Permit Limit	Test Result	Thruput and Operating Parameter(s) Established During Test	Activity Graybar	Date of last Compliance Testing
01	Carbon adsorber	VOC Control	Voluntary to establish C.E.	Initial and every 5 years	Method 25A	N/A	N/A	8 gal/hr coating, 86.1% C.E.	CMN20050003	6/7/2005
01	3 Stage Filter	PM Control	Voluntary to establish C.E.	Initial	Method 5	N/A	N/A	98.1% C.E.	CMN20050006	12/13/2005
01	Carbon adsorber	VOC Control	Voluntary to establish C.E.	every 5 years	Method 25A	N/A	N/A	53.99 lb/hr 93.3% C.E.	CMN20100013	8/4/2010
01	N/A	VOC capture efficiency	Voluntary to establish PTE	Initial	Method 204	N/A	N/A	53.99 lb/hr	CMN20100013	8/4/2010
01	Carbon adsorber	VOC Control	Voluntary to establish C.E.	every 5 years	Method 25A	N/A	N/A	21.15 lb/hr 90.79% C.E.	CMN20150013	7/29/2015
01	N/A	VOC capture efficiency	Voluntary to establish PTE	Initial	Method 204	N/A	N/A	21.15 lb/hr	CMN20150013	7/29/2015
01	Carbon adsorber	VOC Control	Voluntary to establish C.E.	every 5 years	Method 25A	N/A	N/A	8 gal/hr 94.4% C.E.	CMN20200014	7/20/2020
01	N/A	VOC capture efficiency	Voluntary to establish PTE	Initial	Method 204	N/A	N/A	8 gal/hr	CMN20200014	7/29/2020

01	Carbon adsorber	VOC Control	Voluntary to establish C.E.	every 5 years	Method 25A	N/A	TBD	N/A	TBD	TBD

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS

Table A - Group Requirements:

Emission and Operating Limit	Regulation	Emission Unit
90 tpy of VOC emissions	To preclude the applicability of 401 KAR 52:020, *Title V Permits*	Source-wide
9.0 tpy of individual HAP emissions	To preclude major source status for HAP	Source-wide
22.5 tpy of combined HAP emissions	To preclude major source status for HAP	Source-wide
6.0 pounds per year of Chromium VI	401 KAR 63:020, *Potentially hazardous matter or toxic substances*	Source-wide
0.178 tons per year of 1,6-Hexamethylene Diisocyanate (CAS# 822-06-0)	401 KAR 63:020, *Potentially hazardous matter or toxic substances*	Source-wide
2.89 tons per year of 4-Chlorobenzotrifluoride (CAS# 98-56-6)	401 KAR 63:020, *Potentially hazardous matter or toxic substances*	Source-wide

Table B - Summary of Applicable Regulations:

Applicable Regulations	Emission Unit
401 KAR 59:010, *New process operations*	01, 02, 04, 05, 07, 08, 24, 26, 28, 29, 30, 31, 32, 33, 48, 60, 64, 65, 77-83, 88
401 KAR 59:015, *New indirect heat exchangers*	11
401 KAR 63:020, *Potentially hazardous matter or toxic substances*	01, 02, 04, 07, 08, 48
401 KAR 60:005 Section 2(2)(dddd), 40 C.F.R. 60.4200 through 60.4219, Tables 1 through 8 (Subpart IIII), *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*	17, 25, 36, 37, 38, 39, 40, 41, 43, 63, 87
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*	46, 47
401 KAR 63:002 Section 2(4)(eeee), 40 C.F.R. 63.6580 through 63.6675, Tables 1a through 8, and Appendix A (Subpart ZZZZ), *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*	13, 15, 16, 17, 25, 36, 37, 38, 39, 40, 41, 43, 46, 47, 63, 87
401 KAR 63:002 Section 2(4)(uuuuu), 40 C.F.R. 63.11504 through 63.11512, Table 1 (Subpart WWWWWW), *National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Plating and Polishing Operations*	24, 26, 28, 29, 30, 31, 32, 33, 60, 64, 65, 77-83

SECTION 4 – SOURCE INFORMATION AND REQUIREMENTS (CONTINUED)

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:

N/A

Air Toxic Analysis

401 KAR 63:020, *Potentially Hazardous Matter or Toxic Substances*
The Division for Air Quality (Division) has performed modeling using AERMOD on May 21, 2024 of potentially hazardous matter or toxic substances (Hexamethylene Diisocyanate, 1,6-1,4-Dioxane, Acetaldehyde, Cumene, Diethanolamine, Ethylbenzene, Ethylene Oxide, Isopropanol, Manganese (Diet), Methanol, Methyl Ethyl Ketone (2-Butanone), Methyl Isobutyl Ketone (4-methyl-2-pentanone), Nickel Soluble Salts, Propylene Oxide, Toluene, Triethylamine, 1,2,4-Trimethylbenzene, Xylenes, Propylene Glycol Monomethyl Ether, Tert-Butyl Acetate, 4-Chlorobenzotrifluoride) 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.

Bluegrass Station modeled the source using the ISCST 3 model to obtain specific information on the concentration of toxics emitted from the source. It was determined by DAQ through use of ISCST 3 modeling that emissions of up to 6.0 pounds of chromium VI per year would not pose a threat to public health [F-03-029].

Single Source Determination
N/A

SECTION 5 – PERMITTING HISTORY

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
F-03-029	Initial Issuance	55963	10/8/2003	11/8/2004	Initial	Syn Minor
F-03-029 R1	Minor Revision	APE20040003	3/17/2005	3/31/2005	Updated descriptions of control equipment for EP02, EP03, EP04, EP07 & EP08	N/A
F-03-029 R2	Minor Revision	APE20060003	1/5/2007	1/9/2007	Addition of three generators and three paint booths and a sanding booth	Syn Minor
F-09-019	Renewal	APE20090001	5/29/2009	2/15/2010	Permit Renewal	N/A
F-09-019 R1	Minor Revision	APE20100004	8/27/2010	11/5/2010	Addition of insignificant units and removal of an emission point	N/A
F-09-019 R2	Minor Revision	APE20100005	11/9/2010	1/6/2011	Addition of three downdraft tables, one sanding booth, and two wire maker cabinets	N/A
F-09-019 R3	Minor Revision	APE20110002	1/10/2012	1/30/2012	Addition of two downdraft tables and removal of a boiler	N/A
F-09-019 R4	Admin Admen	APE20120001	5/23/2012	6/14/2012	Update Emission Point Descriptions	N/A
F-09-019 R5	Minor Revision	APE20120004	10/17/2012	10/29/2012	Addition of one downdraft table	N/A
F-14-041	Renewal	APE20140001	9/15/2014	11/24/2014	Renewal	N/A

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
					Permit	
F-14-041 R1	Minor Revision	APE20140002	12/31/2014	2/6/2015	Emergency CI-ICE Engine and Welding additions	N/A
F-14-041 R2	Minor Revision	APE20150003	4/27/2015	5/4/2015	Replacement of a Generator	N/A
F-14-041 R3	Minor Revision	APE20160005	6/13/2016	7/8/2016	Addition of a Natural Gas Generator	N/A
F-14-041 R4	Minor Revision	APE20160007	1/31/2017	2/9/2017	Replacement of a Generator	N/A
F-14-041 R5	Minor Revision	APE20170001	8/24/2017	9/9/2017	Addition of Touchup Surface Coating Operation	N/A
F-19-027	Renewal	APE20190001	7/26/2019	6/1/2020	Renewal Permit	N/A
F-19-027 R1	Minor Revision	APE20200001	6/8/2020	9/20/2020	Addition of a new Iridite process (EP60) and parts cleaner (EP61)	N/A
F-19-027 R2	Minor Revision	APE20200002	1/15/2021	4/25/2021	Addition of an Emergency Generator (EP63), Two New Downdraft Tables (EP64, EP65) and Several Insignificant Activities	N/A
F-19-027 R3	Minor Revision	APE20230001, APE20230003	3/9/2023, 5/8/2023	10/6/2023	Addition of EP 77-83 Downdraft Tables, Removal of EP03, Addition of EP87 Emergency Generator and	N/A

Permit	Permit Type	Activity#	Complete Date	Issuance Date	Summary of Action	PSD/Syn Minor
					Several Insignificant Activities, EP24 Changed from Type I to Type II Iridite Process	

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