Asheville Buncombe Air Quality Agency
APPLICATION REVIEW SUMMARY

SECTION A: FACILITY INFORMATION			
Company Name:	BorgWarner, Inc.		
Site Name:	BorgWarner Emissions, Thermal & Turbo Systems		
Mailing Address:	PO Box 15075, Asheville, NC 28813		
Site Address:	1849 Brevard Road, Arden, NC 28704		
General Description of Business:	Automotive Components Manufacturer (Turbochargers)		
Facility Classification:	Title V	**Site Status:**	Existing

SECTION B: APPLICATION INFORMATION			
Date Of Application:	July 2, 2024	**Application Tracking No.:**	NA
Date Complete Application Received:	July 5, 2024	**Board Meeting Date:**	September 11, 2025
Confidentiality Requested?	No	**Board Agenda Type:**	Renewal
Application Results:	The purpose of this review is to lend approval to BorgWarner Turbo Systems for renewal of its permit to operate.		
Permit No. / Date Issued by Application:	11-773-24		
Permit No. / Date Voided by Application:	11-773-19		

SECTION C: REGULATORY INFORMATION	
AB Air Quality Regulations:	4.0515, 4.0516, 4.0521, 4.0524, 4.1111, 4.1806, 17.0500, 17.0700

SECTION D: FACILITY-WIDE EMISSIONS INFORMATION

Pollutants Reviewed as a Result of this Application or AB Air Quality Action:	2023 Actual Emissions (TONS/YR)	Potential Emissions (TONS/YR)
CO	1.0	127.6 / 26.5*
NO_X	1.7	452.8 / 47.8*
PM	1.1	21.0 / 9.0*
PM_{10}	1.1	18.6 / 8.9*
$PM_{2.5}$	1.1	18.3 / 8.9*
SO_2	0.01	69.3 / 3.4*
VOC	0.3	43.4 / 36.3*
Greenhouse Gases, CO_{2e}	919.4	30,800 / 18,392*
Total HAPs	0.02	0.5 / 0.3*
List all HAPs >10 TPY	None	None

***Emission numbers denoted with a (*) reflect "controlled" emissions (i.e., emissions reduced by a pollution control device or an operational limit).**

IN COMPLIANCE WITH EMISSION STANDARDS / RECOMMEND APPROVAL			
Prepared By:	Allison Glass / Allison Glass	**Date Completed:**	06/05/2025
Reviewed By:	James Raiford / James C. Raiford	**Date Approved:**	06/12/2025
Director:	Ashley Featherstone / Ashley J Featherstone	**Date Approved:**	7/09/2025

SECTION A DETAILS

FACILITY INFORMATION

[Detailed discussion of any items in Section A]

BorgWarner Turbo Systems (BWTS), a division of the global automotive supplier BorgWarner, Inc., manufactures commercial vehicle turbochargers. The facility also plays the role of research and development center for the company's North American operations.

In their turbocharger production operations, the facility utilizes three diesel-fired internal combustion engine test cells, one of which (AEC-4) has the capability to test turbochargers on gasoline engines. Each test cell is essentially a metal frame that allows for the mounting of a diesel engine. With an engine mounted, the facility conducts dynamometric testing of the engine with a turbocharger that has been specifically designed for that engine model. Once the facility has fine-tuned the turbocharger to achieve the desired performance specifications for that engine model, the turbocharger can begin mass production. The pollutants of concern are from diesel combustion and include carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter (PM, PM_{10}, $PM_{2.5}$), sulfur dioxide (SO_2), volatile organic compounds (VOCs), and various hazardous air pollutants (HAPs) and toxic air pollutants (TAPs).

In their turbocharger production operations, the facility also utilizes seven natural gas-fired turbocharger test cells. Each turbocharger test cell is essentially a metal frame that allows for the mounting of a turbocharger to a small natural gas-fired burner. With a turbocharger mounted, the facility conducts endurance testing of the turbocharger with the natural gas-fired burner supplying simulated engine exhaust gases. The pollutants of concern are the result of natural gas combustion and include CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOCs, and various HAPs and TAPs.

BWTS also had a remanufacturing operation (Reman) where used turbochargers received from customers are disassembled, the scrap material is separated out, and the salvageable components are reprocessed. PM generated by the various machining processes in Reman is routed to a Torit dust collection system, which is exhausted outdoors. The pollutants of concern are PM, PM_{10}, $PM_{2.5}$, and a few metal HAPs and TAPs. This operation no longer exists and has been removed from the permit.

The facility processes wastewater from various operations, including building cleaning and maintenance, using a natural gas-fired thermal oxidizer (TO-2) to evaporate the wastewater. Pollutants from this operation are the result of natural gas combustion and wastewater solids, including PM, PM_{10}, , $PM_{2.5}$, VOCs, and various HAPs and TAPs.

The facility has been regulated as a Title V source due to potential emissions exceeding 100 tons per year for NOx and CO emissions related to the engine test cells (AEC1-4). The facility has elected not to take a Title V limit on these sources. They have taken a toxics limit that keeps their actual emissions below Title V thresholds.

General Conditions and the list of insignificant activities will be updated as part of this renewal. The facility has requested modifications to AEC-1 and AEC-4,diesel-fired internal combustion engine test cells that can now also be used to test natural-gas fired combustion engines. AEC-3 was a diesel-fired internal combustion engine test cell that has now been decommissioned and will be removed from the permit. For the insignificant sources, the eight natural gas-fired turbocharger test cells, AGS-1 through AGS-8, are now grouped together for a combined maximum capacity of 24 MMBtu/hr. ES-118 which included various parts washers has been removed from the facility and will be removed from the permit. ES-125 and ES-126 were added as insignificant activities. In addition, BorgWarner Turbo Systems requested to change their name to BorgWarner Emissions, Thermal & Turbo Systems. The permit application fee was received on August 27, 2024.

The Agency received comments from EPA regarding the draft permit. The recommended changes were minor and mainly involved some references in the permit that needed to be updated. A full list of those changes can be found in the permit review folder for this permit under EPA Review Notes.

SECTION B DETAILS

APPLICATION INFORMATION

[List all emission sources (permitted and exempt) reviewed as a result of this application, their associated control devices and pollutants. Provide a detailed discussion of any other items in Section B at bottom under "Application Notes"]

Emission Source ID	Emission Source Description 1. Type, manufacturer, capacity 2. Control device with ID (if any)	Pollutant(s) Emitted	Miscellaneous Notes
AEC-1	One (1) diesel-fired internal combustion engine test cell for engines with a maximum output rating of 1,500 horsepower that can also be used to test natural-gas fired internal combustion engines with a maximum output rating of 516 horsepower.	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	
AEC-2	One (1) diesel-fired internal combustion engine test cell for engines with a maximum output rating of 1,500 horsepower	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	
AEC-4	One (1) diesel-fired internal combustion engine test cell for engines with a maximum output rating of 1,500 horsepower that can also be used to test gasoline-fired internal combustion engines with a maximum output rating of 375 horsepower and natural-gas fired internal combustion engines with a maximum output rating of 516 horsepower.	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	
TO-2	One (1) 2.50 million BTU per hour natural gas-fired thermal oxidizer	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	RGF Environmental Systems, Inc. This oxidizer processes mop water and has a capacity of 150 gallons per hour
The following equipment meets the definition of insignificant activity pursuant to the AB Air Quality Code 17.0503 – "Definitions."			
IC-1	One (1) 150-kilowatt (225 horsepower) Cummins natural gas-fired emergency generator	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	Model GGLB. Although exempt from permitting, this generator will be included as a permitted source so that the relevant requirements of NSPS Subpart JJJJ can be included in the permit.
IC-2	One (1) 35-kilowatt (68 horsepower) Generac natural gas-fired emergency generator	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	Model 3434650100. Although exempt from permitting, this generator will be included as a permitted source so that the relevant requirements of MACT Subpart ZZZZ can be included in the permit.
IC-3	One (1) 175-horsepower Clarke diesel-fired fire pump	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, CO_{2e}	Model JU6H-UFM0. The engine was manufactured by John Deere. Although exempt from permitting, this fire pump will be included as a permitted source so that the relevant requirements of NSPS Subpart IIII can be included in the permit.

ES-120	One (1) 1,000-gallon aboveground gasoline storage tank	VOC, HAP, TAP	Although exempt from permitting, this tank will be included as a permitted source so that the relevant requirements of MACT Subpart CCCCCC can be included in the permit.
ES-110	Eight (8) natural gas-fired turbocharger test cells: Combined maximum capacity of 24 MMBtu/hr.	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	These units were previously listed as AGS-1-8, but are now listed as one unit with a combined maximum capacity for flexibility. These units are considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
ES-111	One (1) 6,000-gallon aboveground diesel storage tank	VOC, HAP, TAP	This unit is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
ES-113	One (1) Shaft and Wheel Washer utilizing a 1.03 million BTU per hour natural gas-fired burner	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	This unit is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
ES-119	One (1) Landa Pressure Washer utilizing one (1) 0.95 million BTU per hour natural gas-fired burner	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	This unit is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
ES-121	One (1) 250-gallon aboveground diesel storage tank.	VOC, HAP, TAP	This unit is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
ES-122	Three (3) Hydrotron DHYD Series wet collector downdraft workstations	PM, PM_{10}, $PM_{2.5}$	The facility requested that this source be removed from the Insignificant Activity list because they are PM emission sources that vent indoors. Per AB Air Quality Code 17.0508(i)(13), fugitive emission sources do not need to be included in Title V permits unless they are subject to regulation. This source will be removed from the permit during this renewal.
ES-123	One (1) QA/QC Laboratory	VOC, HAP, TAP	This unit is considered an insignificant activity because of size or production rate as defined in AB Air Quality Code 17.0503 – "Definitions."
ES-124	One (1) boiler utilizing a 1.999 million BTU per hour natural gas-fired burner	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	This was an off-permit change. Borg Warner notified us in an email on October 5, 2016.

ES-125	One (1) Fan Drive Assembly Operation	VOC	This operation consists of a ink jet printer, a machining coolant operation, and a coil encapsulating operation. This equipment was previously located at the Fletcher plant and was re-located to this facility in December of 2021.
ES-126	One (1) Molding Operation	VOC	Nylon injection molding operation. This equipment was previously located at the Fletcher plant and was re-located to this facility in December of 2021.
NA	Various oil mist eliminators that vent indoors (including units on five plasma welders and a high-speed core balancer in the testing lab)	PM, PM_{10}, $PM_{2.5}$, VOC, HAP, TAP	The facility requested that this source be removed from the Insignificant Activity list because they are PM emission sources that vent indoors. Per AB Air Quality Code 17.0508(i)(13), fugitive emission sources do not need to be included in Title V permits unless they are subject to regulation. This source was removed from the permit during the previous renewal in 2019.
NA	Various natural gas-fired space heaters	CO, NO_X, PM, PM_{10}, $PM_{2.5}$, SO_2, VOC, HAP, TAP, CO_{2e}	The facility requested that this source be removed from the Insignificant Activity list because they are considered insignificant because of category, and thus are not required to be included in at Title V permit per AB Air Quality Code 17.0507(b). This source was removed from the permit during the previous renewal in 2019.

APPLICATION NOTES

As part of the permit renewal application, the insignificant activities have been updated.

SECTION C DETAILS

REGULATORY INFORMATION

(Identify the AB Air Quality Regulations reviewed because of this application. At a minimum, the regulations already listed should be reviewed and reason given for applicability or non-applicability. If a regulation has a standard, list the standard and indicate how the source is in compliance.)

AB Air Quality Regulation Number / Title	Emission Source ID No(s). Subject	Notes on Regulation (Compliance demonstration, applicability, etc.)
17.0500 – Title V Procedures	Facility-Wide	The facility has been regulated as a Title V source due to potential emissions exceeding 100 tons per year for NOx and CO emissions related to the engine test cells (AEC1-4). Previously, the facility had also been subject to Title V permitting procedures because the former vibration damper operation had potential emissions in excess of the 100-ton per year applicability threshold for VOCs, the 25-ton per year applicability threshold for combined HAPs, and the 10-ton per year applicability threshold for individual HAPs. The vibration damper operation has been removed and the facility no longer exceeds major source thresholds for combined and single HAPs. Although maximum emissions (with the PSD avoidance limit) are now below all Title V permitting thresholds, the facility wishes to retain its Title V permit and has not taken a limit to stay below TV thresholds.
17.0700 – Toxic Air Pollutant Procedures	Facility-Wide	The facility was subject to a toxics evaluation in 2010 because of a modification to combustion source AEC-4. This resulted in a diesel usage limitation of 74,000 gallons per year for AEC-1, AEC-2, and AEC-4, so that all TAP emissions would be below the TPERs (see file for Permit No. 11-773-09A). This limit was modified in 2020 to 68,500, which included adding a boiler and changing the rating of the AGS test cells. For this permit renewal, in order to stay below the TPERs for all TAP emissions, a diesel usage limitation of 67,000 gallons per year for AEC-1, AEC-2, and AEC-4 will replace the previous limitation. This was due to the addition of burning natural gas in AEC-1 and AEC-4. This includes the change in the rating of the AGS test cells.
4.0524 – New Source Performance Standards (40 CFR 60, Subpart IIII)	IC-3	This emergency-use fire pump is subject to the requirements of 40 CFR Part 60, Subpart IIII – "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines," which requires that the engine meets the emission limits listed in the subpart. The fire pump must be equipped with a non-resettable hour meter (if the engine does not meet the standards applicable to non-emergency engines) and nonemergency use (e.g., testing) is limited to 100 hours per year. Ultra-low sulfur diesel (ULSD) fuel must be used. See the notes below for additional information.
4.0524 – New Source Performance Standards (40 CFR 60, Subpart JJJJ)	IC-1	This emergency-use generator is subject to the requirements of 40 CFR Part 60, Subpart JJJJ – "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines," which requires that the generator meets the emission limits listed in the subpart. Nonemergency use (e.g., testing) is limited to 100 hours per year. Because the engine was built before January 1, 2011, a non-resettable hour meter is not required. See the notes below for additional information.

4.0530 – Prevention of Significant Deterioration / 17.0307 - Avoidance Conditions	AEC-1, AEC-2, AEC-4	The previous diesel usage limitation of 250,000 gallons per year for AEC-1, AEC-2, and AEC-4 will be retained in order to keep the facility's potential NO_X emissions below the 250 tons per year threshold, and thus, preclude applicability of this regulation. The facility documents continuous compliance with this limitation through monitoring, recordkeeping, and reporting on a rolling 12-month basis.
4.1111 – Maximum Achievable Control Technology (40 CFR 63, Subpart ZZZZ)	IC-2	This emergency generator is subject to 40 CFR Part 63, Subpart ZZZZ – "National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines." Requirements involve maintenance practices, such as changing the oil and filter, and inspecting the hoses and belts.
	IC-1, IC-3	These emergency generators are also subject to 40 CFR Part 63, Subpart ZZZZ. For these generators, compliance with NESHAPS Subpart ZZZZ is achieved by compliance with NSPS Subparts IIII and JJJJ.
4.1111 – Maximum Achievable Control Technology (40 CFR 63, Subpart CCCCCC)	ES-120	This gasoline tank is subject to 40 CFR Part 63, Subpart CCCCCC – "National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities." The required management practices include minimizing gasoline spills and cleaning spills expeditiously.
4.0515 – Particulates from Miscellaneous Industrial Processes	TO-2	This source is subject to this regulation because it exhausts PM into the outdoor atmosphere. The PM emission limit for this source is shown in the notes below.
4.0516 – Sulfur Dioxide Emissions from Combustion Sources	AEC-1, AEC-2, AEC-4, TO-2, IC-1, IC-2, IC-3	This regulation limits SO_2 emissions from these sources to 2.3 lb/MMBtu. The AP-42 SO_2 emission factor for the diesel test cells and the fire pump is 0.51 lb/MMBtu based on 0.5% fuel sulfur content. The AP-42 SO_2 emission factor for the gasoline test cell is 0.084 lb/MMBtu based on 0.5% fuel sulfur content. The AP-42 SO_2 emission factor for the natural gas test cells, the thermal oxidizer, and the generators is 0.00059 lb/MMBtu. Thus, the facility is in compliance.
4.0521 – Control of Visible Emissions	Facility-Wide	This regulation limits visible emissions from these sources to no greater than 20% opacity due to their post-1971 manufacture date. Compliance with this regulation will be determined through facility self-monitoring and Agency inspections.
4.1806 – Control and Prohibition of Odorous Emissions	Facility-Wide	This regulation requires that the facility prevent odorous emissions from causing or contributing to objectionable odors beyond their property line. Compliance with this regulation will be determined through facility self-monitoring and Agency inspections.

REGULATORY NOTES

Regarding AB Air Quality Code 4.0515 – Particulates from Miscellaneous Industrial Processes, the allowable emission limit for each emission source was calculated according to the following:

TO-2: Process Weight = 150 gal/hr x 8.33 lb/gal / 2,000lb/ton = 0.625 ton/hr
Allowable Emission Limit = $(4.10)*(0.625)^{0.67}$ = 2.99 lb PM/hr
Note: Process weight based on density of water.

SECTION D DETAILS				
EMISSION INFORMATION				
Calculation Method Codes (List all that apply)	**1 = Stack test result 2 = Material (mass) balance 3 = EPA approved information (AP-42, CTG, etc.) 4 = Other (specify in table below)**			
Calculation Rejection Codes (List all that apply)	**1 = Calculation error 2 = Wrong emission factor(s) used 3 = Control efficiency(ies) not accepted 4 = Other (specify in table below)**			
Emission Source (ID No.)	**Calculation Method Code**	**Accept or Reject?**	**Calculation Rejection Code**	**AB Air Quality Calculations Attached?**
Facility-Wide	1, 3	Accept	NA	Yes

EMISSION NOTES

AB Air Quality calculated potential emissions with and without operating limits.

SECTION E

SUPPORTING DOCUMENTATION

(Provide brief description of any attachments)

1. Title V permit renewal application dated July 5, 2024
2. Supporting calculations and documentation
3. Draft Title V permit
4. Draft permit cover letter
5. Draft public notice