

PERMIT NO. 3624-087-0061-P-01-0

ISSUANCE DATE: DRAFT



GEORGIA

DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

Air Quality Permit

In accordance with the provisions of the Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq and the Georgia Rules for Air Quality Control, Chapter 391-3-1, adopted pursuant to and in effect under the Act,

Facility Name: Anovion Technologies LLC
Facility Address: 1600 Pondtown Road
Bainbridge, Georgia 39817, Decatur County
Mailing Address: P.O. Box 469
St. Albans, Missouri 63073
Parent/Holding Company: Anovion Technologies LLC
Facility AIRS Number: 04-13-087-00061

is issued a Permit for the following:

Construction and operation of a greenfield site for an anode materials facility capable of producing 44,100 tons per year of lithium-ion battery grade synthetic graphite powder product from petroleum coke.

This Permit is conditioned upon compliance with all provisions of The Georgia Air Quality Act, O.C.G.A. Section 12-9-1, et seq, the Rules, Chapter 391-3-1, adopted and in effect under that Act, or any other condition of this Permit.

This Permit may be subject to revocation, suspension, modification or amendment by the Director for cause including evidence of noncompliance with any of the above, for any misrepresentation made in Title V Application TV-28941 dated July 13, 2023; updates received September 20, September 25, September 26, and November 3, 2023; January 3 and January 24, 2024; any other applications upon which this Permit is based, supporting data entered therein or attached thereto, or any subsequent submittal of supporting data, or for any alterations affecting the emissions from this source.

This Permit is further subject to and conditioned upon the terms, conditions, limitations, standards, or schedules contained in or specified on the attached **44** pages.



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Jeffrey W. Cown, Director
Environmental Protection Division

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Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Table of Contents

PART 1.0	FACILITY DESCRIPTION	1
1.1	Site Determination	1
1.2	Previous and/or Other Names	1
1.3	Overall Facility Process Description.....	1
PART 2.0	REQUIREMENTS PERTAINING TO THE ENTIRE FACILITY	4
2.1	Facility Wide Emission Caps and Operating Limits.....	4
2.2	Facility Wide Federal Rule Standards.....	4
2.3	Facility Wide SIP Rule Standards	4
2.4	Facility Wide Standards Not Covered by a Federal or SIP Rule and Not Instituted as an Emission Cap or Operating Limit	4
PART 3.0	REQUIREMENTS FOR EMISSION UNITS	5
3.1	Emission Units	5
3.2	Equipment Emission Caps and Operating Limits	10
3.3	Equipment Federal Rule Standards	19
3.4	Equipment SIP Rule Standards	20
3.5	Equipment Standards Not Covered by a Federal or SIP Rule and Not Instituted as an Emission Cap or Operating Limit	20
PART 4.0	REQUIREMENTS FOR TESTING.....	21
4.1	General Testing Requirements	21
4.2	Specific Testing Requirements	23
PART 5.0	REQUIREMENTS FOR MONITORING (Related to Data Collection)	26
5.1	General Monitoring Requirements.....	26
5.2	Specific Monitoring Requirements	26
PART 6.0	RECORD KEEPING AND REPORTING REQUIREMENTS	30
6.1	General Record Keeping and Reporting Requirements	30
6.2	Specific Record Keeping and Reporting Requirements.....	35
PART 7.0	OTHER SPECIFIC REQUIREMENTS.....	42
7.1	Specific Conditions	42
PART 8.0	GENERAL PROVISIONS	43
8.1	Modifications	43
8.2	Circumvention.....	43
8.3	Other General Provisions	43

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

PART 1.0 FACILITY DESCRIPTION

1.1 Site Determination

There are no properties that are under common control or that are considered to be contiguous or adjacent to this facility.

1.2 Previous and/or Other Names

None

1.3 Overall Facility Process Description

Anovion Technologies LLC submitted an application for a permit to construct and operate an anode materials facility capable of producing lithium-ion battery grade synthetic graphite powder product from petroleum coke. The proposed greenfield project will use green petroleum coke as a raw material, mill and calcine the coke, pack into canisters for graphitization in an Acheson Furnace at 3000°C, and then screen and package the final product. The facility anticipates manufacturing 40,000 metric tons (equivalent to 44,100 US tons) of synthetic graphite product per year.

Due to the calculated facility-wide emissions, a Prevention of Significant Deterioration (“PSD”) New Source Review (“NSR”) analysis was performed for the facility for all pollutants to determine if the proposed facility would be a major stationary source for any NSR pollutant and identify pollutants that would exceed the significant emission rate levels. The facility is expected to be a PSD major source because the potential-to-emit (“PTE”) for carbon monoxide (“CO”) is greater than the PSD major source threshold of 250 tons per year. The potential emissions of sulfur dioxide (“SO₂”), total suspended particulates (“filterable TSP, PM₁₀, and PM_{2.5}”), nitrogen oxides (NO_x), and volatile organic compounds (“VOC”) were determined to be above their respective PSD significant level thresholds.

Both green and calcined petroleum coke (“pet coke”) are delivered to the facility via railcar or truck. Green coke is used for anode powder production, and calcined coke is used as insulating and conductive pack in the graphitization process. Green pet coke will arrive via railcar and will unload into an underground vault in an open shed. The openings of the unloading shed will be equipped with air knives and fog dust suppression to keep fugitive dust from escaping. Truck unloading stations are in a partial enclosure to reduce fugitives. Green coke is stored in an outside pile; fugitive emissions occur during addition/removal, and wind erosion. The material is conveyed from the unloading location to the top of the pile stacker by covered conveyors and enclosed transfer points. A Pile Stacker then distributes the pet coke into piles. As needed, pet coke is removed from the pile and conveyed to the process. Green coke from the bulk pile passes through a de-lumper to break up any large chunks on the way to the milling process. Design capacity for the unloading equipment is 100 metric tons per hour (110.23 tons per hour). Calcined coke is stored separately. Lime is brought in by truck for use in the graphitization dry scrubber system. Fresh lime is stored in silos and conveyed to the scrubber when needed. Spent lime is conveyed back and stored in separate silos until it is trucked out for removal.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Green coke is conveyed to a milling system that includes a jet mill to further reduce the feed size for optimal performance, and a magnetic separator to remove ferrous contamination. Coke powder in the jet mill is milled to an average of 5 to 20 microns, pulled through a classifier wheel, and then into a baghouse to be trapped on the outside of bags. Periodic back-pulsing causes the fine powder to fall to the bottom of the baghouse. A screen downstream will remove any oversize material that might result from a jet mill malfunction. The oversized material is recycled back into the mill feed system. Milled material is then conveyed to calcining.

Milled coke powder is loaded into graphite canisters, which travel through electric roller hearth kilns where they are heated to 1200°C in a nitrogen inert atmosphere to prevent burning the product. This drives off volatile material and turns the green coke into calcined coke. Calcined coke powder is unloaded from the canisters and conveyed to blending. A small amount (<1 weight percent total) of proprietary additive powder is blended into the calcined coke powder. Pet coke and additive are metered into the blender, blended for a period of time, and then conveyed to graphitization canister loading.

The facility will include two graphitization buildings; each building contains 14 furnaces which share a single DC electrical power supply. Blended coke powder is loaded and tamped into cylindrical graphite canisters for graphitization in an Acheson Furnace. The canisters are equipped with a lid. Loaded canisters are placed in the graphitization furnaces and surrounded by additional pet coke for a conductive core down the middle of the furnace. This conductive core is then surrounded by insulating pack material, which is less electrically conductive than the pack in the center conductive core. A fume hood is placed on top after loading the canisters into the furnace. A large DC current (up to 320,000 amps) is applied to the conductive core. This heats the furnace up to an average of 3000°C and the blended coke in the canisters is converted to graphite powder. The complete furnace operating cycle takes 56 hours on average to complete. It takes on average 54 hours for an individual furnace to be heated up from ambient temperature to 3,000°C and complete the graphitization process, and then it takes another approximately 2 hours to power down and disconnect the furnace from the power supply. For cost and logistical reasons, the two buildings are operated alternately – the second building will start heating up halfway through the first building’s cycle. Assuming continuous operation and 168-hour work week, three furnace runs can be completed in each building per week, with a total of six furnace runs total per week from both buildings. The furnace runs are offset to even out power demand and minimize peak power usage for the plant.

The exhaust from the Acheson furnace is captured in the fume hoods and then sent through Circulating Fluidized Bed dry scrubbers to remove SO₂ emissions, which result from the release of sulfur contained in the calcined product pet coke as well as in the purchased calcined coke used for packing and insulating. Additionally, these dry scrubbers will be removing filterable total suspended particulates (“TSP”), PM₁₀, and PM_{2.5} emissions. VOC emissions are not expected from the furnaces as all volatiles are driven off in the calcining process.

The final powder is screened, has ferrous particles removed, and packaged into supersacks to be stored until they are loaded out onto railcars or trucks. Filterable TSP emissions that result from milling, hoppers, and product packaging are controlled with baghouses and/or vent filters.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

The primary product will be uncoated powdered graphite; however, a portion of the milled green coke could undergo granulation and post-graphitization coating in the production of a secondary product. In granulation, the milled green coke is coated with a small amount of pitch. The granulated product is kept separate from the non-granulated product while going through calcining and graphitization. The secondary coated product does not get the above-mentioned additive.

The granulated particulates are then coated a second time with a thin layer of pitch, then heated in carbonizing kilns to form a thin outer layer of carbon on the graphite product. The final powder is screened, has ferrous particles removed, and is packaged into supersacks to be stored until they are loaded out onto railcars or trucks.

The facility will also include several support areas as outlined below.

- Cooling towers are used to provide process cooling as well as HVAC cooling. Because of dissolved solids contained in the recirculating water, drift losses from the towers result in PM emissions.
- Two diesel-powered emergency generators will be installed for backup power, and two diesel-powered fire pumps will be installed to pump water in case of a fire. Both the emergency generators and fire pumps will emit products of fuel combustion. The facility will use ultra-low sulfur oil in all four units, and all four will be used 500 hours per year or less.
- The jet mills and nitrogen generation unit consume large amounts of air and have dedicated air compressors.
- Cooling water is required for cooling the furnace rectifier and components, as well as in the coating/granulation process.
- Chilled water is required for cooling the calcining kiln and magnetic separator. Dedicated chillers are provided for each process.
- Nitrogen of purity 99.95% is required for providing an inert atmosphere in the calcining and carbonizing kilns.
- Natural gas is required for the thermal oxidizer burners to destroy volatile components evolved from the calcining and carbonizing kilns.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

PART 2.0 REQUIREMENTS PERTAINING TO THE ENTIRE FACILITY

2.1 Facility Wide Emission Caps and Operating Limits

- 2.1.1 The Permittee shall not produce more than 40,000 metric tons (44,100 tons) of synthetic graphite product from the facility during any consecutive twelve-month period.
[40 CFR 52.21]
- 2.1.2 The Permittee shall not exceed 314 synthetic graphite product production cycles through both Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined, during any consecutive twelve-month period.
[40 CFR 52.21]

2.2 Facility Wide Federal Rule Standards

None applicable.

2.3 Facility Wide SIP Rule Standards

None applicable.

2.4 Facility Wide Standards Not Covered by a Federal or SIP Rule and Not Instituted as an Emission Cap or Operating Limit

None applicable.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

PART 3.0 REQUIREMENTS FOR EMISSION UNITS

Note: Except where an applicable requirement specifically states otherwise, the averaging times of any of the Emissions Limitations or Standards included in this permit are tied to or based on the run time(s) specified for the applicable reference test method(s) or procedures required for demonstrating compliance.

3.1 Emission Units

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
EG01 EG02	Ultra-low sulfur diesel fired Emergency Generators 1 and 2 – 2,933 hp (22.49 MMBtu/hr)	40 CFR 52.21 40 CFR 60 Subpart A 40 CFR 60 Subpart IIII 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ	None	None
FP01 FP02	Ultra-low sulfur diesel fired Fire Pumps 1 and 2 – 400 hp (3.31 MMBtu/hr)	40 CFR 52.21 40 CFR 60 Subpart A 40 CFR 60 Subpart IIII 40 CFR 63 Subpart A 40 CFR 63 Subpart ZZZZ	None	None
BB01 BB02 BB1G BB2G BB1C BBGA	Building 1 Cooling Tower Building 2 Cooling Tower Building 1 Graphitization Cooling Tower Building 2 Graphitization Cooling Tower Building 1 Coatings Cooling Tower Building 1 Granulation Cooling Tower	40 CFR 52.21 391-3-1-.02(2)(n)	None	None
STOR	Fugitives – Outdoor Pet Coke Storage	40 CFR 52.21 391-3-1-.02(2)(n)	None	None
DRP1	Fugitives – Drop emissions from feed conveyor to pile stacker	40 CFR 52.21 391-3-1-.02(2)(n)	None	None
DRP2	Fugitives – Drop emissions from pile stacker to pile	40 CFR 52.21 391-3-1-.02(2)(n)	None	None
GATH	Fugitives - Gathering conveyor to indoor storage	40 CFR 52.21 391-3-1-.02(2)(n)	None	None
FUG1	Fugitives - Coke Unloading Fugitives	40 CFR 52.21 391-3-1-.02(2)(n)	None	None
FUG2	Fugitives – Truck and Rail Unloading Fugitives	40 CFR 52.21 391-3-1-.02(2)(n)	None	None
SLLF	Fugitives - Spent Lime Loadout	40 CFR 52.21 391-3-1-.02(2)(n)	None	None
CK01 CK02	Calcining Kiln 1 Calcining Kiln 2	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	TO01	Thermal Oxidizer
CK03 CK04	Calcining Kiln 3 Calcining Kiln 4	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	TO02	Thermal Oxidizer
CK05 CK06	Calcining Kiln 5 Calcining Kiln 6	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	TO03	Thermal Oxidizer
CAK1 CAK2	Carbonizing Kiln 1 Carbonizing Kiln 2	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	TO04	Thermal Oxidizer
GR01	Graphitization Furnace Building 1	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	SCR1	Circulating Fluidized Bed Scrubber System

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
GR02	Graphitization Furnace Building 2	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	SCR2	Circulating Fluidized Bed Scrubber System
BE01	B1 Bucket Elevator 1	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC01	Baghouse
CL01	B1 Coke Cooler 1			
CS01	B1 Jaw Crusher 1			
CV01	B1 0-8mm Chain Conveyor to Recycle Bin 1			
CV02	B1 Vibrating Conveyor 1			
CV03	B1 Chain Conveyor (oversize) 1			
FE01	B1 Feeder from Bin 1			
PM01	B1 Feed Bin to Bagging 1			
PM02	B1 Feed Bin to Bagging 2			
PM03	B1 Feed Bin to Bagging 3			
SC01	B1 Pack Screener 1			
SL01	B1 Pack Receiver 1			
SL02	B1 0-2 mm Bin for Bagging 1			
SL03	B1 2-8 mm Bin for Bagging 1			
SL04	B1 8-25 mm Bin for Bagging 1			
SL05	B1 Oversize Recycle Coke Chimney 1			
SL06	B1 Recycle Coke Bin 1			
CV04	B1 New Coke Transfer by Conveyor to Bins for Makeup 1			
LD01	B1 New Conductive/Insulating Pet Coke Transfer to Hopper 1			
LD02	B1 New Conductive/Insulating Pet Coke Transfer to Hopper 2			
SL07	B1 Make-up Coke Bin 1			
SL00	B1 Anode Graphite Receiver Bin for Canister Unloading 1			
SL08	B1 Calcined Coke Receiver Bin for Canister Unloading 1			
SL09	B1 Calcined Coke Receiver Bin for Canister Unloading 2			
SL10	B1 Calcined Coke Receiver Bin for Canister Unloading 3			
SL11	B1 Anode Graphite Receiver Bin for Canister Unloading 2			
SL12	B1 Coated Anode Graphite Receiver Bin for Canister Unloading			
PM04	B1 Fines Bagging Station 1			
SL13	B1 Pack Fines from Craine 1			
SL14	B1 DC Dust and Pack Fines Receiver Bin 1			
PM05	B1 Fines Bagging Station 2			
SL15	B1 Pack Fines from Crane 2			
SL16	B1 DC Dust and Pack Fines Receiver Bin 2			

DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
BE02	B1 Bucket Elevator 2	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC02	Baghouse
CL02	B1 Coke Cooler 2			
CS02	B1 Jaw Crusher 2			
CV06	B1 Vibrating Conveyor 2			
FE02	B1 Feeder from Bin 2			
PM06	B1 Feed Bin to Bagging 4			
PM07	B1 Feed Bin to Bagging 5			
PM08	B1 Feed Bin to Bagging 6			
SC02	B1 Pack Screener 2			
SL17	B1 Pack Receiver Bin 2			
SL18	B1 0-2 mm Bin for Bagging 2			
SL19	B1 2-8 mm Bin for Bagging 2			
SL20	B1 8-25 mm Bin for Bagging 2			
SL21	B1 Recycle Coke Chimney Bin			
SL22	B1 Recycle Coke Bin 2			
LD03	B1 New Coke Transfer to Bins 1			
LD04	B1 New Coke Transfer to Bins 2			
SL23	B1 Makeup Coke Bins			
514A	Silo 514A	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC03	Bin Vents/Baghouses
514B	Silo 514B		DC04	
514C	Silo 514C		DC05	
514D	Silo 514D		DC06	
514E	Silo 514E		DC07	
514F	Silo 514F		DC08	
514G	Silo 514G		DC09	
514H	Silo 514H		DC10	
514I	Silo 514I		DC11	
514J	Silo 514J		DC12	
517A	Silo 517A		DC13	
517B	Silo 517B		DC14	
517C	Silo 517C		DC15	
517D	Silo 517D		DC16	
517E	Silo 517E		DC17	
517F	Silo 517F		DC18	
517G	Silo 517G		DC19	
517H	Silo 517H		DC20	
590A	Silo 590A		DC21	
590B	Silo 590B		DC22	
590C	Silo 590C		DC23	
590D	Silo 590D		DC24	
591A	Silo 591A		DC25	
591B	Silo 591B		DC26	
591C	Silo 591C		DC27	
591D	Silo 591D		DC28	
591E	Silo 591E		DC29	
TR01	B1 Truck Unload Bucket Conveyor	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC30	Baghouse
RL01	B1 Rail Unload Bucket Conveyor			
RL02	B1 Rail Unload Bucket Elevator 1			
HO01	B1 Hopper to Lump Breaker			
CR01	B1 Lump Breaker			
BE03	B1 Bucket Elevator after Lump Breaker			
BC01	Belt Conveyor from BE120			
BC02	Belt Conveyor to BE2100			
HO02	Transfer Bin	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC31	Baghouse
RL03	Rail Unload Bucket Elevator 2			
HO03	Hopper to Silos A-G			
UL01	Rail and Truck Unloading Prior to Silos			
RL04	Rail Car Loading with Used Coke			

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
SR01 SR02	B1 Jet Mill Screen 1 B1 Jet Mill Screen 2	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC32	Baghouse
HO04	Hopper to Silo Distribution	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC33	Baghouse
CV07	Shuttle Conveyor to Silo	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC34	Baghouse
CV08	Bucket Conveyor from Silos 161-165	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC35	Baghouse
CV09	Bucket Elevator from BC180	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC36	Baghouse
CB01 BL01	Crucible Loading/Unloading for Calcining Blender Feed	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC37	Baghouse
TK01 KDC1 TB01	Transfer to Kilns Kiln Dust Collector Transfer to Blending	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC38	Baghouse
BE04 CL03 CS03 CV10 CV11 CV12 FE03 PM09 PM10 PM11 SC03 SL24 SL25 SL26 SL27 SL28 SL29 SL30 LD05 LD06 SL31 SL32 SL33 SL34 SL35 PM12 SL36 SL37 PM13 SL38 SL39	B2 Bucket Elevator 1 B2 Coke Cooler 1 B2 Jaw Crusher 1 B2 0-8 mm Chain Conveyor to Recycle Bin 1 B2 Vibrating Conveyor 1 B2 Chain Conveyor (oversize) 1 B2 Feeder from Bin 1 B2 Feed Bin to Bagging 1 B2 Feed Bin to Bagging 2 B2 Feed Bin to Bagging 3 B2 Pack Screener 1 B2 Pack Receiver Bin 1 B2 0-2 mm Bin for Bagging 1 B2 2-8 mm Bin for Bagging 1 B2 8-25 mm Bin for Bagging 1 B2 Oversize Recycle Chimney B2 Recycle Coke Bin 1 B2 New Coke Transfer by Conveyor to Bins for Makeup 1 B2 New Conductive/Insulation Pet Coke Transfer to Hopper 1 B2 New Pet Cok New Conductive/Insulation Pet Coke Transfer to Hopper 2 B2 Make-up Coke Bin 1 B2 Calcined Coke Receiver Bin for Canister Loading 1 B2 Anode Graphite Receiver Bin for Canister Unloading 1 B2 Calcined Coke Receiver Bin for Canister Loading 2 B2 Anode Graphite Receiver Bin for Canister Unloading 2 B2 Fines Bagging 1 B2 Fines Packing from Crane 1 B2 DC Dust and Pack Fines Receiver Bin 1 B2 Fines Bagging Station 2 B2 Pack Fines from Craine 2 B2 DC Dust and Pack Fines Receiver Bin 2	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC39	Baghouse

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Emission Units		Applicable Requirements/Standards	Air Pollution Control Devices	
ID No.	Description		ID No.	Description
BE05 CL03 CS04 CV13 FE04 PM14 PM15 PM16 SC04 SL40 SL41 SL42 SL43 SL44 SL45 LD07 LD08 SL46	B2 Bucket Elevator 2 B2 Coke Cooler 2 B2 Jaw Crusher 2 B2 Vibrating Conveyor 2 B2 Feeder from Bin 2 B2 Feed Bin to Bagging 4 B2 Feed Bin to Bagging 5 B2 Feed Bin to Bagging 6 B2 Pack Screener 2 B2 Pack Receiver 2 B2 0-2 mm Bin for Bagging 2 B2 2-8 mm Bin for Bagging 2 B2 8-25 mm Bin for Bagging 2 B2 Recycle Chimney Coke Bin B2 Recycle Coke Bin 2 B2 New Coke Transfer to Bins 1 B2 New Coke Transfer to Bins 2 B2 Make-up Coke Bin 2	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC40	Baghouse
590F 590G 590H 590I 591F 591G 591H 591I 591J	Silo 590F Silo 590G Silo 590H Silo 590I Silo 591F Silo 591G Silo 591H Silo 591I Silo 591J	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC41 DC42 DC43 DC44 DC45 DC46 DC47 DC48 DC49	Bin Vents/Baghouses
SR03 SR04	B2 Jet Mill Screen 1 B2 Jet Mill Screen 2	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC50	Baghouse
CV14	Shuttle Conveyor to Silo	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC51	Baghouse
CV15	Bucket Conveyor from Silos 166-170	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC52	Baghouse
BE06	Bucket Elevator from BC181	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC53	Baghouse
CB02 BL02	B2 Crucible Load/Unload for Calcining B2 Blender Feed	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC54	Baghouse
FLS1	Fresh Lime Silo #1	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC55	Bin Vent
FLS2	Fresh Lime Silo #2	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC56	Bin Vent
SLS1	Spent Line Silo #1	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC57	Bin Vent
SLS2	Spent Lime Silo #2	40 CFR 52.21 391-3-1-.02(2)(b) 391-3-1-.02(2)(e)	DC58	Bin Vent

* Generally applicable requirements contained in this permit may also apply to emission units listed above. The lists of applicable requirements/standards are intended as a compliance tool and may not be definitive.

B1 = Graphitization Building 1

B2 = Graphitization Building 2

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

3.2 Equipment Emission Caps and Operating Limits

- 3.2.1 The Permittee shall operate all associated air pollution control equipment during all times of associated process equipment operation as shown below.
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, PM_{2.5}, CO, SO₂, and VOC BACT]

APCE	Emission Units Controlled
Thermal Oxidizer TO01	CK01 and CK02 Calcining Kilns
Thermal Oxidizer TO02	CK03 and CK04 Calcining Kilns
Thermal Oxidizer TO03	CK05 and CK06 Calcining Kilns
Thermal Oxidizer TO04	CAK1 and CAK2 Carbonizing Kilns
Scrubber System SCR1	GR01 Graphitization Furnace Building 1
Scrubber System SCR2	GR02 Graphitization Furnace Building 2

Particulate Matter (filterable PM/PM₁₀/PM_{2.5}) Emissions

- 3.2.2 The Permittee shall not discharge or cause to be discharged into the atmosphere from the emission units listed in Table 3.2 any gases that contain total suspended particulates (filterable particulate matter) in excess of 0.005 gr/dscf.

For the purposes of this Condition and throughout this Permit, the emissions limitations are associated with total suspended particulates (filterable TSP). PM₁₀ is calculated at 100% of the total suspended particulate matter limit. PM_{2.5} is calculated at 20% of the total suspended particulate matter limit. Any condensable particulate matter emissions have been calculated with the PM₁₀ and PM_{2.5} emission estimates.

The listed emission units shall not be operated unless equipped with fabric filters or baghouses as specified in the table below:
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, and PM_{2.5} BACT]

Permit No.: 3624-087-0061-P-01-0

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**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Unit ID	Unit Description	Filter/Baghouse/ Vent Filter Name	Maximum Exhaust Grain Loading (filterable TSP, PM ₁₀ , and PM _{2.5})
SL20 SL21 SL22 LD03 LD04 SL23	B1 8-25 mm Bin for Bagging 2 B1 Recycle Coke Chimney Bin B1 Recycle Coke Bin 2 B1 New Coke Transfer to Bins 1 B1 New Coke Transfer to Bins 2 B1 Makeup Coke Bins		
514A	Silo 514A	DC03	0.005 gr/dscf
514B	Silo 514B	DC04	0.005 gr/dscf
514C	Silo 514C	DC05	0.005 gr/dscf
514D	Silo 514D	DC06	0.005 gr/dscf
514E	Silo 514E	DC07	0.005 gr/dscf
514F	Silo 514F	DC08	0.005 gr/dscf
514G	Silo 514G	DC09	0.005 gr/dscf
514H	Silo 514H	DC10	0.005 gr/dscf
514I	Silo 514I	DC11	0.005 gr/dscf
514J	Silo 514J	DC12	0.005 gr/dscf
517A	Silo 517A	DC13	0.005 gr/dscf
517B	Silo 517B	DC14	0.005 gr/dscf
517C	Silo 517C	DC15	0.005 gr/dscf
517D	Silo 517D	DC16	0.005 gr/dscf
517E	Silo 517E	DC17	0.005 gr/dscf
517F	Silo 517F	DC18	0.005 gr/dscf
517G	Silo 517G	DC19	0.005 gr/dscf
517H	Silo 517H	DC20	0.005 gr/dscf
590A	Silo 590A	DC21	0.005 gr/dscf
590B	Silo 590B	DC22	0.005 gr/dscf
590C	Silo 590C	DC23	0.005 gr/dscf
590D	Silo 590D	DC24	0.005 gr/dscf
591A	Silo 591A	DC25	0.005 gr/dscf
591B	Silo 591B	DC26	0.005 gr/dscf
591C	Silo 591C	DC27	0.005 gr/dscf
591D	Silo 591D	DC28	0.005 gr/dscf
591E	Silo 591E	DC29	0.005 gr/dscf
TR01 RL01 RL02 HO01 CR01 BE03 BC01 BC02	B1 Truck Unload Bucket Conveyor B1 Rail Unload Bucket Conveyor B1 Rail Unload Bucket Elevator 1 B1 Hopper to Lump Breaker B1 Lump Breaker B1 Bucket Elevator after Lump Breaker Belt Conveyor from BE120 Belt Conveyor to BE2100	DC30	0.005 gr/dscf
HO02 RL03	Transfer Bin Rail Unload Bucket Elevator 2	DC31	0.005 gr/dscf

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Unit ID	Unit Description	Filter/Baghouse/ Vent Filter Name	Maximum Exhaust Grain Loading (filterable TSP, PM ₁₀ , and PM _{2.5})
HO03 UL01 RL04	Hopper to Silos A-G Rail and Truck Unloading Prior to Silos Rail Car Loading with Used Coke		
SR01 SR02	B1 Jet Mill Screen 1 B1 Jet Mill Screen 2	DC32	0.005 gr/dscf
HO04	Hopper to Silo Distribution	DC33	0.005 gr/dscf
CV07	Shuttle Conveyor to Silo	DC34	0.005 gr/dscf
CV08	Bucket Conveyor from Silos 161-165	DC35	0.005 gr/dscf
CV09	Bucket Elevator from BC180	DC36	0.005 gr/dscf
CB01 BL01	Crucible Loading/Unloading for Calcining Blender Feed	DC37	0.005 gr/dscf
TK01 KDC1 TB01	Transfer to Kilns Kiln Dust Collector Transfer to Blending	DC38	0.005 gr/dscf
BE04 CL03 CS03 CV10 CV11 CV12 FE03 PM09 PM10 PM11 SC03 SL24 SL25 SL26 SL27 SL28 SL29 SL30 LD05 LD06 SL31 SL32 SL33 SL34 SL35 PM12 SL36 SL37 PM13 SL38 SL39	B2 Bucket Elevator 1 B2 Coke Cooler 1 B2 Jaw Crusher 1 B2 0-8 mm Chain Conveyor to Recycle Bin 1 B2 Vibrating Conveyor 1 B2 Chain Conveyor (oversize) 1 B2 Feeder from Bin 1 B2 Feed Bin to Bagging 1 B2 Feed Bin to Bagging 2 B2 Feed Bin to Bagging 3 B2 Pack Screener 1 B2 Pack Receiver Bin 1 B2 0-2 mm Bin for Bagging 1 B2 2-8 mm Bin for Bagging 1 B2 8-25 mm Bin for Bagging 1 B2 Oversize Recycle Chimney B2 Recycle Coke Bin 1 B2 New Coke Transfer by Conveyor to Bins for Makeup 1 B2 New Conductive/Insulation Pet Coke Transfer to Hopper 1 B2 New Pet Cok New Conductive/Insulation Pet Coke Transfer to Hopper 2 B2 Make-up Coke Bin 1 B2 Calcined Coke Receiver Bin for Canister Loading 1 B2 Anode Graphite Receiver Bin for Canister Unloading 1 B2 Calcined Coke Receiver Bin for Canister Loading 2 B2 Anode Graphite Receiver Bin for Canister Unloading 2 B2 Fines Bagging 1 B2 Fines Packing from Crane 1 B2 DC Dust and Pack Fines Receiver Bin 1 B2 Fines Bagging Station 2 B2 Pack Fines from Craine 2 B2 DC Dust and Pack Fines Receiver Bin 2	DC39	0.005 gr/dscf

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Unit ID	Unit Description	Filter/Baghouse/ Vent Filter Name	Maximum Exhaust Grain Loading (filterable TSP, PM ₁₀ , and PM _{2.5})
BE05 CL03 CS04 CV13 FE04 PM14 PM15 PM16 SC04 SL40 SL41 SL42 SL43 SL44 SL45 LD07 LD08 SL46	B2 Bucket Elevator 2 B2 Coke Cooler 2 B2 Jaw Crusher 2 B2 Vibrating Conveyor 2 B2 Feeder from Bin 2 B2 Feed Bin to Bagging 4 B2 Feed Bin to Bagging 5 B2 Feed Bin to Bagging 6 B2 Pack Screener 2 B2 Pack Receiver 2 B2 0-2 mm Bin for Bagging 2 B2 2-8 mm Bin for Bagging 2 B2 8-25 mm Bin for Bagging 2 B2 Recycle Chimney Coke Bin B2 Recycle Coke Bin 2 B2 New Coke Transfer to Bins 1 B2 New Coke Transfer to Bins 2 B2 Make-up Coke Bin 2	DC40	0.005 gr/dscf
590F	Silo 590F	DC41	0.005 gr/dscf
590G	Silo 590G	DC42	0.005 gr/dscf
590H	Silo 590H	DC43	0.005 gr/dscf
590I	Silo 590I	DC44	0.005 gr/dscf
591F	Silo 591F	DC45	0.005 gr/dscf
591G	Silo 591G	DC46	0.005 gr/dscf
591H	Silo 591H	DC47	0.005 gr/dscf
591I	Silo 591I	DC48	0.005 gr/dscf
591J	Silo 591J	DC49	0.005 gr/dscf
SR03 SR04	B2 Jet Mill Screen 1 B2 Jet Mill Screen 2	DC50	0.005 gr/dscf
CV14	Shuttle Conveyor to Silo	DC51	0.005 gr/dscf
CV15	Bucket Conveyor from Silos 166-170	DC52	0.005 gr/dscf
BE06	Bucket Elevator from BC181	DC53	0.005 gr/dscf
CB02 BL02	B2 Crucible Load/Unload B2 Blender Feed	DC54	0.005 gr/dscf
FLS1	Fresh Lime Silo #1	DC55	0.005 gr/dscf
FLS2	Fresh Lime Silo #2	DC56	0.005 gr/dscf
SLS1	Spent Lime Silo #1	DC57	0.005 gr/dscf
SLS2	Spent Lime Silo #2	DC58	0.005 gr/dscf

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- 3.2.3 The Permittee shall conduct the following in order to reduce fugitive particulate matter emissions from Truck/Railcar Unloading (Fugitive Source ID Codes FUG1 and FUG2):
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, and PM_{2.5} BACT Work Practices]
- a. Operate the railcar unloading in an open-ended structure with a fog dust suppression system and air knives to prevent fugitive emissions during periods of active unloading, with unloading emissions collected and vented to Baghouse DC31;
 - b. Operate the truck unloading in a partial enclosure, with plastic curtains across the opening during periods of active unloading; and,
 - c. Good housekeeping practices that include minimizing road dust, maintaining speed limits, and cleaning up spills.
- 3.2.4 The Permittee shall conduct the following in order to reduce fugitive particulate matter emissions from Green Pet Coke Storage Pile and Spent Lime Truck Loadout (Fugitive Source ID Codes STOR, GATH, DRP1, DRP2, and SLLF):
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, and PM_{2.5} BACT Work Practices]
- a. Water spray as needed; and
 - b. Good housekeeping practices that include sweeping up the pile pad and cleaning up spills.
- 3.2.5 The Permittee shall conduct the following in order to reduce filterable particulate matter emissions from Material Delivery, Handling, Storage, and Transport Operations (Source ID Codes associated with Baghouse Source ID Codes DC01, DC02, DC30, DC31, DC33 through DC40, and DC51 through DC54):
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, and PM_{2.5} BACT Work Practices]
- a. Operate with wind screens and/or partial enclosures where appropriate;
 - b. Operate covered conveyors and enclosed transfer points;
 - c. Local collection hoods;
 - d. Good housekeeping practices that include minimizing road dust, maintaining speed limits, and cleaning up spills; and
 - e. Operate fabric filters/baghouses as outlined in Table 3.2.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- 3.2.6 The Permittee shall conduct the following in order to reduce filterable particulate matter emissions from Storage Silos (Source ID Codes associated with Baghouse Source ID Codes DC03 through DC29, DC41 through DC49, and DC55 through DC58):
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, and PM_{2.5} BACT Work Practices]
- a. Operate covered conveyors and enclosed transfer points;
 - b. Good housekeeping practices that include sweeping and cleaning up spills; and
 - c. Operate fabric filters/bin vents as outlined in Table 3.2.
- 3.2.7 The Permittee shall maintain all roads to minimize fugitive particulate matter and comply with Georgia Rule 391-3-1-.02(2)(n) as BACT for the roads.
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, and PM_{2.5} BACT Work Practices]
- 3.2.8 The Permittee shall design the Cooling Towers (Source ID Codes BB01, BB02, BB1G, BB1G, BB1C, and BBGA2) to have a drift rate of no greater than 0.005%.
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, and PM_{2.5} BACT]

Graphitization Furnace Buildings (Source ID Codes GR01 and GR02)

- 3.2.9 The Permittee shall not discharge or cause to be discharged into the atmosphere from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02) any gases that contain total suspended particulate matter (filterable particulate matter) in excess of 0.005 gr/dscf.
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, and PM_{2.5} BACT]
- 3.2.10 The Permittee shall not discharge or cause to be discharged into the atmosphere from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined, any gases that contain carbon monoxide (CO) emissions in excess of 2,910.1 tons during any consecutive twelve-month period.
[40 CFR 52.21(j)(2) – CO BACT]
- 3.2.11 The Permittee shall not discharge or cause to be discharged into the atmosphere from both Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined, any gases that contain sulfur dioxide (SO₂) emissions in excess of the following:
[40 CFR 52.21(j)(2) – SO₂ BACT]
- a. 136.09 tons during any consecutive twelve-month period.
 - b. 75.96 lb/hr based on the hourly average of a rolling 3-hour period, as determined by the Continuous Emissions Monitoring System (CEMS).
 - c. If either Continuous Monitoring System (CEMS) is down for more than 1 hour, the Permittee shall record the SO₂ emissions as 75.96 lb/hr (the peak amount emitted during the synthetic graphite product production cycle) until the CEMS is repaired and returned to service.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- 3.2.12 The Permittee shall ensure that the sulfur content in the received green petroleum coke does not exceed 0.6% by weight, on a monthly average.
[40 CFR 52.21(j)(2) – SO₂ BACT]
- 3.2.13 The Permittee shall not apply power to the next graphitization furnace building less than 20 hours after the start of a synthetic graphite product production cycle in the current graphitization furnace building. At no time shall Hours 26 through Hours 44 of each synthetic graphite product production cycle overlap, where a cycle is the 56-hour period from applying power to a furnace until the synthetic graphite product production cycle is complete.
[40 CFR 52.21(j)(2) – SO₂ BACT]
- 3.2.14 The Permittee shall not discharge or cause to be discharged into the atmosphere from both Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined, any gases that contain nitrogen oxides (NO_x) emissions in excess of 15.43 tons during any consecutive twelve-month period.
[40 CFR 52.21(j)(2) – NO_x BACT]

Calcining and Carboning Kilns

- 3.2.15 The Permittee shall utilize good combustion practices and good operation and maintenance practices to minimize total suspended particulate matter, carbon monoxide, nitrogen oxide, sulfur dioxide, and volatile organic compound emissions from the Calcining and Carbonizing Kilns Thermal Oxidizer Burners (Source ID Codes TO01 through TO04).
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, PM_{2.5}, CO, NO_x, SO₂, and VOC BACT Work Practices]
- 3.2.16 The Permittee shall burn only natural gas in the Calcining and Carbonizing Kilns Thermal Oxidizer Burners (Source ID Codes TO01, TO02, TO03, and TO04).
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, PM_{2.5}, CO, NO_x, SO₂, and VOC BACT and 391-3-1-.03(2)(c); 391-3-1-.02(2)(g) Subsumed]
- 3.2.17 The Permittee shall not discharge or cause to be discharged into the atmosphere from all Calcining Kilns Thermal Oxidizers (Source ID Codes TO01, TO02, and TO03), combined, any gases that contain in excess of the following:
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, PM_{2.5}, CO, NO_x, SO₂, and VOC BACT]
- a. 0.03 lb/hr of total suspended particulate matter (Filterable TSP) emissions.
 - b. 9.71 tons of carbon monoxide (CO) emissions during any consecutive twelve-month period.
 - c. 16.45 lb/hr of sulfur dioxide (SO₂) emissions.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- d. 11.56 tons of nitrogen oxides (NO_x) emissions during any consecutive twelve-month period.
 - e. 51.49 tons of volatile organic compound (VOC) emissions during any consecutive twelve-month period.
- 3.2.18 The Permittee shall not discharge or cause to be discharged into the atmosphere from the Carbonizing Kilns Thermal Oxidizer burner (Source ID Code TO04) any gases that contain in excess of the following:
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, PM_{2.5}, CO, NO_x, and VOC BACT]
- a. 0.01 lb/hr of total suspended particulate matter (filterable TSP) emissions.
 - b. 0.82 tons of carbon monoxide (CO) emissions during any consecutive twelve-month period.
 - c. 0.93 tons of nitrogen oxides (NO_x) emissions during any consecutive twelve-month period.
 - d. 3.45 tons of volatile organic compound (VOC) emissions during any consecutive twelve-month period.

Emergency Generators and Fire Pumps

- 3.2.19 The Permittee shall utilize good combustion practices and good operation and maintenance practices to minimize filterable total suspended particulate matter, carbon monoxide, nitrogen oxide, sulfur dioxide, and volatile organic compound emissions from the Emergency Generators and Fire Pumps (Source ID Codes EG01, EG02, FP01, and FP02).
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, PM_{2.5}, CO, NO_x, SO₂, and VOC BACT Work Practices]
- 3.2.20 The Permittee shall only burn ultra-low sulfur diesel (0.0015% sulfur) in the Emergency Generators and Fire Pumps (Source ID Codes EG01, EG02, FP01, and FP02).
[40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, PM_{2.5}, CO, NO_x, SO₂, and VOC BACT and 391-3-1-.03(2)(c); 391-3-1-.02(2)(g) Subsumed]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

3.3 Equipment Federal Rule Standards

- 3.3.1 For Emergency Generators EG01 and EG02, Fire Pumps FP01 and FP02, or any diesel-fired internal combustion engine(s) manufactured after April 1, 2006 or modified/reconstructed after July 11, 2005, the Permittee shall comply with all applicable provisions of New Source Performance Standards (NSPS) as found in 40 CFR 60 Subpart A - "*General Provisions*," 40 CFR 60 Subpart IIII - "*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*," 40 CFR 63 Subpart A - "*General Provisions*" and 40 CFR 63 Subpart ZZZZ - "*National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Ignition Internal Combustion Engines*." Such requirements include but are not limited to:
[40 CFR 60.4200, 40 CFR 63.6590(c), and 40 CFR 52.21(j)(2) – Filterable TSP, PM₁₀, PM_{2.5}, CO, NO_x, SO₂, and VOC BACT]
- a. Purchase an engine certified to the emissions standards in 40 CFR 60.4205(c). The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted by 40 CFR 60.4211(g).
[40 CFR 60.4211(c)]
 - b. Equip all emergency generator engines with non-resettable hour meters in accordance with 40 CFR 60 Subpart IIII.
[40 CFR 60.4209(a)]
 - c. Purchase only diesel fuel with a maximum sulfur content of 15 ppm unless otherwise specified by the Division in accordance with 40 CFR 60 Subpart IIII.
[40 CFR 60.4207(b) and CFR 1090.305(b)]
 - d. Conduct engine maintenance prescribed by the engine manufacturer in accordance with 40 CFR 60 Subpart IIII.
 - e. Limit non-emergency operation of each emergency generator to 100 hours per year in accordance with 40 CFR 60 Subpart IIII.
[40 CFR 60.4211(f)(2)(i)]
 - f. Maintain any records in accordance with 40 CFR 60 Subpart IIII.
[40 CFR 60.4214]
 - g. Maintain a list of engines subject to 40 CFR 60 Subpart IIII, including the date of manufacture.
[391-3-1-.02(6)(b)]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

3.4 Equipment SIP Rule Standards

3.4.1 The Permittee shall not discharge, or cause the discharge, into the atmosphere, from any source listed in Table 3.1 as subject to Rule (b), any gases which exhibit visible emissions, the opacity of which is equal to or greater than 40 percent, unless otherwise specified.
[391-3-1-.02(2)(b)1.]

3.4.2 The Permittee shall not cause, let, suffer, permit, or allow the emission from any source listed in Table 3.1 as subject to Rule (e), particulate matter (PM) in total quantities equal to or exceeding the allowable rate as calculated using the applicable equation below, unless otherwise specified in this Permit.
[391-3-1-.02(2)(e)1.]

a. $E = 4.1P^{0.67}$, for process input weight rate up to and including 30 tons per hour;

b. $E = 55P^{0.11} - 40$, for process input weight rate in excess of 30 tons per hour.

Where:

E = allowable emission rate in pounds per hour;

P = process input weight rate in tons per hour.

3.4.3 The Permittee shall take all reasonable precautions to prevent dust from becoming airborne including, but not limited to, the application of water or other suitable chemicals to control fugitive dust from roads.
[391-3-1-.02(2)(n)]

3.5 Equipment Standards Not Covered by a Federal or SIP Rule and Not Instituted as an Emission Cap or Operating Limit

3.5.1 The Permittee shall maintain an inventory of filter bags such that an adequate supply of bags is on hand to replace any defective bags in each baghouse.
[391-3-1-.03(2)(c)]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

PART 4.0 REQUIREMENTS FOR TESTING

4.1 General Testing Requirements

- 4.1.1 The Permittee shall cause to be conducted a performance test at any specified emission unit when so directed by the Environmental Protection Division (“Division”). The test results shall be submitted to the Division within 60 days of the completion of the testing. Any tests shall be performed and conducted using methods and procedures that have been previously specified or approved by the Division.
[391-3-1-.02(6)(b)1(i)]
- 4.1.2 The Permittee shall provide the Division thirty (30) days (or sixty (60) days for tests required by 40 CFR Part 63) prior written notice of the date of any performance test(s) to afford the Division the opportunity to witness and/or audit the test, and shall provide with the notification a test plan in accordance with Division guidelines.
[391-3-1-.02(3)(a) and 40 CFR 63.7(b)(1)]
- 4.1.3 Performance and compliance tests shall be conducted and data reduced in accordance with applicable procedures and methods specified in the Division’s Procedures for Testing and Monitoring Sources of Air Pollutants. The methods for the determination of compliance with emission limits listed under Sections 3.2, 3.3, 3.4 and 3.5 are as follows:
- a. Method 1 or 1A shall be used for the determination of sample port locations and the number of traverse points.
 - b. Method 2, 2A, 2C, 2D, 2F, or 2G shall be used for the determination of velocity and volumetric flowrate of the stack gas.
 - c. Method 3 or 3A shall be used for the determination of stack gas molecular weight.
 - d. Method 3A or 3B shall be used for the determination of oxygen and carbon dioxide concentrations of the stack gas.
 - e. Method 4 shall be used for the determination of stack gas moisture.
 - f. Method 5 or Method 17, as applicable, shall be used for the determination of filterable PM concentration.
 - g. Method 201A in conjunction with Method 202 shall be used for the determination of PM₁₀ and PM_{2.5} concentrations. As an alternative, Method 5 in conjunction with Method 202 can be used.
 - h. Method 6 or 6C shall be used for the determination of SO₂ concentrations.
 - i. Method 7 or 7E shall be used for the determination of NO_x concentrations.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- j. Method 9 and the Procedures of Section 1.3 shall be used for the determination of the opacity of visual emissions.
- k. Method 10, 10A, or 10B shall be used for determination of CO concentrations (using ASTM D6522-00 when natural gas is the fuel).
- l. Method 19 shall be used for the determination of SO₂ removal efficiency and SO₂, PM, CO, and NO_x emission rates. When applicable, Method 19 shall be used to convert concentrations (i.e., grains/dscf for PM and ppm for gaseous pollutants), as determined using other methods specified in this section, to emission rates (i.e., lb/MMBtu).
- m. Method 22 for the visual determination of fugitive emissions.
- n. Method 25 shall be used to determine the concentration of VOC, as carbon. Method 25A may be used for this purpose at the discretion of the Director. Appropriate conversion factors must be used to convert the VOC (as carbon) to actual VOC.

Minor changes in methodology may be specified or approved by the Director or his designee when necessitated by process variables, changes in facility design, or improvement or corrections that, in his opinion, render those methods or procedures, or portions thereof, more reliable.

[391-3-1-.02(3)(a)]

- 4.1.4 The Permittee shall submit performance test results to the US EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI) in accordance with any applicable NSPS or NESHAP standards (40 CFR 60 or 40 CFR 63) that contain Electronic Data Reporting Requirements. This Condition is only applicable if required by an applicable standard and for the pollutant(s) subject to said standard.
[391-3-1-.02(8)(a) and 391-3-1-.02(9)(a)]

- 4.1.5 All monitoring systems and/or monitoring devices required by the Division shall be installed, calibrated and operational prior to conducting any performance test(s). For any performance test, the Permittee shall, using the monitoring systems and/or monitoring devices, acquire data during each performance test run. All monitoring system and/or monitoring device data acquired during the performance testing shall be submitted with the performance test results.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

4.2 Specific Testing Requirements

4.2.1 Within 60 days after achieving the maximum production rate at which Graphitization Furnace Buildings (Source ID Codes GR01 and GR02) will be operated, but not later than 180 days after initial startup of the furnaces, the Permittee shall conduct a performance test for the following pollutants in order to demonstrate compliance with the applicable emission limits listed in Section 3.0 of this Permit. The Permittee shall also establish any operating parameter that is identified.

- a. Filterable Total Suspended Particulate Matter (filterable TSP) and Sulfur Dioxide (SO₂) emissions. Testing will be conducted simultaneously for filterable TSP and SO₂ emissions on Graphitization Furnace Circulating Fluidized Bed Scrubber Systems ID Codes SCR1 and SCR2 to establish parameter values/ranges for the following parameters that assures compliance with both the emission limits contained in Condition 3.2.9 and Condition 3.2.11.a:
 - i. Fluid bed pressure drop,
 - ii. Fresh lime feed rate, and
 - iii. Evidence of proper lime recirculation rate. The facility may define what this can entail, which may include pressure drop alarms and any resulting corrective actions.

The test must cover a three-hour period with the highest expected SO₂ emissions from the furnace building; Application No. 28941 indicates this occurs during Hours 38 through 42. Subsequent testing for both pollutants shall be repeated as outlined in Condition 4.2.5 with dry scrubber parameter values reestablished as necessary.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1]

- b. Carbon Monoxide (CO) emissions. Initial testing to establish site-specific emission factor or verify the emission factor of 0.066 tons CO per ton synthetic graphite product produced as stated in Application No. 28941. Subsequent testing shall be repeated as outlined in Condition 4.2.5 to continue verification of this emission factor or reestablish a site-specific factor.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1]
- c. Nitrogen Oxides (NO_x) emissions. Testing to establish site-specific emission factor or verify the emission factor of 0.00035 tons NO_x per ton synthetic graphite product produced as stated in Application No. 28941.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- 4.2.2 Within 60 days after achieving the maximum production rate at which the Calcining Kilns Thermal Oxidizers (Source ID Codes TO01, TO02, and TO03) will be operated, but not later than 180 days after initial startup of the kilns and thermal oxidizers, the Permittee shall conduct a performance test for the following pollutants in order to demonstrate compliance with the emission limits contained in Condition 3.2.17. The Permittee shall also establish any operating parameter that is identified.
- a. Volatile Organic Compounds (VOC), Nitrogen Oxides (NO_x), and Carbon Monoxide (CO) emissions. Initial testing will be conducted simultaneously to establish minimum combustion temperature or range that demonstrates compliance with the VOC, NO_x, and CO emission limits contained in Condition 3.2.17. Subsequent testing shall be repeated as outlined in Condition 4.2.5 with parameter values reestablished as necessary.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1]
 - b. Sulfur Dioxide (SO₂) emissions. Initial testing to verify compliance with emissions limit contained in Condition 3.2.17.c. Subsequent testing shall be repeated as outlined in Condition 4.2.5 to continue verification of this limit.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1]
- 4.2.3 Within 60 days after achieving the maximum production rate at which facility will be operated, but not later than 180 days after initial startup, the Permittee shall conduct filterable total suspended particulate matter emissions (filterable TSP) tests on the stacks that emit particulate matter emissions from Jet Mill Baghouses (Source ID Codes DC32 and DC50) in order to verify the TSP control performance of each dust collector and also establish a minimum pressure drop across each unit that assures compliance with the emission rate as declared in Application No. 28941 of 0.005 gr/dscf. Subsequent TSP tests shall be conducted as outlined in Condition 4.2.5 with parameter values reestablished as necessary.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1]
- 4.2.4 Within 60 days after achieving the maximum production rate at which facility will be operated, but not later than 180 days after initial startup, the Permittee shall conduct filterable total suspended particulate matter emissions (filterable TSP) tests on the stacks that emit particulate matter emissions from stacks that vent to Baghouses Source ID Codes DC01, DC02, DC30, DC31, DC37 through DC40, and DC54 in order to verify the filterable TSP control performance of each dust collector and also establish a minimum pressure drop across each unit that assures compliance with the emission rate as declared in Application No. 28941 of 0.005 gr/dscf. The initial test shall be on stacks that vent from Baghouse ID Codes DC01, DC30, DC37, and DC54. Subsequent filterable TSP tests shall be conducted as outlined in Condition 4.2.5 on any three representative units of varying capacity of the nine baghouses listed.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- 4.2.5 The Permittee shall conduct performance tests as specified by the following table and criteria unless otherwise specified by the Division:
[391-3-1-.02(6)(b).1]

Equipment (Source Code(s))	Pollutant – Testing Frequency
Graphitization Furnace Buildings (Source ID Codes GR01 and GR02)	TSP – once every 12 months SO ₂ – once every 12 months CO – once every 60 months
Calcining Kilns Thermal Oxidizers (Source ID Codes TO01, TO02, and TO03)	VOC – once every 60 months NO _x – once every 60 months CO – once every 60 months SO ₂ – once every 60 months
Jet Mill Baghouses (Source ID Codes DC32 and DC50)	TSP – once every 24 months
Baghouses Source ID Codes DC01, DC02, DC30, DC31, DC37 through DC40, and DC54	TSP – once every 24 months

- a. Where the results of a performance test which is required annually are less than or equal to 50% of the allowable limit, the Permittee may skip the next scheduled performance test.
- b. Data from these tests shall be used to establish the operational parameters as specified in Condition 6.1.4. Data from a previously approved performance test which demonstrated compliance with the applicable emission limit may be used to establish the operational parameters in lieu of the most recent performance tests as long as that previous performance test is representative of current operations of the emission unit and was conducted during the five years prior to the most recent performance test or the life of this permit, whichever is shorter.
- c. As required by Condition 6.1.4, the Permittee shall submit a list of all the current operational parameters established in accordance with Condition 4.2.5 for the purpose of reporting under Condition 6.1.4 with the semiannual report required by Condition 6.1.3. This list shall include all operation parameters required to be monitored and the current operating range for each operational parameter.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

PART 5.0 REQUIREMENTS FOR MONITORING (Related to Data Collection)

5.1 General Monitoring Requirements

- 5.1.1 Any continuous monitoring system required by the Division and installed by the Permittee shall be in continuous operation and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Monitoring system response, relating only to calibration checks and zero and span adjustments, shall be measured and recorded during such periods. Maintenance or repair shall be conducted in the most expedient manner to minimize the period during which the system is out of service.
[391-3-1-.02(6)(b)1]

5.2 Specific Monitoring Requirements

- 5.2.1 The Permittee shall install, calibrate, maintain, and operate a system to continuously monitor and record the indicated pollutants on the following equipment. Each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.
[391-3-1-.02(6)(b)1]
- a. Sulfur dioxide (SO₂) and Oxygen (O₂) from the Graphitization Furnace Circulating Fluidized Bed Scrubber Systems (Source ID Codes SCR1 and SCR2).
[40 CFR 52.21 BACT]
- 5.2.2 The Permittee shall install, calibrate, maintain, and operate a system to continuously monitor and record the indicated parameters on the following equipment. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.
[391-3-1-.02(6)(b)1]
- a. Combustion temperature for the Calcining and Carbonizing Kiln Thermal Oxidizers (Source ID Codes TO01, TO02, TO03, and TO04). Data shall be monitored and recorded continuously. The monitoring system shall be located at a position prior to any substantial heat loss/exchange. The average combustion temperature shall be calculated using all data points collected but no less than four data points equally spaced over each hour. The temperature monitoring device shall have an accuracy of $\pm 2\%$ (°F). Calibration checks of temperature monitoring equipment shall be performed annually.
[40 CFR 52.21 BACT]
- b. The fresh lime feed rate of the Graphitization Furnace Circulating Fluidized Bed Scrubber Systems (Source ID Codes SCR1 and SCR2) at least once every successive 15-minute period. The monitoring device used for continuous measurement of the lime feed rate monitoring device must be certified by the manufacturer to be accurate within ± 5 percent of the design feed rate.
[40 CFR 52.21 BACT]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- c. Fluidized bed pressure drop across the Graphitization Furnace Circulating Fluidized Bed Scrubber Systems (Source ID Codes SCR1 and SCR2) at least once every successive 15-minute period. The monitoring device used for the continuous measurement of the pressure drop of the gas stream across the scrubber must be certified by the manufacturer to be accurate to within a gage pressure of ± 500 pascals (± 2 inches of water gage pressure).
[40 CFR 52.21 BACT]
 - d. A continuous non-resettable device to monitor and record the total hours operated for the Emergency Generators and Fire Pumps (Source ID Codes EG01, EG02, FP01, and FP02), to include the hours operated for both emergency and non-emergency (maintenance and/or testing) services.
[40 CFR 60.4209(a)]
- 5.2.3 The Permittee shall install, calibrate, maintain, and operate monitoring devices for the measurement of the indicated parameters on the following equipment. Data shall be recorded at the frequency specified below. Where such performance specification(s) exist, each system shall meet the applicable performance specification(s) of the Division's monitoring requirements.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1]
- a. Pressure drop across baghouses Source ID Codes DC01, DC02, DC30, DC31, DC32, DC37 through DC40, DC50, and DC54. Data shall be recorded once per 24-hour operational period.
 - b. Evidence of proper lime recirculation rate in the Graphitization Furnace Circulating Fluidized Bed Scrubber Systems (Source ID Codes SCR1 and SCR2), including recording any pressure drop alarms and noting any resulting corrective actions. Data shall be recorded once per 24-hour shift.
[40 CFR 52.21 BACT]
- 5.2.4 The Permittee shall monitor and record the following items on a frequency as specified.
[40 CFR 52.21 BACT and 4391-3-1-.02(6)(b)1]
- a. Amount of synthetic graphite product produced in metric tons. Data shall be recorded monthly.
 - b. Number of synthetic graphite product production cycles in both Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined. Records shall indicate the start date and time and shall show that Hour 26 through Hour 44 of each cycle do not overlap with both furnace buildings. Data shall be recorded monthly.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- c. Hours of operation of Emergency Generators EG01 and EG02 and Fire Pumps FP01 and FP02 (Source ID Codes EG01, EG02, FP1, and FP1), specifying both emergency use and non-emergency use. Data shall be recorded monthly.
- d. Sulfur content of delivered green petroleum coke. The Permittee may use supplier certifications or utilize in-house sampling, with the average content calculated over the calendar month. Data shall be recorded monthly.

5.2.5 The Permittee shall perform checks of visible emissions from stacks which vent the flue gas from Baghouse Source ID Codes DC01, DC02, DC30 through DC40, and DC50 through DC54; Calcining Kilns CK01 through CK06, Carbonizing Kilns CAK1 and CAK2, and Graphitization Furnaces GR01 and GR02. Checks shall be carried out for each week of operation. The Permittee shall retain a record in a weekly visible emissions (VE) log suitable for inspection or submittal. The check shall be conducted at least once for each week or portion of each week of operation using procedures a. through c. below except when scheduling, atmospheric conditions or sun positioning prevent any opportunity to perform the weekly VE check. Any operational day when scheduling, atmospheric conditions, or sun position prevent a daily reading shall be reported as monitor downtime in the report required by Condition 6.1.4. Scheduling prevents a VE check only when an emission unit is not operating during a regularly scheduled time period established for the weekly VE checks. [391-3-1-.02(6)(b)1.]

- a. Determine, in accordance with the procedures specified in paragraph c. of this condition, if visible emissions are present at the discharge point to the atmosphere from each of the sources and record the results in the weekly visible emissions (VE) log. For sources that exhibit visible emissions, the Permittee shall comply with Condition 5.2.5.b.
- b. For each source that requires action in accordance with paragraph a. of this condition, the Permittee shall determine the cause of the visible emissions and correct the problem in the most expedient manner possible. The Permittee shall note the cause of the visible emissions, the pressure drop, any other pertinent operating parameters, and the corrective action taken in the maintenance log.
- c. The person performing the determination shall stand at a distance of at least 15 feet which is sufficient to provide a clear view of the plume against a contrasting background with the sun in the 140° sector at his/her back. Consistent with this requirement, the determination shall be made from a position such that the line of vision is approximately perpendicular to the plume direction. Only one plume shall be in the line of sight at any time when multiple stacks are in proximity to each other.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- 5.2.6 Within 60 days after startup of the facility, the Permittee shall develop and implement a Preventive Maintenance Program for Baghouse Source ID Codes DC01 through DC58 to assure that the provisions of Part 3.0 are met. The program shall be subject to review and, if necessary to assure compliance, modification by the Division. At a minimum, the following operation and maintenance checks shall be made on at least a weekly basis, and a record of the findings and corrective actions taken shall be kept in a maintenance log. For each observation of improper operation, the Permittee shall take correction action within twelve (12) hours and reinspect the unit to verify that such problem(s) have been corrected:
[391-3-1-.02(6)(b)1.]
- a. For baghouses equipped with compressed air cleaning systems, check the system for proper operation. This may include checking for low pressure, leaks, proper lubrication, and proper operation of timer and valves.
 - b. For baghouses equipped with reverse air cleaning systems, check the system for proper operation. This may include checking damper, bypass, and isolation valves for proper operation.
 - c. For baghouses equipped with shaker cleaning systems, check the system for proper operation. This may include checking shaker mechanism for loose or worn bearings, drive components, mounting; proper operation of outlet/isolation valves; proper lubrication.
 - d. Check dust collector hoppers and conveying systems for proper operation.
- 5.2.7 The Permittee shall conduct tune-ups on the Calcining and Carbonizing Kiln Thermal Oxidizer burners (Source ID Codes TO01, TO02, TO03, and T04) every twelve months, to include, but is not limited to, any required annual maintenance or flame adjustment as recommended by the manufacturer.
[40 CFR 52.21 BACT]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

PART 6.0 RECORD KEEPING AND REPORTING REQUIREMENTS

6.1 General Record Keeping and Reporting Requirements

6.1.1 Unless otherwise specified, all records required to be maintained by this Permit shall be recorded in a permanent form suitable for inspection and submission to the Division and to the EPA. The records shall be retained for at least five (5) years following the date of entry.
[391-3-1-.02(6)(b)1(i)]

6.1.2 In addition to any other reporting requirements of this Permit, the Permittee shall report to the Division in writing, within seven (7) days, any deviations from applicable requirements associated with any malfunction or breakdown of process, fuel burning, or emissions control equipment for a period of four hours or more which results in excessive emissions.

The Permittee shall submit a written report that shall contain the probable cause of the deviation(s), duration of the deviation(s), and any corrective actions or preventive measures taken.

[391-3-1-.02(6)(b)1(iv) and 391-3-1-.03(10)(d)1(i)]

6.1.3 The Permittee shall submit a written report containing any excess emissions, exceedances, and/or excursions as described in this permit and any monitor malfunctions for each semiannual period ending June 30 and December 31 of each year. All reports shall be postmarked by August 29 and February 28, respectively following each reporting period. In the event that there have not been any excess emissions, exceedances, excursions or malfunctions during a reporting period, the report should so state. Otherwise, the contents of each report shall be as specified by the Division's Procedures for Testing and Monitoring Sources of Air Pollutants and shall contain the following:
[391-3-1-.02(6)(b)1]

- a. A summary report of excess emissions, exceedances and excursions, and monitor downtime, in accordance with Section 1.5(c) and (d) of the above referenced document, including any failure to follow required work practice procedures.
- b. Total process operating time during each reporting period.
- c. The magnitude of all excess emissions, exceedances and excursions computed in accordance with the applicable definitions as determined by the Director, and any conversion factors used, and the date and time of the commencement and completion of each time period of occurrence.
- d. Specific identification of each period of such excess emissions, exceedances, and excursions that occur during startups, shutdowns, or malfunctions of the affected facility. Include the nature and cause of any malfunction (if known), the corrective action taken or preventive measures adopted.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- e. The date and time identifying each period during which any required monitoring system or device was inoperative (including periods of malfunction) except for zero and span checks, and the nature of the repairs, adjustments, or replacement. When the monitoring system or device has not been inoperative, repaired, or adjusted, such information shall be stated in the report.
 - f. Certification by a Responsible Official that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- 6.1.4 For the purpose of reporting excess emissions, exceedances or excursions in the report required in Condition 6.1.3, the following excess emissions, exceedances, and excursions shall be reported:
[391-3-1-.02(6)(b)1]
- a. Excess emissions: (means for the purpose of this Condition and Condition 6.1.3, any condition that is detected by monitoring or record keeping which is specifically defined, or stated to be, excess emissions by an applicable requirement)

None required to be reported in accordance with Condition 6.1.3.
 - b. Exceedances: (means for the purpose of this Condition and Condition 6.1.3, any condition that is detected by monitoring or record keeping that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) do not meet the applicable emission limitation or standard consistent with the averaging period specified for averaging the results of the monitoring)
 - i. Any consecutive twelve-month period during which the facility production rate exceeds 40,000 metric tons of synthetic graphite product as monitored by Condition 5.2.4.a and calculated per Condition 6.2.2.
[40 CFR 52.21 – BACT]
 - ii. Any consecutive twelve-month period during which the facility operates more than 314 synthetic graphite product production cycles as monitored by Condition 5.2.4.b and calculated per Condition 6.2.3.
[40 CFR 52.21 – BACT]
 - iii. Any instance where Hour 26 through Hour 44 of a synthetic graphite product production cycle in one furnace building overlaps with Hour 26 through Hour 44 of a production cycle in the second furnace building as monitored by Condition 5.2.4.b.
[40 CFR 52.21 – BACT]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- iv. Any consecutive twelve-month period during which sulfur dioxide (SO₂) emissions from both Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined, exceed 136.09 tons as determined by Condition 6.2.5.
[40 CFR 52.21 - BACT]
- v. Any hour where sulfur dioxide (SO₂) emissions exceed 75.96 lb/hr from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined, based on the hourly average of a rolling 3-hour period as determined by Condition 6.2.6.
[40 CFR 52.21 - BACT]
- vi. Any consecutive twelve-month period during which carbon monoxide (CO) emissions as calculated in accordance with Condition 6.2.8 from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined, exceed 2,910.1 tons.
[40 CFR 52.21 - BACT]
- vii. Any consecutive twelve-month period during which nitrogen oxides (NO_x) emissions as calculated in accordance with Condition 6.2.10 from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined, exceed 15.43 tons.
[40 CFR 52.21 - BACT]
- viii. Any consecutive twelve-month period during which volatile organic compound (VOC) emissions as calculated in accordance with Condition 6.2.13 from the Calcining Kiln Thermal Oxidizers (Source ID Codes TO01, TO02, and TO03), combined, exceed 51.49 tons.
[40 CFR 52.21 - BACT]
- ix. Any consecutive twelve-month period during which carbon monoxide (CO) emissions as calculated in accordance with Condition 6.2.15 from the Calcining Kiln Thermal Oxidizers (Source ID Codes TO01, TO02, and TO03), combined, exceed 9.71 tons.
[40 CFR 52.21 - BACT]
- x. Any consecutive twelve-month period during which nitrogen oxides (NO_x) emissions as calculated in accordance with Condition 6.2.17 from the Calcining Kiln Thermal Oxidizers (Source ID Codes TO01, TO02, and TO03), combined, exceed 11.56 tons.
[40 CFR 52.21 - BACT]
- xi. Any hour where sulfur dioxide (SO₂) emissions as calculated by Condition 6.2.18 from the Calcining Kiln Thermal Oxidizers (Source ID Codes TO01, TO02, and TO03), combined, exceed 16.45 lb/hr.
[40 CFR 52.21 - BACT]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- xii. Any instance of a weekly determination of visible emissions from any stack venting to Dust Collectors DC01, DC02, DC30 through DC40, and DC50 through DC54; Calcining Kilns CK01 through CK06, Carbonizing Kilns CAK1 and CAK2, and Graphitization Furnaces GR01 and GR02 requiring action by Condition 5.2.5.
 - xiii. Any instance that an operational or maintenance check of Baghouse Source ID Codes DC01 through DC58 required by Condition 5.2.6 reveals that a maintenance action level was triggered, and the maintenance was not performed according to the Preventative Maintenance Program.
 - xiv. Any consecutive twelve-month period during which Emergency Generators EG01 or EG02 or Fire Pumps FP01 or FP02 are operated for more than 500 hours or more than 100 hours for non-emergency purposes.
 - xv. Any instance where any of the Calcining Kilns (Source ID Codes CK01 through CK06) or Carbonizing Kilns (CAK1 and CAK2) are operated without the associated Thermal Oxidizer (Source ID Codes TO01, TO02, TO03, and TO04).
[40 CFR 52.21 BACT]
 - xvi. Any instance where the Graphitization Furnaces (Source ID Codes GR01 and GR02) are operated without the associated Graphitization Furnace Circulating Fluidized Bed Scrubber Systems (Source ID Codes SCR1 and SCR2).
[40 CFR 52.21 BACT]
 - xvii. Any instance when any particulate matter emission source as listed in Table 3.2 is operated without its associated Baghouse/Bin Vent/Fabric Filter (Source ID Codes DC01 through DC58).
[40 CFR 52.21 BACT]
 - xviii. All periods of operation, including duration, during which the sulfur dioxide (SO₂) Continuous Emissions Monitoring System on the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02) are not in operation.
- c. Excursions: (means for the purpose of this Condition and Condition 6.1.4, any departure from an indicator range or value established for monitoring consistent with any averaging period specified for averaging the results of the monitoring):
- i. Any three-hour period of process operation during which the minimum average combustion temperature of the Calcining and Carbonizing Thermal Oxidizers (Source ID Codes TO01, TO02, TO03, and TO04) as monitored by Condition 5.2.2.a falls below the value established by testing as outlined by Condition 4.2.2.a.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- ii. Any three-hour period of process operation where the fresh lime feed rate to the Graphitization Furnace Circulating Fluidized Bed Scrubber Systems (Source ID Codes SCR1 and SCR2) as monitored by Condition 5.2.2.b falls outside the value/range established by testing as outlined in Condition 4.2.1.a.
 - iii. Any three-hour period of process operation where the fluidized bed pressure drop across the Graphitization Furnace Circulating Fluidized Bed Scrubber Systems (Source ID Codes SCR1 and SCR2) as monitored by Condition 5.2.2.c falls outside the value/range established by testing as outlined in Condition 4.2.1.a.
 - iv. All instances of process operation where the lime recirculation rate to the Graphitization Furnace Circulating Fluidized Bed Scrubber Systems (Source ID Codes SCR1 and SCR2) as monitored by Condition 5.2.3.b is shown to be improper as established by testing as outlined in Condition 4.2.1.a.
 - v. All instances of fluidized bed pressure drop alarms Graphitization Furnace Circulating Fluidized Bed Scrubber Systems (Source ID Codes SCR1 and SCR2) and any corrective actions taken.
 - vi. All instances of pressure drop across the Jet Mill Baghouses (Source ID Codes DC32 and DC50) as monitored by Condition 5.2.3.a that fall outside the value/range established by testing as outlined in Condition 4.2.3.
 - vii. All instances of pressure drop across Baghouse ID Codes DC01, DC02, DC30 DC31, DC37 through DC40, and DC54 as monitored by Condition 5.2.3.a that fall outside the value/range established by testing as outlined in Condition 4.2.4.
- d. In addition to the excess emissions, exceedances and excursions specified above, the following should also be included with the report required in Condition 6.1.4:
- i. Hours of operation of the Emergency Generators EG01 and EG02 and Fire Pumps FP01 and FP02, both emergency and non-emergency, during the reporting period.
 - ii. Amount of synthetic graphite product produced on a twelve-month rolling total for each calendar month during the reporting period as calculated by Condition 6.2.2.
 - iii. Number of synthetic graphite production product cycles conducted each calendar month in both Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined, during the reporting period on a twelve-month rolling total, to include date and time of each start, and documentation that Hours 26 through 44 of any production cycle do not overlap for each building.

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- iv. Any maintenance conducted on Calcining and Carbonizing Thermal Oxidizers (Source ID Codes TO01, TO02, TO03, and TO04) due to the results of the annual tune-ups required by Condition 5.2.7.
- v. Records as required by Condition 6.2.1 for adhering to all BACT Work Practice Standards in Conditions 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7, 3.2.15, and 3.2.19.
- vi. The monthly twelve-month rolling totals for SO₂, CO, NO_x, and VOC emissions from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02) and Calcining Kilns (Source ID Codes CK01 through CK06) as calculated by Conditions 6.2.5, 6.2.8, 6.2.10, 6.2.13, 6.2.15, and 6.2.17, recorded during the reporting period.

6.2 Specific Record Keeping and Reporting Requirements

Work Practice Standards

- 6.2.1 The Permittee shall submit in writing for Division approval, within 60 days of startup of each piece of equipment referenced, a protocol that lists all activities to be conducted that demonstrate compliance with the emission limits and work practices listed in Conditions 3.2.3, 3.2.4, 3.2.5, 3.2.6, 3.2.7, 3.2.15, and 3.2.19. Once approved, this protocol shall be used to maintain records of the dates, times, and activities performed that support the BACT Work Practice Standards that are listed in these conditions.
[40 CFR 52.21 BACT and BACT Work Practices]

Synthetic Graphite Product Production

- 6.2.2 The Permittee shall use the monthly synthetic graphite product production data in metric tons that is required to be kept by Condition 5.2.4.a to determine the twelve-month rolling total production for each calendar month.
[40 CFR 52.21 BACT]
- 6.2.3 The Permittee shall use the monthly number of synthetic graphite product production cycles in both Graphitization Furnace Buildings (Source ID Codes GR01 and GR02), combined, that is required to be kept by Condition 5.2.4.b to determine the twelve-month rolling total number of cycles for each calendar month.
[40 CFR 52.21 BACT]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Graphitization Furnace Buildings (Source ID Codes GR01 and GR02)

- 6.2.4 The Permittee shall use the data from the sulfur dioxide (SO₂) continuous emissions monitoring system (CEMS) as required by Condition 5.2.1.a on the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02) to calculate monthly SO₂ emissions from each furnace building. In lieu of actual CEMs data should the CEMs be off-line, the Permittee shall use a value of 75.96 lb/hour SO₂ for all hours of graphitization furnace operation until the CEMS is returned to service. The Permittee shall notify the Division in writing if the monthly SO₂ emissions from the Graphitization Furnace Buildings combined equal or exceed 11.34 tons. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to maintain compliance with the limit in Condition 3.2.11.a. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request. [40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]
- 6.2.5 The Permittee shall use the calculations required by Condition 6.2.4 to determine the twelve-month rolling total emissions of sulfur dioxide (SO₂) for each month from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02) combined for each calendar month. The Permittee shall notify the Division in writing if the SO₂ emissions from the Graphitization Furnace Buildings combined equal or exceed 136.09 tons during any consecutive twelve-month period. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to attain compliance with the emission limit in Condition 3.2.11.a. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request. [40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]
- 6.2.6 The Permittee shall use the data from the sulfur dioxide (SO₂) continuous emissions monitoring system (CEMS) as required by Condition 5.2.1.a on the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02) to determine the average hourly of the rolling 3-hour average for both buildings, combined, to ensure emissions do not exceed 75.96 lb/hr. [40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]
- 6.2.7 The Permittee shall use the results required by Condition 4.2.1.b to calculate monthly carbon monoxide (CO) emissions from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02). Prior to the initial CO testing required by Condition 4.2.1.b, the Permittee shall use an emission factor of 0.066 tons CO per ton graphite product produced for these calculations, as stated in Application No. 28941. The Permittee shall notify the Division in writing if the total monthly CO emissions from the Graphitization Furnace Buildings combined equal or exceed 242.5 tons. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to maintain compliance with the limit in Condition 3.2.10. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request. [40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- 6.2.8 The Permittee shall use the calculations required by Condition 6.2.7 to determine the twelve-month rolling total emissions of carbon monoxide (CO) for each month from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02) for each calendar month. The Permittee shall notify the Division in writing if the CO emissions from the Graphitization Furnace Buildings combined equal or exceed 2,910.1 tons during any consecutive twelve-month period. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to attain compliance with the emission limit in Condition 3.2.10. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]
- 6.2.9 The Permittee shall use the results required by Condition 4.2.1.c to calculate monthly nitrogen oxides (NO_x) emissions from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02). Prior to the initial NO_x testing required by Condition 4.2.1.c, the Permittee shall use an emission factor of 0.00035 tons NO_x per ton graphite product produced for these calculations, as stated in Application No. 28941. The Permittee shall notify the Division in writing if the total monthly NO_x emissions from the Graphitization Furnace Buildings combined equal or exceed 1.28 tons. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to maintain compliance with the limit in Condition 3.2.14. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]
- 6.2.10 The Permittee shall use the calculations required by Condition 6.2.9 to determine the twelve-month rolling total emissions of nitrogen oxide (NO_x) for each month from the Graphitization Furnace Buildings (Source ID Codes GR01 and GR02) for each calendar month. The Permittee shall notify the Division in writing if the NO_x emissions from the Graphitization Furnace Buildings combined equal or exceed 15.43 tons during any consecutive twelve-month period. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to attain compliance with the emission limit in Condition 3.2.14. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Calcining Kilns (Source ID Codes CK01 through CK06) and Carbonizing Kilns (Source ID Codes CAK1 and CAK2)

- 6.2.11 The Permittee shall submit in writing for Division approval, within 60 days of startup of each piece of equipment referenced, a protocol that outlines how volatile organic compounds (VOC), carbon monoxide (CO), and nitrogen oxides (NO_x) emissions will be calculated from the Calcining Kilns (Source ID Codes CK01 through CK06) to demonstrate compliance with the emission limitation in Condition 3.2.17. The Permittee may use site-specific emission factors based on testing from Condition 4.2.2.a, engineering calculations, or any other data that might be pertinent.
[40 CFR 52.21 BACT]
- 6.2.12 The Permittee shall use the protocol required by Condition 6.2.11 to calculate monthly volatile organic compound (VOC) emissions from the Calcining Kilns (Source ID Codes CK01 through CK06). The Permittee shall notify the Division in writing if the total monthly VOC emissions from all Calcining Kilns combined equal or exceed 4.29 tons. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to maintain compliance with the limit in Condition 3.2.17.e. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]
- 6.2.13 The Permittee shall use the calculations required by Condition 6.2.12 to determine the twelve-month rolling total emissions of volatile organic compound (VOC) emissions from the Calcining Kilns (Source ID Codes CK01 through CK06) for each calendar month. The Permittee shall notify the Division in writing if the VOC emissions from all Calcining Kilns combined equal or exceed 51.49 tons during any consecutive twelve-month period. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to attain compliance with the emission limit in Condition 3.2.17.e. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]
- 6.2.14 The Permittee shall use the protocol required by Condition 6.2.11 to calculate monthly carbon monoxide (CO) emissions from the Calcining Kilns (Source ID Codes CK01 through CK06). The Permittee shall notify the Division in writing if the combined total monthly CO emissions from all Calcining Kilns equal or exceed 0.81 tons. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to maintain compliance with the limit in Condition 3.2.17.b. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- 6.2.15 The Permittee shall use the calculations required by Condition 6.2.14 to determine the twelve-month rolling total emissions of carbon monoxide (CO) emissions from the Calcining Kilns (Source ID Codes CK01 through CK06) for each calendar month. The Permittee shall notify the Division in writing if the CO emissions from the entire facility equal or exceed 9.71 tons during any consecutive twelve-month period. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to attain compliance with the emission limit in Condition 3.2.17.b. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]
- 6.2.16 The Permittee shall use the protocol required by Condition 6.2.11 to calculate monthly nitrogen oxides (NO_x) emissions from the Calcining Kilns (Source ID Codes CK01 through CK06). The Permittee shall notify the Division in writing if the combined total monthly NO_x emissions from the Calcining Kilns combined equal or exceed 0.96 tons. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to maintain compliance with the limit in Condition 3.2.17.d. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]
- 6.2.17 The Permittee shall use the calculations required by Condition 6.2.16 to determine the twelve-month rolling total emissions of nitrogen oxides (NO_x) emissions from the Calcining Kilns (Source ID Codes CK01 through CK06) for each calendar month. The Permittee shall notify the Division in writing if the NO_x emissions from the entire facility equal or exceed 11.56 tons during any consecutive twelve-month period. This notification shall be postmarked by the fifteenth day of the following month and shall include an explanation of how the Permittee intends to attain compliance with the emission limit in Condition 3.2.17.d. The Permittee shall maintain these records on site at all times in a format suitable and available for inspection by or submittal to the Division on request.
[40 CFR 52.21 BACT and 391-3-1-.02(6)(b)1.]
- 6.2.18 The Permittee shall submit in writing for Division approval, within 60 days of startup of each piece of equipment referenced, a protocol that outlines how sulfur dioxide (SO₂) emissions will be calculated from the Calcining Kilns (Source ID Codes CK01 through CK06) on a lb/hr basis to demonstrate compliance with the emission limitation in Condition 3.2.1.7.c. The Permittee may use site-specific emission factors based on testing from Condition 4.2.2.b, engineering calculations, or any other data that might be pertinent, as well as propose a method for reporting violations of this limit.
[40 CFR 52.21 BACT]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

Sulfur Content in Green Petroleum Coke

- 6.2.19 The Permittee shall submit in writing for Division approval, within 60 days of startup, a protocol for determining average sulfur content of the delivered green petroleum coke. This may include supplier guarantees or certifications or in-house sampling or some other method to ensure the monthly average sulfur content of the green petroleum coke is equal to or less than the limit in Condition 3.2.12.
[40 CFR 52.21 BACT]

40 CFR 60 Subpart IIII - Record Keeping, Compliance Demonstration & Reporting Requirements for Emergency Generators and Fire Pumps and 40 CFR 63 Subpart ZZZZ Record Keeping, Compliance Demonstration & Reporting Requirements

- 6.2.20 The Permittee shall maintain monthly operating records of each of the emergency stationary diesel generators and/or fire pump engines, including operating hours and reasons of the operation, i.e., emergency power generation and/or fire extinguishing, readiness testing and/or maintenance check. These records shall be kept available for inspection or submittal for five (5) years from the date of record.
[40 CFR 60.4214(b)]
- 6.2.21 The Permittee shall demonstrate compliance with the applicable emission limits in Condition 3.3.1 by purchasing a stationary diesel engine(s)/generators certified to the applicable emission standards in this condition, for the same model year and maximum engine power. The engine shall be installed and configured according to manufacturer's specifications.
[40 CFR 60.4211(c)]
- 6.2.22 The Permittee shall keep records verifying that each shipment of diesel fuel received for firing the emergency stationary diesel generators and fire pump engines complies with the applicable requirements in NSPS IIII. Verification shall consist of either the fuel oil receipts and/or fuel supplier certifications or results of analyses of the fuel oils conducted by methods of sampling and analysis which have been specified or approved by the EPA or the Division. These records shall be kept available for inspection or submittal for five (5) years from the date of record.
[40 CFR 60.4207]
- 6.2.23 The Permittee shall comply with all the applicable requirements of the General Provisions of 40 CFR 60 as listed in Table 8 to 40 CFR 60, Subpart IIII.
[40 CFR 60.4218]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

- 6.2.24 The Permittee shall furnish the Division written notification of the date of the initial startup of each of the emergency stationary diesel generators and fire pump engines within fifteen (15) days after such date.
[391-3-1-.02(2)(c)]
- 6.2.25 The Permittee shall submit notification of startup of all emergency generator engines rated at 500 hp or less in accordance with 40 CFR 63.6645.
[40 CFR 63 ZZZZ]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

PART 7.0 OTHER SPECIFIC REQUIREMENTS

7.1 Specific Conditions

- 7.1.1 The Permittee shall construct and operate the source or modification as defined in Application No. 28941 that is subject to Georgia Rule 391-3-1-.02(7) in accordance with the application submitted pursuant to that rule. If the Permittee constructs or operates a source or modification not in accordance with the application submitted pursuant to that rule or with the terms of any approval to construct, the Permittee shall be subject to appropriate enforcement action.
[391-3-1-.02(7)(b)15. and 40 CFR 52.21(r)(1)]
- 7.1.2 Approval to construct source or modification as defined in Application No. 28941 shall become invalid if construction is not commenced within 18 months after receipt of such approval, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. The Director may extend the 18-month period upon a satisfactory showing that an extension is justified. This provision does not apply to the time period between construction of the approved phases of a phased construction project; each phase must commence construction within 18 months of the projected and approved commencement date. For purposes of this Permit, the definition of “commence” is given in 40 CFR 52.21(b)(9).
[391-3-1-.02(7)(b)15. and 40 CFR 52.21(r)(2)]
- 7.1.3 The Permittee shall notify the Division in writing within 15 days after commencing construction. The notification should document what activities constituting “commencing construction” have been performed and the date on which they occurred.
[391-3-1-.03(2)(c)]
- 7.1.4 The Permittee shall notify the Division in writing within 15 days after startup of operations of any permitted emission unit.
[391-3-1-.03(2)(c)]
- 7.1.5 The Permittee shall submit a completed Part 70 Operating Permit application to the Division in the approved format within 12 months after the initial startup of the facility.
[391-3-1-.03(2)(c)]
- 7.1.6 The Permittee shall submit all required written notifications to the Division as noted below:
[391-3-1-.03(2)(c)]

Mr. Sean Taylor
Stationary Source Compliance Program
4244 International Parkway, Suite 120
Atlanta, GA 30354

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

PART 8.0 GENERAL PROVISIONS

8.1 Modifications

- 8.1.1 Prior to any source commencing a modification as defined in 391-3-1-.01(pp) that may result in air pollution and not exempted by 391-3-1-.03(6), the Permittee shall submit a Permit application to the Division. The application shall be submitted sufficiently in advance of any critical date involved to allow adequate time for review, discussion, or revision of plans, if necessary. Such application shall include, but not be limited to, information describing the precise nature of the change, modifications to any emission control system, production capacity of the plant before and after the change, and the anticipated completion date of the change. The application shall be in the form of a Georgia air quality Permit application to construct or modify (otherwise known as a SIP application) and shall be submitted on forms supplied by the Division, unless otherwise notified by the Division.
[391-3-1-.03(1) through (8)]

8.2 Circumvention

State Only Enforceable Condition.

- 8.2.1 The Permittee shall not build, erect, install, or use any article, machine, equipment or process the use of which conceals an emission which would otherwise constitute a violation of an applicable emission standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of the pollutants in the gases discharged into the atmosphere.
[391-3-1-.03(2)(c)]

8.3 Other General Provisions

- 8.3.1 At all times, including periods of startup, shutdown, and malfunction, the Permittee shall maintain and operate the source, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on any information available to the Division that may include, but is not limited to, monitoring results, observations of the opacity or other characteristics of emissions, review of operating and maintenance procedures or records, and inspection or surveillance of the source.
[391-3-1-.02(2)(a)10]

**DRAFT State of Georgia
Department of Natural Resources
Environmental Protection Division**

Anovion Technologies LLC

Permit No.: 3624-087-0061-P-01-0

State Only Enforceable Condition.

- 8.3.2 No person owning, leasing, or controlling, the operation of any air contaminant sources shall willfully, negligently or through failure to provide necessary equipment or facilities or to take necessary precautions, cause, permit, or allow the emission from said air contamination source or sources, of such quantities of air contaminants as will cause, or tend to cause, by themselves, or in conjunction with other air contaminants, a condition of air pollution in quantities or characteristics or of a duration which is injurious or which unreasonably interferes with the enjoyment of life or use of property in such area of the State as is affected thereby. Complying with Georgia's Rules for Air Quality Control Chapter 391-3-1 and Conditions in this Permit, shall in no way exempt a person from this provision.
[391-3-1-.02(2)(a)1]
- 8.3.3 In cases where conditions of this Permit conflict with each other for any particular source or operation, the most stringent condition shall prevail.
[391-3-1-.02(2)(a)2]
- 8.3.4 The Permittee shall calculate and pay an annual Permit fee to the Division. The amount of the fee shall be determined each year in accordance with the "Procedures for Calculating Air Permit Fees."
[391-3-1-.03(9)]
- 8.3.5 At any time that the Division determines that additional control of emissions from the facility may reasonably be needed to provide for the continued protection of public health, safety and welfare, the Division reserves the right to amend the provisions of this Permit pursuant to the Division's authority as established in the Georgia Air Quality Act and the rules adopted pursuant to that Act.
[391-3-1-.02(2)(a)3.]
- 8.3.6 This Permit is not transferable by the Permittee. Future owners and operators shall obtain a new Permit from the Director.
[391-3-1-.03(4)]
- 8.3.7 Unless specifically defined in this permit, terms in this permit shall be defined by 40 CFR 63, 40 CFR 60, and the Georgia Rules for Air Quality Control 391-3-1 as applicable.
[391-3-1-.03(2)(c)]