Facility Name: **Anchor Glass Container Corporation – Warner Robins Plant**
City: Warner Robins
County: Houston
AIRS #: 04-13-15300014

Application #: TV-44692
Date Application Received: April 10, 2017
Permit No: 3221-153-0014-V-06-0

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Introduction

This narrative is being provided to assist the reader in understanding the content of referenced operating permit. Complex issues and unusual items are explained here in simpler terms and/or greater detail than is sometimes possible in the actual permit. The permit is being issued pursuant to: (1) Georgia Air Quality Act, O.C.G.A § 12-9-1, et seq. and (2) Georgia Rules for Air Quality Control, Chapter 391-3-1, and (3) Title V of the Clean Air Act. Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control incorporates requirements of Part 70 of Title 40 of the Code of Federal Regulations promulgated pursuant to the Federal Clean Air Act. The narrative is intended as an adjunct for the reviewer and to provide information only. It has no legal standing. Any revisions made to the permit in response to comments received during the public participation and EPA review process will be described in an addendum to this narrative.

I. Facility Description

A. Facility Identification

1. Facility Name:

   Anchor Glass Container Corporation – Warner Robins Plant

2. Parent/Holding Company Name

   Ardagh Glass, Inc.

3. Previous and/or Other Name(s)

   Ardagh Glass, Inc.

4. Facility Location

   1044 Booth Road
   Warner Robins, Georgia 31088

5. Attainment, Non-attainment Area Location, or Contributing Area

   Anchor Glass Container Corporation – Warner Robins Plant (AG) is located in Houston County, which is considered to be in "attainment" or "unclassifiable" for all criteria air pollutants. Houston County is outside the 32 county Atlanta area for the additional VOC and NO_x control rules.

B. Site Determination

There are no other facilities which could possibly be contiguous or adjacent and under common control.

C. Existing Permits

Table 1 below lists all current Title V permits, all amendments, 502(b)(10) changes, and off-permit changes, issued to the facility, based on a comparative review of form A.6, Current Permits, of the Title V application and the "Permit" file(s) on the facility found in the Air Branch office.

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/ Effectiveness	Purpose of Issuance
3221-153-0014-V-05-0	December 13, 2012	Name change to Ardagh Glass, Inc.
3221-153-0014-V-05-1	October 6, 2014	Modifications to Glass Melting Furnace No. 2 burner configuration and name change back to Anchor Glass Container Corporation

Table 1: List of Current Permits, Amendments, and Off-Permit Changes

Permit Number and/or Off-Permit Change	Date of Issuance/ Effectiveness	Purpose of Issuance
Off-Permit Change	August 26, 2015	Off-permit change authorizing Glass Furnace No. 1 refractory replacement, ceramic weld of superstructure, overcoat furnace and flue cleaning with checker slag disposal.

D. Process Description

1. SIC Codes(s)

3221

The SIC Code(s) identified above were assigned by EPD's Air Protection Branch for purposes pursuant to the Georgia Air Quality Act and related administrative purposes only and are not intended to be used for any other purpose. Assignment of SIC Codes by EPD's Air Protection Branch for these purposes does not prohibit the facility from using these or different SIC Codes for other regulatory and non-regulatory purposes.

Should the reference(s) to SIC Code(s) in any narratives or narrative addendum previously issued for the Title V permit for this facility conflict with the revised language herein, the language herein shall control; provided, however, language in previously issued narratives that does not expressly reference SIC Code(s) shall not be affected.

2. Description of Product(s)

The facility manufactures glass container bottles for the beverage industry.

3. Overall Facility Process Description

This facility consists of a raw material batching operation, two glass melting furnaces, and six glass container forming and finishing lines. An overall outline of the glass making process is described as follows:

Raw Materials Batching

Delivery - Raw materials (e.g., sand, limestone, soda ash, and minor quantities of other solid mineral products) are delivered to the facility by rail car and by truck.

Unloading and storage - Raw materials are unloaded in bulk into a bucket elevator that transfers the different raw materials to separate storage silos.

Mixing - Raw materials are weighed in precise amounts and blended for delivery to the glass melting furnace.

Cullet crusher - Plant-generated waste glass (cullet) is ground for reprocessing as a raw material.

Glass Melting - The precisely mixed raw materials are delivered to the furnaces for continuous melting. The furnaces, which are primarily fueled by a combination of natural gas and electric heat, melt the raw materials into a viscous fluid. The glass is cooled to forming temperatures in the refiner, alcoves, and forehearths.

Glass Forming Shearing mechanisms cut continuous streams of molten glass into precise increments of hot, viscous glass called "gobs." Those gobs are gravity-fed to the forming machines. The forming machines form containers from the gobs by shaping the glass using a combination of mechanical pressing and air blowing processes. Several hundred containers per minute are produced.
Hot End Container Coating - The glass containers pass through a hot end vapor deposition hood, where a tin-based coating is applied as a surface preparation prior to the cold end coating.

Glass Annealing - Containers are delivered on a belt to annealing lehrs to remove residual stresses induced during container forming and then to allow the containers time to cool before further processing.

Cold End Container Coating - A spray coater applies a polyethylene coating after application of the food-grade coating to the container's exterior surface as a scratch preventative.

Container Identification - A Video Jet printing system puts identifying numbers on selected containers and cartons as required by various customers.

Packaging - Containers are automatically put into cardboard boxes or onto pallets for bulk handling and shipping.

4. Overall Process Flow Diagram

The facility provided a process flow diagram in their Title V permit application.

E. Regulatory Status

1. PSD/NSR

AG is a major source with regards to the New Source Review (NSR) Prevention of Significant Deterioration of air quality (PSD). The facility is a major source because the potential to emit (PTE) sulfur dioxide and nitrogen oxides is each greater than the PSD major source threshold of 250 tons per year (ton/yr).

2. Title V Major Source Status by Pollutant

Table 2: Title V Major Source Status

Pollutant	Is the Pollutant Emitted?	If emitted, what is the facility's Title V status for the pollutant?		
		Major Source Status	Major Source Requesting SM Status	Non-Major Source Status
PM	Yes			✓
PM_{10}	Yes			✓
$PM_{2.5}$	Yes			✓
SO_2	Yes	✓		
VOC	Yes			✓
NO_x	Yes	✓		
CO	Yes			✓
TRS	N/A			
H_2S	N/A			
Individual HAP	Yes			✓
Total HAPs	Yes			✓

3. MACT Standards

AG is not a major source for hazardous air pollutants (HAPs) and is not subject to any MACT standard.

Note that AG is not subject to 40 CFR 63, Subpart SSSSSS – "National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources" because each furnace is not used to produce glass that contains one or more of the glass manufacturing metal HAP (arsenic, cadmium, chromium, lead, manganese, or nickel) as raw materials, at a rate of at least 50 tons per year.

4. Program Applicability (AIRS Program Codes)

Program Code	Applicable (y/n)
Program Code 6 - PSD	N
Program Code 8 – Part 61 NESHAP	N
Program Code 9 - NSPS	Y
Program Code M – Part 63 NESHAP	N
Program Code V – Title V	Y

Regulatory Analysis

II. Facility Wide Requirements

A. Emission and Operating Caps:

None applicable.

B. Applicable Rules and Regulations

None applicable.

C. Compliance Status

AG has not indicated any non-compliance.

D. Operational Flexibility

None applicable.

E. Permit Conditions

None.

III. Regulated Equipment Requirements

A. Equipment List for the Process

Emission Units		Specific Limitations/Requirements		Air Pollution Control Devices	
ID No.	Description	Applicable Requirements/Standards	Corresponding Permit Conditions	ID No.	Description
EU01	Glass Melting Furnace No. 1	40 CFR 60, Subpart A 40 CFR 60, Subpart CC GA Rule 391-3-1-.02(2)(b) GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(g)	3.2.1, 3.2.3, 3.3.1, 3.3.2, 3.4.1, 3.4.2, 3.4.3, 4.2.1, 4.2.3, 4.2.4, 4.2.5, 4.2.6, 5.2.1, 5.2.2, 6.1.7a.i, 6.1.7b.i, 6.1.7c.i, 6.2.1, 6.2.2	None	None
EU02	Glass Melting Furnace No. 2	40 CFR 60, Subpart A 40 CFR 60, Subpart CC GA Rule 391-3-1-.02(2)(b) GA Rule 391-3-1-.02(2)(e) GA Rule 391-3-1-.02(2)(g)	3.2.2, 3.2.3, 3.3.1, 3.3.2, 3.4.1, 3.4.2, 3.4.3, 4.2.2, 4.2.3, 4.2.4, 4.2.5, 4.2.7, 5.2.1, 6.1.7a.ii, 6.1.7b.ii-v, 6.2.1, 6.2.3, 6.2.4, 6.2.5	None	None

B. Equipment & Rule Applicability

Glass Melting Furnace No.1 and No. 2

Glass melting furnace No. 1 was installed in 1974 and Glass melting furnace No. 2 in 1978. Furnace No. 1 has a maximum heat input capacity of 165 million British Thermal Units per hour (MMBtu/hr) and Furnace No. 2 has a maximum heat input capacity of 135 MMBtu/hr. Each furnace can burn natural gas or propane. Each furnace has an oxy boost system to reduce nitrogen oxide emissions by combusting oxygen in part or in whole in place of air. Each furnace also has an electric boost to melt the furnace charge. Since each furnace is equipped with oxy boost and electric boost, each is equipped "with a modified process." A furnace "with a modified process" is defined by the new source performance standards (NSPS) as one "using any technique designed to minimize emissions without the use of add-on pollution controls."

Each furnace is subject to 40 CFR 60, Subpart CC - "Standards of Performance for Glass Manufacturing Plants." Pursuant to the NSPS, each furnace is subject to the particulate matter limit of one pound per ton of molten glass pulled from the furnace (lb/ton). This standard requires the Permittee to install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) for the measurement of visible emissions discharged from the furnace.

A particulate matter (PM) performance test conducted on October 31, 2017 on Furnace No. 1, indicated an average emission rate of 0.94 lb PM/ton of glass pulled, less than the NSPS limit of 1.0 lb PM/ton of glass pulled. Similarly, a PM performance test conducted on November 14, 2017 on Furnace No. 2, indicated an average emission rate of 0.85 lb PM/ton of glass pulled, less than the NSPS limit of 1.0 lb PM/ton of glass pulled. Therefore, compliance with the PM NSPS limit for each furnace is likely.

Note that Permit Amendment No. 3221-153-0014-V-05-1 removed the Furnace No. 2 PSD avoidance limits of 0.89 lb-PM/ton, 2.00 lb-NO_x/ton, and 2.90 lb-SO_2/ton of glass pulled from the permit. Instead 12-month consecutive PM, PM_{10}, $PM_{2.5}$, NO_x, and SO_2 limits of 83.1, 75.2, 67.9, 142.4, and 189.9 tons, respectively, were established.

PM, PM_{10}, $PM_{2.5}$, performance tests conducted on November 14, 2017 predicted 12-month consecutive emission rates of 52.3, 52.3 and 51.0 tons, respectively. Therefore, compliance with the PM, PM_{10}, and $PM_{2.5}$ limits are likely for Furnace No. 2.

NO_x and SO_2 performance tests conducted on November 15, 2017 predicted 12-month consecutive emission rates of 73.7 and 65.7 tons, respectively. Therefore, compliance with the NO_x and SO_2 limits are likely for Furnace No. 2.

Glass Melting Furnaces Nos. 1 and 2 are subject to Georgia Rules (e), (b), and (g). Compliance with each rule is likely.

C. Permit Conditions

Condition No.	Description
3.2.1	Existing Condition, V-05-0. Pursuant to PSD avoidance, this condition limits the emission of NO_x from Glass Melting Furnace No. 1 to 9.0 lb/ton of glass pulled.
3.2.2	Existing Condition, V-05-1. Pursuant to PSD avoidance, this condition limits the emissions of PM, PM_{10}, $PM_{2.5}$, NO_x, and SO_2 from Glass Melting Furnace No. 2 to 83.1, 75.2, 67.9, 142.4, and 189.9 tons, respectively, during any 12-month consecutive period.
3.2.3	Existing Condition, V-05-0. Pursuant to PSD avoidance, this condition limits the production of molten glass pulled from Glass Melting Furnace Nos. 1 and 2 to 470 and 455 tons per day, respectively.
3.3.1	Existing Condition, V-05-0. This condition indicates that Glass Melting Furnace Nos. 1 and No. 2 are subject to the General Provisions of 40 CFR 60, Subpart A and to the Standards of Performance for Glass Manufacturing Plants, 40 CFR 60, Subpart CC.
3.3.2	Existing Condition, V-05-0. Pursuant to 40 CFR 60.293(b)(1), Glass Melting Furnace Nos. 1 and 2 are subject to the particulate matter standard of 1.0 lb/ton of glass pulled.
3.4.1	Existing Condition, V-05-0. Pursuant to Georgia Rule (b), this condition sets a visible emission limit, the opacity of which is less than 40 percent for any air contaminant source.
3.4.2	Existing Condition, V-05-0. Pursuant to Georgia Rule (g), this condition sets a sulfur limit of less than or equal to 3.0 percent for any fuel burning source having a heat input capacity of equal to or greater than 100 MMBtu/hr.
3.4.3	Existing Condition, V-05-0. Pursuant to Georgia Rule (e), this condition sets the particulate matter emissions from Glass Melting Furnace No. 1 and No. 2 below the Rule (e) limit for each furnace.

IV. Testing Requirements (with Associated Record Keeping and Reporting)

A. General Testing Requirements

The permit includes a requirement that the Permittee conduct performance testing on any specified emission unit when directed by the Division. Additionally, a written notification of any performance test(s) is required 30 days (or sixty (60) days for tests required by 40 CFR Part 63) prior to the date of the test(s) and a test plan is required to be submitted with the test notification. Test methods and procedures for determining compliance with applicable emission limitations are listed and test results are required to be submitted to the Division within 60 days of completion of the testing.

B. Specific Testing Requirements

Condition No.	Description
4.2.1	Existing Condition, V-05-1. This condition requires the Permittee to conduct performance tests annually for PM and NO_x emitted from Glass Melting Furnace No. 1 to verify compliance with the emission limits for PM and for NO_x.
4.2.2	Existing Condition, V-05-1. This condition requires the Permittee to conduct performance tests for PM, PM_{10}, $PM_{2.5}$, NO_x, and SO_2 to demonstrate compliance with conditions in the permit.
4.2.3	Existing Condition, V-05-0. Pursuant to 40 CFR 60.296(d)(1), (3), this condition requires the Permittee to use the indicated equation to calculate the particulate matter emission rate for each run of the performance test required by Condition Nos. 4.2.1 and 4.2.2.
4.2.4	Existing Condition, V-05-1. Pursuant to 40 CFR 60.2939(c)(2), (3), and (4); this condition requires the Permittee to conduct opacity monitoring during initial performance testing of Glass Melting Furnace Nos. 1 and 2 and to determine the opacity value that corresponds to 99 percent confidence level. Since Condition Nos. 4.2.1 and 4.2.2 also require annual PM performance testing, determining the opacity value that corresponds to 99 percent confidence level with the data provided by the COMS on each furnace during the test is required because this provides a new baseline for comparing monitored opacity readings from this point forward.
4.2.5	Existing Condition, V-05-0. Pursuant to 40 CFR 60.293(e), this condition indicates that the Permittee may redetermine the opacity value corresponding to the 99 percent upper confidence level as described in Condition 4.2.4 if the Permittee conducts a performance test that demonstrates compliance with the emission limit(s) of Condition Nos. 3.2.2 and 3.3.2.
4.2.6	Existing Condition, V-05-0. This condition requires the Permittee to monitor and record the oxygen input per hour for oxy boost during the NO_x performance test of Glass Melting Furnace No. 1.

Condition No.	Description
4.2.7	Existing Condition, V-05-0.7 This condition requires the Permittee to identify the amount of sulfur containing materials and the percentage sulfur contained in each material used for the batch to calculate the SO_2 retention factor.

V. Monitoring Requirements

A. General Monitoring Requirements

Condition 5.1.1 requires that all continuous monitoring systems required by the Division be operated continuously except during monitoring system breakdowns and repairs. Monitoring system response during quality assurance activities is required to be measured and recorded. Maintenance or repair is required to be conducted in an expeditious manner.

B. Specific Monitoring Requirements

Condition No.	Description
5.2.1	Existing Condition, V-05-0. Pursuant to 40 CFR 60.293(c)(1), this condition requires the Permittee to install a continuous opacity monitoring system (COMS) on Glass Melting Furnace Nos. 1 and 2.
5.2.2	Existing Condition, V-05-0. This condition requires the Permittee to install, calibrate, maintain, and operate oxygen monitoring system to measure the oxygen input rate, in standard cubic feet per hour (SCFH), to Glass Melting Furnace No. 1.

VI. Record Keeping and Reporting Requirements

A. General Record Keeping and Reporting Requirements

The Permit contains general requirements for the maintenance of all records for a period of five years following the date of entry and requires the prompt reporting of all information related to deviations from the applicable requirements. Records, including identification of any excess emissions, exceedances, or excursions from the applicable monitoring triggers, the cause of such occurrence, and the corrective action taken, are required to be kept by the Permittee and reporting is required on a semiannual basis.

B. Specific Record Keeping and Reporting Requirements

Condition No.	Description
6.1.7.a.i.-ii.	Modified Conditions. Pursuant to 40 CFR 60.293(c)(5), this condition requires the Permittee to report as excess emissions any 6-minute period during which the average opacity from Glass Melting Furnace No. 1 or No. 2 exceeds the opacity value corresponding to the 99 percent upper confidence level, established per the most recent performance testing. [The Compliance Program indicated a preference for a single opacity value vis-a-vis the choice of meeting either the given value or the value obtained from the most recent performance test as stipulated in the existing permit.]
6.1.7.b.i.	Existing Condition. To protect PSD avoidance, this condition defines as an exceedance any day that the molten glass pulled from Glass Melting Furnace No. 1 exceeds 470 tons.
6.1.7.b.ii.	Existing Condition, V. To protect PSD avoidance, this condition defines as an exceedance any day that the molten glass pulled from Glass Melting Furnace No. 2 exceeds 455 tons.
6.1.7.b.iii.	Existing Condition. To protect PSD avoidance, this condition defines as an exceedance any 12-month consecutive period when NO_x emission from Glass Melting Furnace No. 2 exceeds 142.4 tons.
6.1.7.b.iv.	Existing Condition. To protect PSD avoidance, this condition defines as an exceedance any 12-month consecutive period when SO_2 emission from Glass Melting Furnace No. 2 exceeds 189.9 tons.
6.1.7.b.v.	Existing Condition. To protect PSD avoidance, this condition defines as an exceedance any 12-month consecutive period when PM, PM_{10}, and $PM_{2.5}$ emissions from Glass Melting Furnace No. 2 exceeds 83.1, 75.2, and 67.9 tons, respectively.
6.1.7.c.i.	Existing Condition, V-05-1. To protect PSD avoidance for NO_x, this condition defines as an excursion any 3-hour period during which the oxygen input flow rate for oxy boost of Glass Melting Furnace No. 1, is below 95 percent of the value established via Condition No. 4.2.7 whenever the glass melting furnace is operating above 350 tons per day of glass pulled.

6.2.1	Existing Condition, V-05-0. To protect PSD avoidance, this condition requires the hourly measurement and recording of the glass pull rate for Glass Melting Furnace Nos. 1 and 2. The condition also requires the calculation and recording of the daily glass pull rate for each furnace.
6.2.2	Existing Condition, V-05-0. To protect PSD avoidance for NO_x when the glass production from Glass Melting Furnace No. 1 exceeds 350 tons per day, this condition requires the Permittee to record the oxygen input rate in accordance with the requirement of Condition No. 5.2.2.
6.2.3	Existing Condition, V-05-0. To protect PSD avoidance for SO_2, this condition requires the Permittee to obtain a sample of each sulfur-containing raw material constituent used in Glass Melting Furnace No. 2 and perform an analysis of that constituent for the sulfur content (percent) once each year.
6.2.4	Existing Condition, V-05-0. To protect PSD avoidance for SO_2, this condition requires the Permittee to calculate and record daily, the SO_2 emissions from Glass Melting Furnace No. 2 as stipulated therein.
6.2.5	Existing Condition, V-05-1. To protect PSD avoidance for PM, PM_{10}, $PM_{2.5}$, NO_x, and SO_2 emissions from Glass Melting Furnace No. 2, this condition requires the calculation of the monthly and 12-month rolling totals of each pollutant using emission factors from the most recent performance tests.

VII. Specific Requirements

A. Operational Flexibility – None applicable

B. Alternative Requirements – None Applicable

C. Insignificant Activities

Refer to http://gatv.georgiaair.org/GATV/default.asp for the Online Title V Application.

Refer to the following forms in the Title V permit application:

- Form D.1 (Insignificant Activities Checklist)
- Form D.2 (Generic Emissions Groups)
- Form D.3 (Generic Fuel Burning Equipment)
- Form D.6 (Insignificant Activities Based on Emission Levels of the Title V permit application)

D. Temporary Sources - None

E. Short-Term Activities - None

F. Compliance Schedule/Progress Reports - None

G. Emissions Trading - None

H. Acid Rain Requirements - None

I. Stratospheric Ozone Protection Requirements

The standard permit condition pursuant to 40 CFR 82 Subpart F has been included in the Title V permit. The facility operates equipment that is subject to Title VI of the 1990 Clean Air Act Amendments.

J. Pollution Prevention - None

K. Specific Conditions - None

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Template Condition 8.14.1 was updated in September 2011 to change the default submittal deadline for Annual Compliance Certifications to February 28.

Template Condition Section 8.27 was updated in August 2014 to include more detailed, clear requirements for emergency generator engines currently exempt from SIP permitting and considered insignificant sources in the Title V permit.

Template Condition Section 8.28 was updated in August 2014 to more clearly define the applicability of the Boiler MACT or GACT for major or minor sources of HAP.

Addendum to Narrative