

**NORTH CAROLINA DIVISION OF  
AIR QUALITY**

**Air Permit Review**

Permit Issue Date: **date, 2010**

**Region:** Asheville Regional Office  
**County:** Burke  
**NC Facility ID:** 1200028  
**Inspector's Name:** Brendan Davey  
**Date of Last Inspection:** 05/09/2007  
**Compliance Code:** C/In Compliance With  
 Procedural Reqr

<b>Facility Data</b>			<b>Permit Applicability (this application only)</b>
<b>Applicant (Facility's Name):</b> SGL Carbon LLC  <b>Facility Address:</b> SGL Carbon LLC 307 Jamestown Road Morganton, NC 28655  <b>SIC:</b> 3624 / Carbon And Graphite Products <b>NAICS:</b> 335991 / Carbon and Graphite Product Manufacturing  <b>Facility Classification: Before:</b> Title V <b>After:</b> Title V <b>Fee Classification: Before:</b> Title V <b>After:</b> Title V			<b>SIP:</b> 15A NCAC 2D .0614 <b>NSPS:</b> <b>NESHAP:</b> <b>PSD:</b> <b>PSD Avoidance:</b> <b>NC Toxics:</b> <b>112(r):</b> <b>Other:</b>
<b>Contact Data</b>			<b>Application Data</b>
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<b>Application Number:</b> 1200028.05B and 1200028.08A <b>Date Received:</b> 11/29/2005 and 2/25/2008 <b>Application Type:</b> Renewal/Modification and Administrative Amendment <b>Application Schedule:</b> TV-Renewal <b>Existing Permit Data</b> <b>Existing Permit Number:</b> 03287/T27 <b>Existing Permit Issue Date:</b> 01/23/2009 <b>Existing Permit Expiration Date:</b> 10/31/2012
Richard Ives Senior Project Engineer (828) 432-5811 307 Jamestown Road Morganton NC, 28655	Charles Conner Plant Manager (828) 432-5700 307 Jamestown Road Morganton NC, 28655	Richard Ives Senior Project Engineer (828) 432-5811 307 Jamestown Road Morganton NC, 28655	
<b>Review Engineer:</b> Mark Cuilla  <b>Review Engineer's Signature:</b> <b>Date:</b> <b>date, 2010</b>		<b>Comments / Recommendations:</b> Issue 03287/T28 <b>Permit Issue Date:</b> <b>date, 2010</b> <b>Permit Expiration Date:</b> <b>date, 2015</b>	

**I. Purpose of Application**

This permitting action is a renewal with modification of an existing Title V permit pursuant to 2Q .0513. The existing Title V permit (**03287T27**) was issued on **January 23, 2009**, and is currently scheduled to expire on the earlier of **October 31, 2012** or the renewal of permit **03287T25** has been issued or denied. The renewal application was received on **November 29, 2005**, or at least nine months prior to the original expiration date of **August 31, 2006**. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

In addition to the request for renewal, the Permittee has requested the following modifications to the permit. It should be noted that the Permittee submitted an application for modification subsequent to the renewal application (see History Section of this Document). Some of the requested modifications noted in the renewal application were completed with the issuance of **T26**. These are noted in italics below:

1. In order to satisfy the request for an administrative amendment included as Part II of permit **03287T25** issued **June 10, 2005**, the Permittee has confirmed the control device option for the recently permitted Sagger can unloading station (**ID No. ES-2L-DC05**). The Permittee has chosen to vent the emission source to the existing fabric filter (**ID No. CD-2F-DC5524**) - *completed as part of the issuance of T26*;
2. Emission source (**ID No. ES-7B**), the salvage department, Building 25-B, has previously been defined as a Centerless Grinder Operation for Graphite Rods. At this time, **ES-7B** is comprised of a G&L Vertical Boring Mill and a Drawoff under-collector. The Permittee is requesting that the emission source description be modified to accurately represent the equipment - *completed as part of the issuance of T26*;
3. The insignificant source (**ID No. I-Kiln**) is listed as one softwood, steam heated, lumber kiln (12'x12'x16'). The Permittee is requesting a description modification to reflect that the operation is now an electrically heated 10'x10'x12' kiln and has been relocated to the east side of Building 25-A - *completed as part of the issuance of T26*; and
4. Modification of the existing twelve electric lengthwise graphitizing (LWG) furnaces (Building 24) (**ID No. ES-5E.1 through ES-5E.12**) with a nitrogen purge system.

In addition to the request for renewal, the Permittee has requested the following modifications/additions to the permit (to be constructed/operated at a later date). It should be noted that the equipment will either be transported from sister facilities or purchased new:

1. Three Sigma Mixers (**ID No. ES-1J**) controlled by internally vented fabric filters, one each, during initial raw material transfer and dry mixing and existing electrostatic precipitator (**ID No. CD-1B-02-ESP**) when appropriate temperature is reached and evolution of pitch volatiles begins -*completed as part of the issuance of T26*;
2. Ten induction furnaces (**ID Nos. I-IF01 and I-IF02**) with associated nitrogen purge system (installed in two banks of five furnaces);
3. One steel shot blast-cleaning operation (**ID No. ES-2M**) controlled by an existing fabric filter (**ID No. CD-2C-DC425**);
4. One super sack unloading station (**ID No. ES-5M**) controlled by an existing fabric filter (**ID No. CD-5A-DC2324**); and
5. One vibratory mold press (**ID No. ES-1K**) controlled by an existing electrostatic precipitator (**ID No. CD-1B-02-ESP**).

Also as part of the renewal, the Permittee has requested the following equipment be removed from the permit:

1. Baking furnaces (**ID No. ES-2H.1 through ES-2H.9**) with associated gas-fired thermal oxidizer (**ID No. CD-2H-04W4**) - *completed as part of the issuance of T26*;
2. Mini rod Sagger handling operation (**ID No. ES-3A**) with associated fabric filter (**ID No. CD-3A-DC5114**) - *completed as part of the issuance of T26*; and
3. Permatrode operation (**ID No. I-Permatrode**) - *completed as part of the issuance of T26*.

## II. Facility Description

This facility manufactures synthetic graphite primarily for use as electrodes in steel and other metal manufacturing. The facility receives calcined petroleum coke, coal tar pitch, and petroleum pitch via railcar, and then transfers it to silos or storage tanks for storage. The coke is “milled” to the appropriate size before being blended with the coal tar pitch. The blend is then extruded and cooled to form what is called green stock. The green stock is placed in sagger cans, surrounded with packing media (sand), and baked at very high temperatures. The baking causes voids for form, which is then remedied by “pitch impregnation”. During impregnation, petroleum pitch is used to fill the voids. The stock then goes to rebake, where unnecessary constituents are further volatilized. Following rebake, stock is subject to graphitization procedures whereby electrical resistivity is used to convert carbon to graphite. After graphitization, the stock is then ready for mechanical finishing.

## III. History/Background/Application Chronology

**October 2, 2003** – Permit **03287T24** was issued as an initial Title V permit.

**June 10, 2005** – Permit **03287T25** was issued as a 502(b)(10) modification for the construction of one Sagger can unloading station (**ID No. ES-2L-DC05**). At that time the Permittee did not know how it was going to finally control emissions from this source. The permit was written with the ability for the Permittee to either construct a new fabric filter (**ID No. CD-2L-DC05**) or duct the new equipment to an existing fabric filter (**ID No. CD-2F-DC5524**). In addition, the Permittee was required to request an administrative amendment to identify which control option was finally chosen.

**November 29, 2005** – Permit application **1200028.05B** was received for processing and assigned to Judy Lee for processing. The Permittee is requesting permit renewal as well as modification. The application was deemed complete for processing.

**December 29, 2005** – Received ARO “Recommendations and Comments on Air Permit Application”. See Section IX of this Document for a discussion.

**January 18, 2006** – Received email correspondence from Brendan Davey of ARO concerning SGL’s response to questions posed to the Permittee by ARO concerning PM, SO<sub>2</sub>, and H<sub>2</sub>S issues.

**February 2, 2006** – Received email request from Brendan Davey that DAQ require the Permittee to model for hydrogen sulfide because of the promulgated AAL modification.

**February 6, 2006** – DAQ sent Permittee Add Info letter requesting facility-wide modeling demonstration for hydrogen sulfide emissions.

**July 13, 2006** – Received modeling demonstration from Permittee in response to DAQ request for information.

**August 7, 2006** – Permit application **1200028.05B** transferred to Bob Wooten from Judy Lee for processing.

**January 26, 2007** – Received Dispersion Modeling Analysis from DAQ AQAB. See Section VII of this Document for a discussion.

**February 2, 2007** – Permit application **1200028.05B** transferred to Mark Cuilla from Bob Wooten for processing.

**May 9, 2007** – Brendan Davey of ARO completes inspection of the facility.

**May 24, 2007** – Received email from Brendan Davey concerning the monthly recording of pressure drop readings for three small bagfilters that are not equipped with magnahelic gauges. He suggests removing the monthly requirements for pressure drop readings for these sources (**ID Nos. CD-BK-SR01, CD-BK-SR01 and CD-5M-BV101**). *This suggestion was incorporated into the renewed permit as requested.*

**May 25, 2007** – Received email from Brendan Davey concerning the application of 15A NCAC 2D .0958 to the facility. He is not entirely sure what portions of the plant would be regulated. The facility does handle tar pitch that has some trace volatiles but is not sure that the intent of the rule is to regulate pitch handling. DAQ does not put this condition in asphalt plant permits for liquid asphalt. *This subject was discussed in the permit review for the initial Title V permit. That Document states that “2D .0958 applies to all facilities that use VOCs as solvents, carriers, material processing media, or industrial chemical reactants, or in other similar uses that mix, blend, or manufacture VOCs, or emit VOCs as a product of chemical reactions. These operations consist of the mixing of pitch and coke, and pitch is considered a VOC. Thus, this rule does apply. However, there are no control requirements under 2D .0958 that would apply to this operation.” Therefore, the renewed permit continues to require that the Permittee perform facility-wide VOC work practice standards and report semi-annually the results of the monthly inspections.*

**July 18, 2007** – Received Excel spreadsheet from Permittee indicating emission source/control device arrangements and potential emissions for CAM applicability.

**August 31, 2007** – Permittee formerly asked that the portion of the renewal/modification application dealing with the installation of three Sigma mixers (**ID Nos. ES-1J.1 through ES-1J.3**) be processed in a separate action. Permit application **1200028.07A** was created in response.

**November 30, 2007** – Permit **03287T26** issued as a minor modification for the items noted above (see Section I of this Document for items already processed).

**February 25, 2008** – Permit application **1200028.08A** received as an administrative amendment to incorporate modeled emission rates for benzene into permit. Application was consolidated into renewal application for processing.

**March 25, 2008** – Received memo from Mark Yoder of DAQ, AQAB in reference to benzene modeling. He states “the modeling analysis adequately demonstrates compliance with the acceptable ambient level (AAL) for benzene on a source-by-source basis.” He also points out that the maximum annual benzene concentration was 14% of the AAL.

**July 1, 2008** – SGL submits facility-wide worst case modeling for hydrogen sulfide and benzene. This modeling demonstration was updated via a **July 15, 2008** submittal.

**July 23, 2008** – Received memo from Tom Anderson of DAQ, AQAB in reference to hydrogen sulfide and benzene modeling. He states “the modeling adequately demonstrates compliance, on a facility-wide basis, for both toxics.” The maximum impacts for benzene was 22% of the annual emission limit and 72% of the 24-hour emission limit for hydrogen sulfide.

**September 23, 2008** – DRAFT permit sent to Permittee and Regional Office for comment prior to public notice and EPA review.

**October 10, 2008** – Permit application **1200028.08B** was received as a Notice of Intent to Construct for the addition of a new porous carbon process at the facility. The Notice was approved and the Permittee was allowed to begin construction of the equipment prior to the submittal of a complete permit application.

**October 20, 2008** – Permit application **1200028.08C** was received for the construction and operation of the new porous carbon process. Application was assigned to Judy Lee for processing.

**January 23, 2009** – Permit **03287T27** was issued for the construction and operation of the new porous carbon process.

**May 6, 2009** – Received Permittee's comments on DRAFT Title V renewal as sent in September 2008. The following is a summary of comments and DAQ's responses (italics):

1. For all references to **ES-1B** throughout the permit, the system #2 west cooler has been relocated to be utilized as the rotary cooler. *Agree; all references to sources (ID No. 1B-1h-02S1WC) will be removed from the permit and replaced with reference to one North Cooler (ID No. 1B-1h-02S1NC) per the Permittee's request.*
2. The Sigma Mixers (**ID Nos. ES-1J**) are not connected to **CD-02-DFT3-36**, but are routed to **CD-1B-02-ESP**. *Agree; reference to control device (ID No. CD-02-DFT3-36) for these sources will be removed. In addition, Brendan Davey of the ARO has noted in his latest inspection report that each of these three mixers vent to an internally vented bagfilter prior to the ESP. This will be noted in the equipment description.*
3. For emission source (**ID No. ES-5A**), we are proposing to specifically list the equipment due to the fact that the other pieces of equipment are specifically named. The miscellaneous equipment is actually located in the Salvage Department – Building 25, and routed to **CD-5A-DC2324**. *Agree; permit will be modified to specify the sources making up the currently listed "Miscellaneous graphite machining operations" (ID No. ES-5A-MISC) per the submitted equipment list.*
4. Calculations have been completed to show that potential nickel emissions are below the TPER, therefore Section 2.2 A.3.d can be omitted from the renewed permit with no further analysis required. *A follow-up conference call was made on November 3, 2009 to discuss the results of the nickel analysis. The Permittee provided packing material shipment logs indicating nickel content of the material. This was compared to material analysis of spent material. The numbers indicate only a slight difference. This limited data does not refute the previous DAQ and SGL determinations that nickel is not volatilized and emitted but is "trapped" in the remaining spent packing media. However, as nickel was previously a triggered toxic air pollutant (R23) and is not expected to be emitted in quantities above the toxic permit emission rate (TPER), DAQ feels that the renewed permit should include both nickel metal and soluble nickel TPERs in the renewed permit. These limits have been added as recommended by the ARO in its December 31, 2009 email.*
5. CAM clarification language has been submitted for ESP operation. *Agree; permit will be modified to add the clarified CAM language.*
6. The recordkeeping and reporting requirements of Section 2.2 A.2 should be removed from the draft permit because the Permittee has demonstrated that it cannot exceed the AALs for either hydrogen sulfide or benzene through worst case dispersion modeling. As such, it is not appropriate to require monitoring/recordkeeping/reporting for this permit condition. A statement to this effect was presented as an alternative. However, if DAQ insists that a minimum of MRR is required in the permit, the Permittee has submitted alternative MRR language as a starting point of discussions. *Agree; permit has been modified to remove MRR for modeled emission rates.*

7. Section 2.2 E should be removed from the draft permit because the Permittee has determined that the use of LPG as an alternative fuel was not practicable. The facility is not equipped to utilize LPG as a back-up fuel and thus the condition can be removed. *Agree; Section will be removed as requested.*
8. We understand that the provisions from the recent Porous Carbon Process permit modification are to be added to this renewed permit. *No action necessary. T27 language will be added to draft permit prior to public notice and EPA review.*
9. We understand that the current DAQ policy for CAM applicability is the use of one indicator per control device type. We suggest the use of indicator lights on all ESPs and pressure drop reading for all dust collectors. *Agree; CAM will be modified per current DAQ permitting policy regarding number of indicators.*

**Date, 2010** – DRAFT sent to 30-day public notice and 45-day EPA review prior to issuance.

#### IV. Permit Modifications/Changes and ESM Discussion

The following table describes the modifications to the current permit as part of the renewal process.

Page(s)	Section	Description of Change(s)
Attachment	Insignificant activities	-edited equipment descriptions per current ESM guidelines
Cover	-	-amended all dates and permit revision numbers
All	Header	-amended permit revision number
3-7	Equipment table	-edited equipment descriptions per current ESM guidelines -added and removed equipment per permit application as requested -removed references to LPG firing -corrected control device orientations where needed
8	2.1 A 2.1 A (table)	-edited applicable equipment list -clarified 2D .0515 emission limits/standards -added reference to CAM applicability
9	2.1 A.1.a 2.1 A.1.b	-added ID numbers and updated shell language -updated shell language
9-10	2.1 A.1.c	-added ID numbers
10	2.1 A.1.d 2.1 A.2.a 2.1 A.2.b	-updated shell language -added ID numbers -updated shell language
10-11	2.1 A.2.c	-added ID numbers and updated shell language
11	2.1 A.2.d 2.1 B 2.1 B (table)	-updated shell language -edited applicable equipment list -clarified 2D .0515 emission limits/standards -added ID numbers and references to CAM and NC air toxics
12	2.1 B.1.a 2.1 B.1.b 2.1 B.1.c 2.1 B.1.d	-added ID numbers and updated shell language -updated shell language -added ID numbers and updated shell language -updated shell language
13	2.1 B.2.a 2.1 B.2.b 2.1 B.2.c 2.1 B.2.d	-added ID numbers -updated shell language -added ID numbers and updated shell language -updated shell language

<b>Page(s)</b>	<b>Section</b>	<b>Description of Change(s)</b>
14	2.1 C 2.1 C (table)  2.1 C.1.a 2.1 C.1.b	-edited applicable equipment list -clarified 2D .0515 emission limits/standards -added reference to NC air toxics -added ID numbers and updated shell language -updated shell language
14-15	2.1 C.1.c	-added ID numbers and updated shell language
15	2.1 C.1.d 2.1 C.2.a 2.1 C.2.b 2.1 C.2.c 2.1 C.3.a 2.1 C.3.b	-updated shell language -added ID numbers -updated shell language -added ID numbers and updated shell language -added ID numbers -updated shell language
16	2.1 C.3.c 2.1 C.3.d 2.1 D 2.1 D (table)	-added ID numbers and updated shell language -updated shell language -edited applicable equipment list -clarified 2D .0515 emission limits/standards
17	2.1 D.1.a 2.1 D.1.b 2.1 D.1.c 2.1 D.1.d 2.1 D.2.a 2.1 D.2.b	-added ID numbers and updated shell language -updated shell language -updated shell language -added "no reporting" language -added ID numbers -updated shell language
17-18	2.1 D.2.c	-added ID numbers and updated shell language
18	2.1 D.2.d 2.1 E 2.1 E (table)	-updated shell language -edited applicable equipment list -clarified 2D .0515 emission limits/standards -added reference to CAM applicability
19	2.1 E.1.a 2.1 E.1.b 2.1 E.1.c 2.1 E.1.d 2.1 E.1.e	-updated shell language -updated shell language -updated shell language -updated shell language -updated shell language
20	2.1 E.2.b 2.1 E.2.c 2.1 E.2.d	-updated shell language -updated shell language -updated shell language
21	2.1 F (table)  2.1 F.1.a	-clarified 2D .0515 emission limits/standards -added reference to CAM applicability -updated shell language
22	2.1 F.1.b 2.1 F.1.d 2.1 F.1.e 2.1 F.1.f	-updated shell language -updated shell language -updated shell language -updated shell language
24	2.1 G 2.1 G (table)  2.1 G.1.a 2.1 G.1.b	-edited applicable equipment list -clarified 2D .0515 emission limits/standards -added reference to CAM applicability -added ID numbers and updated shell language -updated shell language

Page(s)	Section	Description of Change(s)
25	2.1 G.1.c 2.1 G.1.d 2.1 G.1.e	-added ID numbers and updated shell language -moved operating restriction to this Section from another -updated shell language
26	2.1 G.2.c 2.1 G.2.d 2.1 G.2.e	-updated shell language -added ID numbers and updated shell language -updated shell language
28	2.1 H (table)  2.1 H.1.a 2.1 H.1.b	-clarified 2D .0515 emission limits/standards -added reference to CAM applicability -added ID numbers and updated shell language -updated shell language
28-29	2.1 H.1.c	-added ID numbers
29	2.1 H.1.d	-updated shell language
30	2.1 H.2.c 2.1 H.2.d 2.1 H.2.e	-updated shell language -updated shell language -updated shell language
31	2.1 I 2.1 I (table)  2.1 I.1.a	-edited applicable equipment list -clarified 2D .0515 emission limits/standards and added ID numbers -added ID numbers and updated shell language
32	2.1 I.1.b 2.1 I.1.c 2.1 I.1.d 2.1 I.2.a 2.1 I.2.b	-updated shell language -added ID numbers and updated shell language -updated shell language -added ID numbers -updated shell language
33	2.1 I.2.c 2.1 I.3.b 2.1 I.3.c 2.1 I.3.d 2.1 I.3.e	-added ID numbers and updated shell language -added ID numbers -updated shell language -added ID numbers and updated shell language -updated shell language
34	2.1 J 2.1 J (table)  2.1 J.1.a 2.1 J.1.b	-edited applicable equipment list -clarified 2D .0515 emission limits/standards -added reference to NC air toxics requirements -added ID numbers and updated shell language -updated shell language
35	2.1 J.1.c 2.1 J.1.d 2.1 J.2.a 2.1 J.2.b 2.1 J.2.c	-added ID numbers and updated shell language -updated shell language -added ID numbers -updated shell language -added ID numbers and updated shell language
36	2.1 J.3.a 2.1 J.3.b 2.1 J.3.c 2.1 J.3.d	-added ID numbers -updated shell language -added ID numbers and updated shell language -updated shell language
37	2.1 K 2.1 K (table)	-edited applicable equipment list -clarified 2D .0515 emission limits/standards -added reference to CAM applicability

<b>Page(s)</b>	<b>Section</b>	<b>Description of Change(s)</b>
38	2.1 K.1.a 2.1 K.1.b 2.1 K.1.c 2.1 K.1.d	-added ID numbers and updated shell language -updated shell language -added ID numbers -updated shell language
39	2.1 K.2.a 2.1 K.2.b 2.1 K.2.c 2.1 K.2.d	-added ID numbers -updated shell language -added ID numbers and updated shell language -updated shell language
40	2.1 L 2.1 L (table) 2.1 L.1.a 2.1 L.1.b 2.1 L.1.c 2.1 L.1.d	-edited applicable equipment list -clarified 2D .0515 emission limits/standards -added ID numbers and updated shell language -updated shell language -updated shell language -added “no reporting” language
41	2.1 L.2.a 2.1 L.2.b 2.1 L.2.c 2.1 L.2.d	-added ID numbers -updated shell language -added ID numbers and updated shell language -updated shell language
42	2.1 M 2.1 M (table)  2.1 M.1.a 2.1 M.1.b	-edited applicable equipment list -clarified 2D .0515 emission limits/standards -added reference to CAM applicability -added ID numbers and updated shell language -updated shell language
43	2.1 M.1.c 2.1 M.1.d 2.1 M.2.b	-added ID numbers -updated shell language -updated shell language
44	2.1 M.2.c 2.1 M.2.d 2.1 N 2.1 N (table)	-updated shell language -updated shell language -edited applicable equipment list -clarified 2D .0515 emission limits/standards -added reference to CAM applicability
45	2.1 N.1.a 2.1 N.1.b 2.1 N.1.c 2.1 N.1.d	-added ID numbers and updated shell language -updated shell language -added ID numbers and updated shell language -updated shell language
46	2.1 N.2.b 2.1 N.2.c 2.1 N.2.d	-updated shell language -updated shell language -updated shell language
47	2.1 O 2.1 O.1.c	-edited applicable equipment list -updated shell language
48	2.1 O.2.b 2.1 O.2.c 2.1 O.2.d	-updated shell language -updated shell language -updated shell language
49	2.1 P 2.1 P (table) 2.1 P.1.a 2.1 P.1.b	-edited applicable equipment list -clarified 2D .0515 emission limits/standards -added ID numbers and updated shell language -updated shell language
49-50	2.1 P.1.c	-added ID numbers

Page(s)	Section	Description of Change(s)
50	2.1 P.1.d 2.1 P.2.a 2.1 P.2.b	-updated shell language -added ID numbers -updated shell language
50-51	2.1 P.2.c	-added ID numbers and updated shell language
51	2.1 P.2.d 2.1 Q 2.1 Q.1.a 2.1 Q.1.b	-updated shell language -edited applicable equipment list -corrected applicable fuel types -corrected applicable fuel types
52	2.1 Q.1.c 2.1 Q.1.d 2.1 Q.2.a 2.1 Q.2.b 2.1 Q.2.c 2.1 Q.3.b 2.1 Q.3.c 2.1 Q.4	-added ID numbers and updated shell language -corrected applicable fuel types -added ID numbers -updated shell language -added ID numbers and updated shell language -updated shell language -added ID numbers and updated shell language -corrected rule title
53	2.2 A.2	-added facility-wide modeled emission rates for worst-case stack for hydrogen sulfide and benzene
54	2.2 A.3	-added TPER for nickel metal
55	2.2 C 2.2 C.1.a	-edited applicable equipment list -added ID numbers
56	2.2 C.1.b 2.2 D 2.2 D.1.b	-modified quarterly reporting to semi-annual -edited applicable equipment list -modified quarterly reporting to semi-annual
57-58	2.2 E	-added CAM requirements for ESP
58-61	2.2 F	-added CAM requirements for applicable fabric filters
61	2.3 A	-updated shell language
62-72	General Conditions	-updated shell conditions (v3.1)

The following table indicates the modifications to ESM as a result of this permit renewal:

Current Description	Change resulting from permit renewal
NA	<i>One vibratory mold press (ID No. 1K) with shrouded conveyor from existing mixers with associated electrostatic precipitator (ID No. CD-1B-02-ESP)</i>
NA	<i>One steel shot blast electrode cleaning operation (Building 47; ID No. ES-2M) with associated fabric filter (ID No. CD-2B-DC427)</i>
NA	<i>Super sack unloading (ID No. ES-5M) with associated fabric filter (ID No. CD-5A-DC2324)</i>
NA	<i>Ten electric induction graphitizing furnaces with nitrogen purging systems (ID Nos. I-IF01.1 through I-IF01.5 and I-IF02.1 through I-IF02.5)</i>

## V. Regulatory Review

The facility is currently subject to the following regulations:

15A NCAC 2D .0503, Particulates from Fuel Burning Indirect Heat Exchangers  
15A NCAC 2D .0512, Particulates from Miscellaneous Wood Products Finishing Plants  
15A NCAC 2D .0515, Particulates from Miscellaneous Industrial Processes  
15A NCAC 2D .0516, Sulfur Dioxide Emissions from Combustion Sources  
15A NCAC 2D .0521, Control of Visible Emissions  
15A NCAC 2D .0524, New Source Performance Standards  
15A NCAC 2D .0541, Control of Emissions from Abrasive Blasting  
15A NCAC 2D .0949, Storage of Miscellaneous Volatile Organic Compounds  
15A NCAC 2D .0958, Work Practices for Sources of Volatile Organic Compounds  
15A NCAC 2D .1100, Control of Toxic Air Pollutants  
15A NCAC 2D .1806, Control and Prohibition of Odorous Emissions  
15A NCAC 2Q .0317, Avoidance Conditions  
15A NCAC 2Q .0711, Emission Rates Requiring a Permit

A regulatory review for the existing sources will not be included in this document. However, as part of this permit renewal, the following regulation(s) have been added to the permit:

15A NCAC 2D .0614, Compliance Assurance Monitoring

Also as part of the renewed permit, the Permittee requested the addition of new equipment. The following details the equipment and their associated regulations.

**Induction furnaces (ID Nos. I-IF01.1 through I-IF01.5 and I-IF02.1 through I-IF02.5).** Ten electric furnaces being brought from a sister facility in New York. Each will operate under slightly positive pressure by using a nitrogen purge system. Each furnace has a 3,000 to 4,500 pound capacity, and a ten-day cycle time (fire for approximately 35 hours and seven day cool down). Only one furnace per bank of five will be fired at a time, and therefore result in a maximum throughput of 22,500 pounds per 10 days (or 2250 pounds per day). These furnaces will be used for products that have already gone through the normal baking procedures, but require a higher degree of purity. Therefore, emissions from the induction furnaces will contain trace amounts of sulfur and iron, but the contaminants will condense/solidify on the lid of the furnace or in the inside of the chimney. These solids will be removed during routine maintenance of the equipment. As such the trace emissions expected from the furnaces will be less than 5 tons per year. As such the equipment is considered as insignificant per 15A NCAC 2Q .0503(8) and not subject to any regulatory requirements.

**Steel shot blast cleaning (ID No. ES-2M).** Will be co-located with the existing shot blast cleaning operation and controlled by an existing fabric filter. Although a second shot blast cleaning operation will be installed, only one shot blast cleaning machine will be operated at any one time. This source is subject to:

15A NCAC 2D .0515. The Permittee calculates the allowable emission rate as follows:

$$E = (55 - P^{11}) - 40 = \mathbf{57.6 \text{ lbs/hour}}$$
 (at a P = 183.28 tons/hour)

The estimated potential controlled emissions from this source are based on grain loading as follows:

$$0.03 \text{ grains/acf} \times 11\text{b}/7000 \text{ grains} \times 10,500 \text{ acf/min} \times 60 \text{ min/hr} = \mathbf{2.7 \text{ lbs/hr}}$$

Therefore, compliance with the allowable emission limit is expected.

15A NCAC 2D .0521. The source is subject to a 20% opacity standard. A properly operated and maintained fabric filter should have no problem meeting this standard. To ensure compliance, the Permittee is required to perform weekly observations of the source and record the results in a logbook. Summary reports of all monitoring and recordkeeping are required to be submitted semi-annually.

**Super sack Sagger unloading station (ID No. ES-5M)**. Source is used to unload 2,000-pound bags of graphite that is generated during graphite finishing operations or other on-site processes. These super sacks are suspended over a large hopper to deposit their contents. The material is transferred from the hopper to an elevator via a screw conveyor. From the elevator, the material is transferred into a tanker truck for disposal or resale. This source is subject to:

15A NCAC 2D .0515. The Permittee calculates the allowable emission rate as follows:

$$E = 4.10 \times P^{0.67} = \mathbf{13.62 \text{ lbs/hour}} \text{ (at a } P = 6 \text{ tons/hour)}$$

The estimated potential controlled emissions from this source are based on grain loading as follows:

$$0.03 \text{ grains/acf} \times 11\text{b}/7000 \text{ grains} \times 30,000 \text{ acf/min} \times 60 \text{ min/hr} = \mathbf{7.71 \text{ lbs/hr}}$$

Therefore, compliance with the allowable emission limit is expected.

15A NCAC 2D .0521. The source is subject to a 20% opacity standard. A properly operated and maintained fabric filter should have no problem meeting this standard. To ensure compliance, the Permittee is required to perform weekly observations of the source and record the results in a logbook. Summary reports of all monitoring and recordkeeping are required to be submitted semi-annually.

**Vibratory mold press (ID No. ES-1K)**. Source will be located with existing System #1 equipment and will be used to produce disk-shaped or bar-shaped carbon products. Coke and coal tar pitch will go through System #1 weighing and mixing, will bypass cooling, and will enter the vibratory mold press via a shrouded belt conveyor. This source is subject to:

15A NCAC 2Q .0710. The mold press uses heated mix from an already permitted process, therefore, emissions are only associated with the transfer of the mix with the shrouded conveyor. Uncontrolled HAP emissions were estimated from ratioing the pounds per hour of pollutant process rate during the 1992 stack test and a maximum process throughput of 3332 pounds per hour. HAP emissions are estimated as:

- Methylene chloride – 0.0000744 pounds per hour
- Carbon disulfide – 0.0000288 pounds per hour
- Methyl ethyl ketone – 0.00000599 pounds per hour
- Benzene – 0.000365 pounds per hour
- Toluene – 0.00182 pounds per hour
- Xylene – 0.00239 pounds per hour
- Trichlorofluoromethane – 0.0000144 pounds per hour

These new HAP emissions were then added to the estimated facility-wide numbers for comparison with the TPERs. In all cases, except benzene, the total new facility-wide numbers remained below the TPER. Benzene is required to be modeled for facility wide for inclusion in the list of pollutants with modeled emission rates.

## VI. NSPS, NESHAPS/MACT, PSD, 112(r), CAM

**NSPS** – The facility operates one natural gas-fired plant boiler (**ID No. ES-PB-233**) subject to 40 CFR 60, Subpart Dc. The Permittee is required to keep monthly records of the amount of natural gas fired in the boiler. Continued compliance is expected. This permit renewal does not affect this status.

**NESHAPS/MACT** – The facility is classified as a Title III minor facility; therefore, it is not subject to any MACT standards. This permit renewal does not affect this status.

In addition, the facility was compared to the current list of promulgated area source GACTs. At this time, none are applicable to this facility.

**PSD** – The facility currently operates under two PSD avoidance conditions.

1. This first limits PM<sub>10</sub> emissions from the twelve electric lengthwise graphitizing (LWG) furnaces (**ID Nos. ES-5E.1 through ES-5E.12**) with nitrogen purging system, packing media recycling process line (**ID No. ES-5I**), and stock machining and conveying line (**ID No. ES-5J**) to less than 15 tons per year. To ensure compliance with this limit the Permittee is required to limit total usage of petroleum coke to less than 11,400,000 pounds per year and limit the number of 80-ton petroleum coke batches processed per year to less than 150. The Permittee is also required to perform recordkeeping and reporting. As part of the renewal of this permit, the reporting requirement has been amended from quarterly to semi-annually. The following language has been inserted in the permit as Section 2.2 C.1:

### ***1. 15A NCAC 2Q .0317: AVOIDANCE CONDITIONS for 15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION***

- a. *To comply with this permit and avoid the applicability of 15A NCAC 2D .0530, "Prevention of Significant Deterioration," as requested by the Permittee, PM<sub>10</sub> emissions from these sources (**ID Nos. ES-5E.1 through ES-5E.12, ES-5I, and ES-5J**) combined, shall be less than 15 tons per consecutive 12-month period.*
  - i. *To ensure enforceability of this limit the following restrictions shall apply:*
    - A. *total usage of petroleum coke shall not exceed 11,400,000 pounds per consecutive 12-month period, and*
    - B. *total monthly 80-ton batches of petroleum coke processed by this source (**ID No. ES-5I**) shall not exceed 150.*
- b. *The Permittee shall submit a summary report postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain the following:*
  - i. *the monthly PM<sub>10</sub> emissions for the previous 17 months. The emissions must be calculated for each of the 12-month periods over the previous 17 months,*
  - ii. *the total weight in pounds of petroleum coke (including packing media) processed in these sources (**ID Nos. ES-5E.1 through ES-5E.12**), and*
  - iii. *the total weight in pounds of petroleum coke processed in this source (**ID No. ES-5I**). All instances of deviations from the requirements of this permit must be clearly identified.*

2. The second PSD avoidance condition limits sulfur dioxide emissions from the twelve electric lengthwise graphitizing (LWG) furnaces (**ID Nos. ES-5E.1 through ES-5E.12**) with nitrogen purging system to less than 459.4 tons per year. As part of this permit renewal, the reporting

requirement has been modified from quarterly to semi-annually. The following language has been inserted in the permit as Section 2.2 D.1:

**1. 15A NCAC 2Q .0317: AVOIDANCE CONDITIONS  
for 15A NCAC 2D .0530: PREVENTION OF SIGNIFICANT DETERIORATION**

- a. *To comply with this permit and avoid the applicability of 15A NCAC 2D .0530, "Prevention of Significant Deterioration," as requested by the Permittee, sulfur dioxide emissions from these sources (ID Nos. ES-5E.1 through ES-5E.12) shall be less than 459.4 tons per consecutive 12-month period.*
- b. *The Permittee shall submit a summary report postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. The report shall contain the following:*
  - i. *the monthly sulfur dioxide emissions from these sources (ID Nos. ES-5E.1 through ES-5E.12) for the previous 17 months. The emissions must be calculated for each of the 12-month periods over the previous 17 months.*

*All instances of deviations from the requirements of this permit must be clearly identified.*

**112(r)** – The facility is not subject to Section 112(r) of the Clean Air Act requirements because it does not store any of the regulated substances in quantities above the thresholds in the Rule. This permit renewal does not affect this status.

**CAM** – 40 CFR 64 requires that a continuous compliance assurance monitoring plan be developed for all equipment located at a major facility, that have pre-controlled emissions above the major source threshold, and use a control device to meet an applicable standard. The facility currently has the following emission source control device relationships:

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
<b>Extrusion Department - Building 2</b>			
ES-1A.1 ES-1A.2	Two extrusion fines milling operations utilizing Raymond mills (Nos. RM14 and RM15), respectively	CD-1A-DC2186	One fabric filter (1,588 square feet of filter area)
ES-1B	Three extrusion mix coolers: -No. 1h-02S1SC (System #1 South Cooler) -No. 1h-02S2SC (System #2 South Cooler) -No. 1h-02S1NC (System #1 North Cooler)  One molding operation (No. 1h15AS2EH)	CD-1B-02-ESP	One electrostatic precipitator (4,877 square feet of collecting plate area)
ES-1C	Building #2 materials handling operations	CD-1C-DC225	One fabric filter (2,120 square feet of filter area)

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-1D	System #2 Milling Process/Material Storage consisting of:  -Raw coke handling operations (No. 1F) -Two bin drawoffs (Nos. BD201 and BD202) -One conveyor screw (No. CS257) -One double roll crusher (No. DRC263) -One hammermill (No. HM260) -One Rotex elevator (No. RX261) -One Rotex screen (No. RX262) -The exhausts from five weigh scale collection sources (Nos. SC201 through SC205) -Five weigh car collection sources (Nos. WC201 through WC205)	CD-1D-DC254	One fabric filter (6,426 square feet of filter area)
ES-1E.1 ES-1E.2 ES-1E.3 ES-1E.4 ES-1E.5	System #1 extrusion mixer System #2 extrusion mixer System #1 milling operations System #1 weigh car System #1 scale bin exhausts	CD-02-DFT3-36	One cartridge-type fabric filter (9,144 square feet of filter area)
ES-1G	Scrap stock crushing operation	CD-1G-DC220	One fabric filter (3,848 square feet of filter area)
ES-1H.1 ES-1H.2	Two pitch storage tanks (100,000 gallons capacity, each) and associated pitch loading operations	CD-1H-DR290A	One natural gas-fired thermal oxidizer (1.6 million Btu per hour maximum heat input capacity)
ES-1J.1 through ES-1J.3	Three 1000-pound Sigma mixers (2,000 pounds per hour total maximum design process weight rate combined) with associated internally vented fabric filters, one each	CD-1B-02-ESP	One electrostatic precipitator (4,877 square feet of collecting plate area)
ES-1K	One vibratory mold press with shrouded conveyor from existing mixers	CD-1B-02-ESP	One electrostatic precipitator (4,877 square feet of collecting plate area)
ES-1L	One Sigma Blade Mixer One rotary cooler	CD-1B-02-ESP	One electrostatic precipitator (4,877 square feet of collecting plate area)
ES-1M-A	Porous Carbon Processing – Primary Milling (100 HP Mill) and associated product collector and vibrating screener	CD-1M-APC  CD-1M-AFR	One fabric filter (1,104 square feet of filter area)  One fabric filter (458 square feet of filter area)
ES-1M-B	Porous Carbon Processing – Secondary Milling (20 HP Mill) and associated product collector and vibrating screener	CD-1M-BPC  CD-1M-BFR	One fabric filter (372 square feet of filter area)  One fabric filter (458 square feet of filter area)
<b>Baking Department</b>			
ES-2A	One steel shot blast electrode cleaning machine (Building 56)	CD-2A-DC-5624	One fabric filter (1,260 square feet of filter area)
ES-2B	One small-round cleaning operation and media preparation serving baking furnace Nos. 10 through 19 (Building 13)	CD-2B-DC427	One fabric filter (3,090 square feet of filter area)

<b>Emission Source ID No.</b>	<b>Emission Source Description</b>	<b>Control Device ID No.</b>	<b>Control Device Description</b>
ES-2C ES-2M	Two steel shot blast electrode cleaning operations (Building 47)	CD-2C-DC425	One cartridge-type fabric filter (4,944 square feet of filter area)
ES-2D-50 through ES-2D-52	Three car bottom-type natural gas-fired carbon electrode baking/rebaking furnaces (twelve 1.69 million Btu per hour maximum heat input capacity burners each)	CD-2D-55F	One natural gas-fired thermal oxidizer (6.5 million Btu per hour maximum heat input capacity)
ES-2E-57F61  ES-2E-57F62 through ES-2E-57F65  ES-2E-57F66 and ES-2E-57F67	One natural gas-fired pit-type baking/rebaking furnace (twenty-four 0.5 million Btu per hour maximum heat input capacity and six 0.9 million Btu per hour maximum heat input capacity burners)  Four natural gas-fired pit-type carbon electrode baking furnaces (six 2.7 million Btu per hour maximum heat input capacity and three 1.03 million Btu per hour maximum heat input capacity burners each located in Building 57)  Two natural gas-fired pit-type carbon electrode baking/rebaking furnaces (nine 1.50 million Btu per hour maximum heat input capacity and three 0.33 million Btu per hour maximum heat input capacity burners each located in Building 5)	CD-2E-57F61 CD-2E-57F62 CD-2E-57F63 CD-2E-57F64 CD-2E-57F65 CD-2E-57F66 CD-2E-57F67	Seven natural gas-fired thermal oxidizers (5.4, 3.1, 3.1, 3.1, 5.4, 4.9, and 4.9 million Btu per hour maximum heat input capacity, respectively)
ES-2F	Furnace packing media recycling processes (Building 55)	CD-2F-DC5524	One fabric filter (6,500 square feet of filter area)
ES-2H-10 through ES-2H-19	Ten natural gas-fired baking furnaces (16.38 million Btu per hour maximum heat input capacity, each)	CD-2H-04E4	One direct-flame natural gas-fired thermal oxidizer (16.38 million Btu per hour maximum heat input capacity)
ES-2I	Pit furnace Sagger handling operations	CD-2I-DC05	One cartridge-type fabric filter (12,192 square feet of filter area)
ES-2J01 ES-2J02	Two sand receiving silos	CD-BK-SR01 CD-BK-SR02	Two fabric filters (278 square feet of filter area, each)
ES-2K	Rebaked stock cleaning operation	CD-2D-DC01	One cartridge-type fabric filter (8,128 square feet of filter area)
ES-2L-DC05	Building No. 5 Sagger can unloading station	CD-2F-DC5524	One fabric filter (6,500 square feet of filter area)
<b>Pitch Impregnation Department</b>			
ES-4A-1 through ES-4A-4  ES-4A-5 through ES-4A-7	Four natural gas-fired pitch impregnation preheaters (1.69 million Btu per hour maximum heat input capacity, each)  Three pitch impregnation tanks	CD-4A	One natural gas-fired thermal oxidizer (3.14 million Btu per hour maximum heat input capacity)
<b>Graphite Department</b>			

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-5A	Graphite Department Equipment consisting of: -By-products material bagging machine (No. BYP) -One small band saw (No. C16143) -One sample grinder (No. C2302) -Rail hoods (No. C2304) -One large cleaning machine (No. C2315) -One bucket elevator (No. C2330) -One chip bin hood (No. C2331) -One "L" core drill (No. C2346) -One "T" core drill (No. C2347) -One large band saw (No. C2348) -Miscellaneous graphite machining operations (No. MISC) consisting of: -Rahn-Mayer Lathe #2508 (No. 1) -Sirco PA36 Lathe #2574 (No. 2) -Beco Lathe (No. 3) -Gisholt Turret Lathe #2512 (No. 4) -20" American Tracer Lathe #2533 (No. 5) -Gisholt Turret Lathe #2510 (No. 6) -Libby Lathe #2525 (No. 7) -20" American Lathe #2534 (No. 8) -Bullard Mill #2526 (No. 9) -Beyer Drill-Matic (No. 10) -Morris Radial Drill (No. 11) -Cincinnati Milling Machine #2560 (No. 12) -Band Saw (No. 13) -Do-All Band Saw #2506 (No. 14) -Do-All Band Saw (No. 15) -Laidlaw Band Saw #2561 (No. 16) -Mazak Lathe #2575 (No. 17) -Railcar loading operation (No. RC)	CD-5A-DC2324	One fabric filter (10,260 square feet of filter area)
ES-5M	Super sack unloading		
ES-5I	Packing media recycling process line	CD-5I-DC2474	One fabric filter (11,016 square feet of filter area)
ES-5J	Stock machining and conveying line	CD-5J-DC5803	One fabric filter (813 square feet of filter area)
ES-5L	LWG media crusher system (Building 10)	CD-5L-DC101	One fabric filter (1,829 square feet of filter area)
D-406	LWG media storage bin	CD-5M-BV101	One fabric filter (400 square feet of filter area, Building 24)
<b>Finishing Department - Building 11</b>			
ES-6A	Graphite finishing operation	CD-6A-DC1164a	One simple cyclone
		CD-6A-DC1164b	One fabric filter (8,652 square feet of filter area)
ES-6B	Carpentry shop woodworking operation	CD-6B	One fabric filter (200 square feet of filter area)
<b>Salvage Department - Building 25</b>			
ES-7B.1	G&L Vertical Boring Mill	CD-7B-DC2502	One fabric filter (1,056 square feet of filter area)
ES-7B.2	Hill-Acme Grinder (No. 2547)		

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-7C	Bullard Vertical Boring Mill (Building 25C)	CD-7C-DC2578	One fabric filter (170 square feet of filter area)

The following table indicates the source-specific requirements for each piece of equipment and its CAM applicability:

Emission Source ID No.	Control Device ID No.	Applicable Emission Standard (Pollutant)	Estimated Potential Uncontrolled Emissions (tpy)	CAM Required?
ES-1A.1	CD-1A-DC2186	2D .0515 (PM)	9.37	No
ES-1A.2		2D .0521 (Opacity)	NA	NA
<b>ES-1B</b> <b>ES-1J</b> <b>ES-1K</b> <b>ES-1L</b>	<b>CD-1B-02-ESP</b>	<b>2D .0515 (PM)</b> 2D .0521 (Opacity)	<b>161.36</b> NA	<b>Yes</b> NA
ES-1C	CD-1C-DC225	2D .0515 (PM) 2D .0521 (Opacity)	99.73 NA	No NA
<b>ES-1D</b>	<b>CD-1D-DC254</b>	<b>2D .0515 (PM)</b> 2D .0521 (Opacity)	<b>117.47</b> NA	<b>Yes</b> NA
<b>ES-1E</b>	<b>CD-02-DFT3-36</b>	<b>2D .0515 (PM)</b> 2D .0521 (Opacity)	<b>105.73</b> NA	<b>Yes</b> NA
ES-1G	CD-1G-DC220	2D .0515 (PM) 2D .0521 (Opacity)	97.51 NA	No NA
ES-1H	CD-1H-DR290A	2D .0515 (PM) 2D .0516 (SO <sub>2</sub> ) 2D .0521 (Opacity) 2D .0949 (VOCs)	NA NA NA NA	No, Control device not for PM No, Control device not for SO <sub>2</sub> NA NA
<b>ES-1M-A</b> <b>ES-1M-B</b>	<b>CD-1M-APC</b> <b>CD-1M-AFR</b> <b>CD-1M-BPC</b> <b>CD-1M-BFR</b>	2D .0515 (PM) 2D .0521 (Opacity)	<b>3310.7*</b> NA	<b>Yes</b> NA
<b>ES-2A</b>	<b>CD-2A-DC-5624</b>	<b>2D .0515 (PM)</b> 2D .0521 (Opacity) 2D .0541 (Fugitives)	<b>227.28</b> NA NA	<b>Yes</b> NA NA
ES-2B	CD-2B-DC427	2D .0515 (PM) 2D .0521 (Opacity)	70.26 NA	No NA
<b>ES-2C</b> <b>ES-2M</b>	<b>CD-2C-DC425</b>	<b>2D .0515 (PM)</b> 2D .0521 (Opacity) 2D .0541 (Fugitives)	<b>252.11</b> NA NA	<b>Yes</b> NA NA
ES-2D-50 through ES-2D-52	CD-2D-55F	2D .0515 (PM) 2D .0516 (SO <sub>2</sub> ) 2D .0521 (Opacity)	NA NA NA	No, Control device not for PM No, Control device not for SO <sub>2</sub> NA
ES-2E-57F61 through ES-2E-57F67	CD-2E-57F61 through CD-2E-57F67	2D .0515 (PM) 2D .0516 (SO <sub>2</sub> ) 2D .0521 (Opacity)	178.27 NA	No, Control device not for PM No, Control device not for SO <sub>2</sub> NA
<b>ES-2F</b>	<b>CD-2F-DC5524</b>	<b>2D .0515 (PM)</b> 2D .0521 (Opacity)	<b>180.28</b> NA	<b>Yes</b> NA
ES-2H-10 through ES-2H-19	CD-2H-04E4	2D .0515 (PM) 2D .0516 (SO <sub>2</sub> ) 2D .0521 (Opacity)	NA	No, Control device not for PM No, Control device not for SO <sub>2</sub> NA

Emission Source ID No.	Control Device ID No.	Applicable Emission Standard (Pollutant)	Estimated Potential Uncontrolled Emissions (tpy)	CAM Required?
ES-2I	CD-2I-DC05	2D .0515 (PM) 2D .0521 (Opacity)	119.84 NA	Yes NA
ES-2J01 ES-2J02	CD-BK-SR01 CD-BK-SR02	2D .0515 (PM) 2D .0521 (Opacity)	NA	NA
ES-2K	CD-2D-DC01	2D .0515 (PM) 2D .0521 (Opacity)	NA	NA
ES-2L- DC05	CD-2F-DC5524	2D .0515 (PM) 2D .0521 (Opacity)	NA	NA
ES-4A-1 through ES- 4A-7	CD-4A	2D .0515 (PM) 2D .0516 (SO <sub>2</sub> ) 2D .0521 (Opacity)	NA NA NA	No, Control device not for PM No, Control device not for SO <sub>2</sub> NA
ES-5A ES-5M	CD-5A-DC2324	2D .0515 (PM) 2D .0521 (Opacity)	175.38 NA	Yes NA
ES-5I	CD-5I-DC2474	2D .0515 (PM) 2D .0521 (Opacity)	183.39 NA	Yes NA
ES-5J	CD-5J-DC5803	2D .0515 (PM) 2D .0521 (Opacity)	182.08 NA	Yes NA
ES-5L	CD-5L-DC101	2D .0515 (PM) 2D .0521 (Opacity)	NA	NA
D-406	CD-5M-BV101	2D .0515 (PM) 2D .0521 (Opacity)	NA	NA
ES-6A	CD-6A-DC1164b	2D .0515 (PM) 2D .0521 (Opacity)	200.6 NA	Yes NA
ES-6B	CD-6B	2D .0512 (PM) 2D .0521 (Opacity)	11.30 NA	No NA
ES-7B.1 ES-7B.2	CD-7B-DC2502	2D .0515 (PM) 2D .0521 (Opacity)	69.94 NA	No NA
ES-7C	CD-7C-DC2578	2D .0515 (PM) 2D .0521 (Opacity)	69.94 NA	No NA

\*See Judy Lee's permit review (03287T27) for a discussion of PTE from porous carbon process (ID No. ES-1M)

Multiple source-specific requirements: The following list contains the facility-wide emission limits and/or multiple source specific emission limits:

1. 15A NCAC 2D .1806, Control and Prohibition of Odorous Emissions. Odor is not considered a CAM applicable pollutant; therefore a CAM analysis is not needed.
2. 15A NCAC 2D .0958, Work Practices for Sources of Volatile Organic Compounds. This regulation is not an emission limit but rather work practice standards for activities that use VOCs; therefore a CAM analysis is not needed.
3. 15A NCAC 2D .1100, Control of Toxic Air Pollutants and 15A NCAC 2Q .0711, Emission Rates Requiring a Permit. The facility is not a Title III major source for hazardous air pollutants; therefore CAM does not apply for those pollutants.
4. 15A NCAC 2Q .0317, Avoidance Conditions (separate limits for PM<sub>10</sub> and SO<sub>2</sub>). Multiple pieces of equipment are subject to specific emission limits for particulate matter and sulfur dioxide. In each case, the associated control equipment is not installed in order to meet the emission limit. Therefore, a CAM analysis is not needed.

As shown above, a CAM plan is needed in two cases: (1) for the collection of sources controlled by the ESP (**ID No. CD-1B-02-ESP**); and (2) the collection of sources controlled by the fabric filters (**ID Nos. CD-1D-DC254, CD-2A-DC-5624, CD-2C-DC425, CD-2F-DC5524, CD-2I-DC05, CD-5A-DC2324, CD-5I-DC2474, CD-5J-DC5803, CD-6A-DC1164, and CD-02-DFT3-36**). The following CAM plans have been included in the renewed permit as Sections 2.2 F and 2.2G, respectively:

**E. Three extrusion mix coolers:**

- (ID No. ES-1B-1h-02S1SC [System #1 South Cooler]);**
- (ID No. ES-1B-1h-02S2SC [System #2 South Cooler]); and**
- (ID No. ES-1B-1h-02S1NC [System #1 North Cooler]);**
- One molding operation (ID No. ES-1B-1h15AS2EH);**
- Three 1000-pound Sigma mixers (ID Nos. ES-1J.1 through ES-1J.3),**
- One vibratory mold press (ID No. ES-1K); and**
- One Sigma Blade Mixer and One rotary cooler (ID No. ES-1L),**  
**with associated electrostatic precipitator (ID No. CD-1B-02-ESP)**

*The above emission sources are subject to this multiple emission source limit.*

<b>Regulated Pollutant</b>	<b>Limits/Standards</b>	<b>Applicable Regulation</b>
Particulate matter	Compliance Assurance Monitoring	15A NCAC 2D .0614

**1. 15A NCAC 2D .0614: COMPLIANCE ASSURANCE MONITORING**

- a. *For the above described emission sources, as required by 40 CFR 64 and 15A NCAC 2D .0614, the Permittee shall comply with the following monitoring and recordkeeping requirements for particulate matter, including parameters to be monitored, parameter ranges, and performance criteria.*

	<b>Indicator</b>
<b>I. Indicator</b>	Indicator Lights
<b>Measurement Approach</b>	Indicator Light Operation is measured daily.
<b>II. Indicator Range</b>	An excursion is defined as a parameter outside of normal (design) specifications. The ESP is equipped with two banks of lights (one light per cell) indicating proper operation while fully illuminated or blinking. Normal operation is established as 12-15 lights per bank active at all times. An excursion is defined as having more than 3 lights per bank not illuminated. Excursions trigger an inspection, corrective action, and a recordkeeping requirement.
<b>QIP Threshold</b>	The QIP threshold is five excursions in a 6-month reporting period.

	<i>Indicator</i>
<i>III. Performance Criteria</i>	
<i>A. Data Representativeness</i>	<i>Measurements are being made at the ESP indicator light panels.</i>
<i>B. Verification of Operational Status</i>	<i>Instruments are checked daily for proper operation.</i>
<i>C. QA/QC Practices</i>	<i>Calibrate, maintain, and operate instrumentation using procedures that take into account manufacturer's specifications.</i>
<i>D. Monitoring Frequency</i>	<i>Measurements are recorded daily.</i>
<i>Data Collection Procedures</i>	<i>Recordings are manually recorded in a logbook daily.</i>
<i>Averaging Periods</i>	<i>NA</i>

**Reporting** [15A NCAC 2Q .0508(f)]

- b. *The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified including any monitoring malfunctions as defined in 64.7(c) and required in 64.9(a)(2)(ii).*

**F. System #2 Milling Process/Material Storage (ID No. ES-1D) consisting of:**

- Raw coke handling operations (No. 1F);**
- Two bin drawoffs (Nos. BD201 and BD202),**
- One conveyor screw (No. CS257),**
- One double roll crusher (No. DRC263),**
- One hammermill (No. HM260),**
- One Rotex elevator (No. RX261),**
- One Rotex screen (No. RX262),**
- The exhausts from five weigh scale collection sources (Nos. SC201 through SC205), and**
- Five weigh car collection sources (Nos. WC201 through WC205),**  
**with associated fabric filter (ID No. CD-1D-DC254)**

**System #1 and System #2 extrusion mixers (ID Nos. ES-1E.1 and ES-1E.2),**

**System #1 milling operations (ID No. ES-1E.3),**

**System #1 weigh car (ID No. ES-1E.4), and**

**System #1 scale bin exhausts (ID No. ES-1E.5)**

**with associated cartridge-type filter (ID No. CD-02-DFT3-36)**

**Primary milling (ID No. ES-1M-A) and associated fabric filters (ID No. CD-1M-APC and CD-1M-AFR)**

**Secondary milling (ID No. ES-1M-B) and associated fabric filters (ID No. CD-1M-BPC and CD-1M-BFR)**

*One steel shot blast electrode cleaning machine (ID No. ES-2A) with associated fabric filter (ID No. CD-2A-DC-5624)*

*Two steel shot blast electrode cleaning operations (ID Nos. ES-2C and ES-2M) with associated cartridge-type fabric filter (ID No. CD-2C-DC425)*

*Furnace packing media recycling processes (ID No. ES-2F) and Building No. 5 Sagger can unloading station (ID No. ES-2L-DC05) with associated fabric filter (ID No. CD-2F-DC5524)*

*Pit furnace Sagger handling operations (ID No. ES-2I) with associated cartridge-type fabric filter (ID No. CD-2I-DC05)*

*Graphite Department equipment (ID No. ES-5A) including:*

- By-products material bagging machine (No. BYP);*
- One small band saw (No. C16143);*
- One sample grinder (No. C2302);*
- Rail hoods (No. C2304);*
- One large cleaning machine (No. C2315);*
- One bucket elevator (No. C2330);*
- One chip bin hood (No. C2331);*
- One "L" core drill (No. C2346);*
- One "T" core drill (No. C2347);*
- One large band saw (No. C2348);*
- Miscellaneous graphite machining operations (No. MISC) consisting of:*
  - Rahn-Mayer Lathe #2508 (No. 1)*
  - Sirco PA36 Lathe #2574 (No. 2)*
  - Beco Lathe (No. 3)*
  - Gisholt Turret Lathe #2512 (No. 4)*
  - 20" American Tracer Lathe #2533 (No. 5)*
  - Gisholt Turret Lathe #2510 (No. 6)*
  - Libby Lathe #2525 (No. 7)*
  - 20" American Lathe #2534 (No. 8)*
  - Bullard Mill #2526 (No. 9)*
  - Beyer Drill-Matic (No. 10)*
  - Morris Radial Drill (No. 11)*
  - Cincinnati Milling Machine #2560 (No. 12)*
  - Band Saw (No. 13)*
  - Do-All Band Saw #2506 (No. 14)*
  - Do-All Band Saw (No. 15)*
  - Laidlaw Band Saw #2561 (No. 16)*
  - Mazak Lathe #2575 (No. 17); and*
- Railcar loading operation (No. RC); and*
- Super sack unloading operations (ID No. ES-5M),*
- with associated fabric filter (ID No. CD-5A-DC2324)*

*One packing media recycling process line (ID No. ES-5I) with associated fabric filter (ID No. CD-5I-DC2474)*

*One stock machining and conveying line (ID No. ES-5J) with associated fabric filter (ID No. CD-5J-DC5803)*

**Graphite finishing operation (ID No. ES-6A) with associated cyclone in series with one fabric filter (CD-6A-DC1164)**

The above emission sources are subject to this multiple emission source limit.

<b>Regulated Pollutant</b>	<b>Limits/Standards</b>	<b>Applicable Regulation</b>
Particulate matter	Compliance Assurance Monitoring	15A NCAC 2D .0614

**1. 15A NCAC 2D .0614: COMPLIANCE ASSURANCE MONITORING**

- a. For the above described emission sources, as required by 40 CFR 64 and 15A NCAC 2D .0614, the Permittee shall comply with the following monitoring and recordkeeping requirements for particulate matter, including parameters to be monitored, parameter ranges, and performance criteria.

	<b>Indicator</b>
<b>I. Indicator</b>	Pressure drop
Measurement Approach	Pressure drop across the fabric filters is measured with differential pressure gauges daily.
<b>II. Indicator Range</b>	An excursion is defined as a pressure drop other than normal*. Excursions trigger an inspection, corrective action, and a recordkeeping requirement.
QIP Threshold	None selected.
<b>III. Performance Criteria</b>	
A. Data Representativeness	Pressure taps are located at each fabric filter inlet and outlet. The gauge has a minimum accuracy of 0.5 inches of water.
B. Verification of Operational Status	NA
C. QA/QC Practices	The pressure gauge is checked daily for operation.
D. Monitoring Frequency	Pressure drop is daily.
Data Collection Procedures	Pressure gauge readings are manually recorded daily.
Averaging Periods	NA

\* "Normal" pressure drop ranges or number of indicator lights are as follows:

<b>CD-1D-DC254</b>	1.2 to 5.2 inches of water
<b>CD-02-DFT3-36</b>	4 to 8 indicator lights
<b>CD-2A-DC-5624</b>	1-5 inches of water
<b>CD-2C-DC425</b>	2.1 to 6.1 inches of water
<b>CD-2F-DC5524</b>	4.7 to 8.7 inches of water
<b>CD-2I-DC05</b>	4 to 8 indicator lights
<b>CD-5A0DC2324</b>	0.2 to 4.2 inches of water
<b>CD-5I-DC2474</b>	1 to 4.1 inches of water
<b>CD-5J-DC5803</b>	3 to 7 inches of water
<b>CD-6A-DC1164</b>	3.6 to 7.6 inches of water

**Reporting** [15A NCAC 2Q .0508(f)]

- b. *Within 30 days of startup of these sources (ID Nos. ES-1M-A and ES-1M-B), the Permittee shall submit an administrative amendment to this permit for control devices (ID Nos. CD-1M-APC, CD-1M-AFR, CD-1M-BPC and CD-1M-BFR) indicating the “normal” pressure drop ranges for each device.*
- c. *The Permittee shall submit a summary report of monitoring and recordkeeping activities postmarked on or before January 30 of each calendar year for the preceding six-month period between July and December and July 30 of each calendar year for the preceding six-month period between January and June. All instances of deviations from the requirements of this permit must be clearly identified including any monitoring malfunctions as defined in 64.7(c) and required in 64.9(a)(2)(ii).*

## VII. Facility Wide Air Toxics

15A NCAC 2D .1100 – The Permittee is currently subject to a modeled emission rate for hydrogen sulfide per 15A NCAC 2D .1100 of 15 pounds per hour for the twelve electric lengthwise graphitizing (LWG) furnaces (**ID Nos. ES-5E.1 through ES-5E.12**) with nitrogen purging system. This limit is based on a request from the Permittee with the submittal of toxics modeling as part of a permit application submitted **September 28, 2001**. That modeling indicated hydrogen sulfide emissions at 1.36 pounds per hour (7% of the AAL). The Permittee requested and was given an emission rate of 15 pounds per hour (79% of the AAL).

On **February 6, 2006**, DAQ requested that the Permittee complete facility-wide modeling for hydrogen sulfide because the AAL had changed in 2005. Per 15A NCAC 2Q .0709(e) *“upon renewal of a permit which has an AAL for a toxic air pollutant that has changed, the owner or operator of the facility shall submit an air toxics modeling evaluation showing that the new AAL will not be exceeded facility-wide for all sources.”* The Permittee submitted the requested modeling on July 13, 2006, in the form of a SCREEN3 modeling demonstration. The modeling identified the following subject sources:

- three car bottom furnaces (**ID Nos. ES-2D-50 through ES-2D-52**);
- seven pit-type furnaces (**ID Nos. ES-2E-57F61 through ES-2E-57F67**);
- ten recirculation furnaces (**ID Nos. ES-2H-10 through ES-2H-19**); and
- twelve electric LWG furnaces (**ID Nos. ES-5E.1 through ES-5E.12**).

Per the Permittee, the modeling demonstrates that hydrogen sulfide emissions from the facility will not result in ambient concentrations in excess of the AAL listed in 15A NCAC 2D .1104.

However, it was decided by DAQ, based on the amount of public interest for this project, to conduct further refined modeling to determine the facility’s hydrogen sulfide ambient impact. In his **January 26, 2007** dispersion modeling analysis, Mark Yoder of DAQ-AQAB indicated that the refined modeling he reviewed demonstrates compliance, on a source-by-source basis with the hydrogen sulfide AAL. Emissions of hydrogen sulfide occur during the production of synthetic graphite from numerous preheaters, holding ovens, car bottom furnaces, pit-type furnaces, recirculation furnaces, and electric LWG furnaces. Because the facility is located in mountainous terrain, the CALPUFF model was used. The maximum 24-hour hydrogen sulfide concentration was 7.5% of the AAL. The relatively low maximum concentration from the CALPUFF model versus the SCREEN3 maximum concentration (81% of the AAL) indicates that the SCREEN3 model is a more conservative modeling tool. Therefore, the following emission limits were suggested for the renewed permit:

Emission Source(s)	Toxic Air Pollutant(s)	Emission Limit(s)
<b>ES-2D-50 through ES-2D-52</b>	Hydrogen sulfide	0.80 lbs/day
<b>ES-2E-57F61 through ES-2E-57F67</b>	Hydrogen sulfide	0.038 lbs/day
<b>ES-2H-10 through ES-2H-19</b>	Hydrogen sulfide	0.2095 lbs/day
<b>ES-5E.1 through ES-5E.12</b>	Hydrogen sulfide	38.877 lbs/day

The Permittee stated in the renewal application that the emission rates were derived from actual process throughputs based on 2005 production records. These were considered to be maximum rates because the Permittee operated at maximum production during 2005. Records show that a total of 43,149,494 pounds of stock was processed by the bake and rebake departments combined (car bottom at 45.49%, pit-type at 49.97%, and recirculation at 4.54%). Also in 2005, the lengthwise graphitizing furnaces processed between 44,515,908 and 48,218,998 pounds of stock as well as 3,438,964 pounds of pack media (low sulfur petroleum coke with an average sulfur content of 1.76%). To ensure compliance with these source-by-source emission limits, the Permittee will be limited to these maximum production rates.

In addition to the modeling for hydrogen sulfide and in response to a recent permit modification, the Permittee was required to perform and submit the results of facility-wide emissions modeling of benzene for inclusion in the permit. On **February 25, 2008**, the Permittee did submit a demonstration that benzene emissions facility-wide were not greater than the AAL for benzene. Mark Yoder of DAQ, AQAB noted *“the modeling analysis adequately demonstrates compliance with the acceptable ambient level (AAL) for benzene on a source-by-source basis”*. Therefore, the following source-by-source emission limits were suggested for inclusion in the renewed permit:

Emission Source(s)	Toxic Air Pollutant(s)	Emission Limit(s) (lbs/year)
<b>ES-1B-1h-02S1SC ES-1B-1h-02S1WC ES-1B-1h-02S2SC</b>	Benzene	45.114
<b>ES-1I.1 through ES-1I.8 and ES-1I.17 through ES-1I.22</b>	Benzene	40.121
<b>ES-1I.9 through ES-1I.16</b>	Benzene	24.677
<b>ES-2D-50 through ES-2D-52</b>	Benzene	42.311
<b>ES-2E-57F61</b>	Benzene	0.140
<b>ES-2E-57F62</b>	Benzene	0.140
<b>ES-2E-57F63</b>	Benzene	0.140
<b>ES-2E-57F64</b>	Benzene	0.140
<b>ES-2E-57F65</b>	Benzene	0.140
<b>ES-2E-57F66</b>	Benzene	0.140
<b>ES-2E-57F67</b>	Benzene	0.140
<b>ES-4A</b>	Benzene	9.513
<b>ES-2H-10 through ES-2H-19</b>	Benzene	2.698

A draft renewed permit was created and submitted to the Permittee which included the source-by-source emission limits and production limits for hydrogen sulfide and benzene as indicated above. Upon review of these conditions, the Permittee requested and subsequently submitted facility-wide worst case modeling for each of the pollutants in order to avoid any production limitations on permitted equipment. This modeling demonstration was presented to DAQ on July 1 and refined on July 15, 2008. A review of this modeling indicated compliance for both toxics. Therefore, the renewed permit includes the modeled emission rates as follows:

***State-enforceable only***

2. **15A NCAC 2D .1100: CONTROL OF TOXIC AIR POLLUTANTS** – Pursuant to 15A NCAC 2D .1100 “Control of Toxic Air Pollutants,” and in accordance with the approved application for an air toxic compliance demonstration, the following permit limits shall not be exceeded:

<b><i>Emission Source(s)</i></b>	<b><i>Toxic Air Pollutant(s)</i></b>	<b><i>Emission Limit(s)</i></b>
<i>Facility-wide</i>	<i>Hydrogen Sulfide</i>	<i>67.44 lbs/day</i>
<i>Facility-wide</i>	<i>Benzene</i>	<i>174.62 lbs/year</i>

15A NCAC 2Q .0711: The current permit lists the following toxic pollutants as having been analyzed for emissions less than the toxic permit emission rates (TPERs): carbon disulfide, methylene chloride, methyl ethyl ketone, toluene, trichlorofluoromethane, and xylene. This permit renewal does not affect this status.

The ARO has recently raised concerns and requested clarification on potential facility-wide nickel emissions. A historical look at previous modeling performed at the facility indicated that nickel was addressed. However, the permit was silent on the issue after a modeling demonstration was completed that excluded all combustion sources. The Permittee has provided a demonstration that nickel metal emissions cannot be volatilized into a gaseous form and that the remaining particulate nickel in the packing material is less than the TPER. Therefore, nickel has been added to the table of TPERs in the renewed permit.

**VIII. Facility Emissions Review**

The following table represents the latest years’ emission inventories from the facility:

<b>Pollutant(s)</b>	<b>2005 Actual Emissions (tpy)</b>	<b>2006 Actual Emissions (tpy)</b>	<b>2007 Actual Emissions (tpy)</b>	<b>2008 Actual Emissions (tpy)</b>
CO	<b>562.58</b>	517.73	508.18	456.09
NO <sub>x</sub>	22.18	24.17	<b>25.01</b>	24.84
PM <sub>10</sub>	129.46	<b>166.90</b>	142.55	142.23
SO <sub>2</sub>	289.22	353.74	<b>357.74</b>	250.95
VOC	1.68	<b>1.91</b>	1.78	1.56
Total HAP/TAP	<b>11.43</b>	10.59	7.15	5.19

\* Bolded amounts are pollutant highs over represented 4-year period.

## IX. Stipulation Review

Brendan Davey of the ARO had the following comments on the modification portion of the permit application:

1. The new sigma mixers and vibratory mold press will increase toxic air pollutant emissions from the emissions of pitch volatiles and trigger the facility for the increased air toxic pollutants. Application form D1 appears to estimate emissions only from the increase and compare them to the TPERs. The new facility-wide total should have been compared to the TPERs to see if toxics modeling is required. Some toxics may be above the TPERs on a facility-wide basis. *Upon further review of the permit application, the source-specific additional toxics can be added to the facility totals as presented in Section 6.0 of the application. It should be noted that the modification is adding additional benzene to the total facility-wide numbers. The increase will trigger a requirement that the Permittee complete toxics modeling in support of compliance with the AAL (1.168 pounds per year potential for the modification + 1,249.23 pounds per year potential facility-wide > 8.1 pounds per year TPER). Estimates indicate that the TPERs are not exceeded for the remaining toxics (carbon disulfide, Methylene chloride, methyl ethyl ketone, toluene, trichlorofluoromethane, and xylene). These toxics have been added to the permit in the form of a TPER condition. See Section VII of this Document above for a discussion.*
2. Potential emission calculations for several new sources simply assume the allowable emission rate without actually estimating an actual emission rate. *The Permittee has provided emission calculations (see Section V of this Document for a discussion) for each of the applicable new sources.*
3. Induction furnaces – are these electric or natural gas fired? If natural gas I think more data is needed to validate the “zero emissions” estimation. They do have a point that after initial baking the electrodes may not have much left in them to emit in these furnaces. Do they have nickel and sulfur analysis to substantiate these claims? *Section 5.0 of the permit application identifies these sources as electric furnaces with negligible emissions.*
4. Nitrogen purge to the LWGs – at what point in the cycle is the nitrogen used? If conducted when the furnace is hot would there be NO<sub>x</sub> emissions? Regardless of timing would the gas flow cause packing material to become airborne and create particulate emissions? *The Permittee provided additional information on the nitrogen purging system. Specifically, in the induction furnaces, the stock is placed into the furnace with no pack media. Nitrogen is introduced to purge the furnace of oxygen because if oxygen comes into contact with the stock, the stock will burn. Therefore, the oxygen is purged from the furnace before the temperature is high enough for the nitrogen to combust (i.e., no oxygen available for the formation of NO<sub>x</sub>). In the LWG, small tubes are placed at the bottom of the furnace, underneath the stock, and then everything is covered with the pack media. At the end of the cycle (after the power is turned off), a very low flow of nitrogen is introduced to “bathe” the stock to prevent impurities (of which have just been processed out of the stock) from condensing back into the stock. No oxygen is available here for the formation of NO<sub>x</sub>, and the flow is so low that pack media is not disturbed. While the temperature at the introduction is 3000°C, the pack media is a very good insulator and the temperature at the air blanket above the furnace is approximately 575°C. When the nitrogen migrates through the pack media and escapes through the top, the temperature is well below nitrogen’s combustion temperature of 1600°C. Further, this nitrogen purge will not be a standard practice at the facility but used for special, limited runs, and not routinely.*
5. Vibratory mold press - in the permit description, please include the shrouded conveyor that is vented to the ESP. Is the press loading and/or press itself vented to this ESP? *The Permittee has confirmed that only emissions from the shrouded conveyor itself are ducted to the ESP.*

Brendan Davey of the ARO had the following comments on the renewal portion of the permit application:

1. A CAM plan was prepared for several emission sources in site. The CAM applicability analysis was not completely clear on why each unit is subject (no calculations enclosed). I suspect many of the units listed as subject may not truly be subject. *The final permit does include CAM applicability for selected emission sources (See Section VI of this Document for a discussion).*
2. The ARO made several comments on the initial DRAFT of the title V permit that were not addressed because of timing issues and Directors request. The issues that were not addressed in 2003 should be addressed now. Please address the following issues summarized below and that are explained in more detail in attached memorandums:
  - i. is the facility toxics triggered facility-wide or not? *The facility did complete a facility-wide toxics demonstration in 1993 following a permit modification to add new process furnaces. The DAQ AQAB, at that time, noted that the addition has triggered the NC toxic review requirements for the entire facility. It should be noted that the 1993 modeling included emissions from all combustion sources. Since that time, the facility has been reevaluated to exclude those combustion sources. Only hydrogen sulfide was found to be greater than the TPER and included in the permit. Those remaining pollutants below the TPERs were not included in the first time Title V permit. They have been added to the renewed permit; therefore, the facility has been triggered facility-wide.*
  - ii. hydrogen sulfide from other furnaces. *The refined modeling required to be submitted finalized hydrogen sulfide emissions from all applicable sources as described in Section III of this Document above;*
  - iii. why was the 15 pounds per hour hydrogen sulfide limit in the initial title V retained when the APO and RCO modeling staff indicated that it should be no more than 5 pounds per hour? Also, the hydrogen sulfide AAL has been revised – does this need to be addressed in this permit renewal? *The refined modeling required to be submitted finalized hydrogen sulfide emissions from all applicable sources as described in Section III of this Document above;*
  - iv. oxidizer issues (specify minimum temperatures for all oxidizers); and
  - v. ESP monitoring should be included to ensure a proper number of plates are operating. *The renewed permit requires that monthly visual checks and annual internal checks and cleaning now be performed on the ESP to ensure compliance and that the proper number of plates are operating.*

## **X. Public Notice/EPA and Affected State(s) Review**

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit shall be placed in a newspaper of general circulation in the area where the facility is located. The notice will provide for a 30-day comment period, with an opportunity for a public hearing. Copies of the public notice shall be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of each permit application, each proposed permit and each final permit shall be provided to EPA. Also pursuant to 2Q .0522, a notice of the DRAFT Title V Permit shall be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. South Carolina and Tennessee are affected States and the Western NC Regional Air Quality Agency is an affected Local Program all within 50 miles of the facility.

## **XI. Conclusions, Comments, and Recommendations**

A professional engineer's seal was not required for this renewal. However to cover the modification portion, the application was sealed by Jason Davis (#030350).

A consistency determination was not required for this renewal. However, to cover the modification portion, an applicable determination was received.

ARO recommends issuance of the permit and **was presented** with a DRAFT permit prior to notice and issuance.

RCO concurs with ARO's recommendation to issue the renewed air permit.