South Carolina Department of Health and Environmental Control
Bureau of Air Quality

Response to Comments
Public Notices #12-032-PSD-H and #12-042-PSD-ECP
Showa Denko Carbon, Inc. Construction Permit
Ridgeville, Dorchester County, South Carolina
Permit No. 0900-0025-CZ

The following is the SC Department of Health and Environmental Control's (DHEC) Bureau of Air Quality (Department) response to the comments made and issues raised during the formal comment period held April 13, 2012 – May 31, 2012 and the public hearing held on May 14, 2012, regarding the draft construction permit for Showa Denko Carbon, Inc. (Showa Denko, or facility) at 478 Ridge Road in Ridgeville, Dorchester County. The written comments received regarding the draft permit are available for viewing at the SC DHEC Columbia office located at 2600 Bull Street, Columbia, SC 29201, or on the SC DHEC webpage http://www.scdhec.gov/environment/baq/PermittingDecisions, or hardcopies can be requested by contacting our Freedom of Information Office at (803) 898-3817.

1. **Graphitizing stack air emission concerns:** There were comments regarding emission problems from the 430 stack (existing Graphitizing Furnace stack) that occurred in the late 1990's. The commenter stated that the incidents caused physical damage to both people and personal property and wanted to know what had been done to rectify the problem and what measures were in place to ensure it would not reoccur. The Department asked Showa Denko to review their records for any air emission issues relating to the stack and time period. Based on their review, Showa Denko stated that on Wednesday, September 18, 1996, employees reported a substance near the parking lot and on the cars in the lot. Showa Denko investigated the reports and found the issue was the startup of an exhaust fan on the existing graphitizing stack. An exhaust fan had been turned on the morning of September 18, 1996, after having been down for several months. During the time the fan was shut down for maintenance, moisture and dust from metallurgical coke accumulated in the fan housing. Metallurgical coke is an insulating material, containing some sulfur, used in the graphitizing process. It is believed that the moisture in the housing became acidic from contact with the metallurgical coke dust. Based on that incident, some cars in the parking lot were repainted. No injuries were reported to Showa Denko officials as a result of that incident. The air permit required the facility to monitor opacity on the existing graphitizing stack at the time of the incident. The opacity reading did increase for less than one minute, but that reading was still below the regulatory requirement.

Showa Denko has since developed Graphitization Induced Draft Fan Operations procedures to prevent this incident from occurring again. The permit requires the installation of an SO_2 emissions reduction control device on both the existing and new graphitizing furnaces, requires initial and periodic stack testing and daily monitoring of

the control device. Additionally, the permit limits the amount of sulfur contained in the metallurgical coke.

2. **Start of construction:** A comment was received stating that several acres of land had been cleared even though the permit had not been issued. Federal and state regulations prohibit a facility seeking a Prevention of Significant Deterioration (PSD) permit from starting construction activities without an issued air permit. However, land clearing activities are not considered a construction activity under the air quality regulations. Showa Denko has taken on that activity as a financial risk in the event that they do not qualify for issuance of the air construction permit.

3. **Noise:** A comment was received regarding noise created by the facility. The Department does not have any noise regulations and therefore cannot regulate noise levels. Dorchester County does have a noise ordinance. Noise concerns can be reported to the Dorchester County Sheriff's Office at (843) 832-0300.

4. **SO_2 impacts and acid rain:** A comment was made concerning the impacts of SO_2 emissions and acid rain. Sulfur dioxide (SO_2) emissions are being reduced at this plant as part of the proposed expansion. The facility will be installing an emission control device to reduce SO_2 emissions on both the new graphitizing furnaces and the existing graphitizing furnaces. Due to the installation of these control devices and sulfur limits on raw materials, facility-wide SO_2 emissions will be decreasing by over 100 tons per year. The permit requires initial and periodic stack testing and daily monitoring of the control devices to demonstrate SO_2 emissions are being reduced effectively. Additionally, Showa Denko has demonstrated through air dispersion computer modeling that the maximum emission concentrations are below ambient standards.

5. **Health, property, and livestock impacts:** A comment was received concerning the health, safety and environmental impacts this expansion (and the current facility configuration) will have on health, livestock, property, and crops. In order to receive an air quality permit, the facility must demonstrate that they are in compliance with air quality standards set by the Environmental Protection Agency (EPA) and DHEC. The Clean Air Act established two types of National Ambient Air Quality Standards (NAAQS). Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. The EPA has set NAAQS for six principal pollutants, which are called "criteria" pollutants: particulate matter (PM, PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone, carbon monoxide (CO) and lead. The NAAQS are reviewed every 5 years and updated as necessary so that concerns regarding the health of sensitive individuals and protection of welfare are incorporated into air quality standards. These NAAQS are incorporated into South Carolina regulations through our rulemaking process. Showa Denko has demonstrated through air dispersion computer modeling that the maximum emission concentrations are below the NAAQS. Additionally, under PSD permit requirements, Showa Denko conducted a soil and vegetation modeling analysis. The EPA has set screening levels to

determine if there is any potential harm to soil and vegetation at the facility fence line and beyond into the community. The results of the modeling analysis were below the EPA screening levels indicating that the project will have no adverse impacts on soils or vegetation. The permit also requires stack testing, monitoring of pollution control devices, raw material sulfur and nitrogen limits, recordkeeping and reporting to ensure the facility is meeting the regulatory requirements.

6. **Insufficient emissions monitoring:** Comments were received stating the frequency of stack testing requirements were not adequate and that continuous monitoring was needed to protect the community. The Clean Air Act is designed to protect local air quality from potential pollution impacts from large sources through the PSD permitting process. In order to receive a PSD permit, Showa Denko has to apply Best Available Control Technology (BACT) to all equipment impacted by the expansion and conduct an air quality analysis to demonstrate it will not cause or contribute to an exceedance of an air quality. All of the potential emissions from the project were reviewed and a BACT review was followed to identify the required control device and/or control technology. Similar facilities that were issued PSD permits were reviewed as part of this process.

The permit review process included a determination of the sufficient monitoring requirements to assure compliance with the emission limits. We looked at federal and state air regulatory requirements, PSD permits issued to similar sources in other states and other Department-issued PSD permits for new and existing sources to determine appropriate monitoring requirements for this permit. The permit requires initial and periodic stack testing. The stack testing regulation requires that the tests be conducted "while the source is operating at the maximum expected production rate or other production rate or operating parameter which would result in the highest emissions for the pollutants being tested." All test results will be reviewed by the Department. Monitoring pollution control devices to demonstrate they are effectively removing pollution is an essential demonstration of compliance with those emission limits. The most stringent federal air regulations have a long standing history of requiring an initial stack test followed by control device monitoring for compliance demonstrations. In our review of PSD permits issued to similar sources we found that permit requirements were limited to initial testing followed by control device monitoring. This expansion permit requires that control devices be monitored at least daily and corrective action taken when the controls are operating outside the proper performance range. Additionally, if we determine it is warranted, the Department can require stack testing at any time.

7. **$PM_{2.5}$ emissions impacts:** A comment was received concerning impacts from particulate matter less than 2.5 micrometers in diameter ($PM_{2.5}$) emissions. Showa Denko has demonstrated through air dispersion computer modeling that the maximum emission concentrations are below ambient standards. A BACT analysis was conducted for all sources impacted by the expansion that emitted $PM_{2.5}$. BACT for $PM_{2.5}$ was determined to be a wet scrubber for the graphitizing furnaces, baghouses for material handling operations and good combustion practices for any natural gas and propane burner. The

permit requires initial and periodic stack testing and at least daily monitoring of control devices to demonstrate compliance with the emission limits.

8. **Health and environmental impacts to water:** The Department received comments questioning the state of the water table in Dorchester County and whether Showa Denko should limit their groundwater consumption and use other methods of obtaining water such as pumping from the lake. One comment questioned where Showa Denko would get the water they would need for the proposed expansion. Due to the nature of these comments, the Bureau of Air Quality asked the Bureau of Water to assist in reviewing these comments provided on the draft permit. Showa Denko is regulated under SC Regulation 61-113, Groundwater Use and Reporting. The facility is a current Capacity Use permitted groundwater withdrawer, with Permit # 18IN002. The facility is permitted to withdraw a maximum of 114,000,000 gallons per year and has reported an average withdrawal of 62,234,000 gallons per year for the previous five (5) years. Should the facility require any increase in groundwater withdrawal above what they are currently permitted, they will be required to apply for a modification to their existing Groundwater Withdrawal Permit. The application will be reviewed in accordance with the regulations and any draft permit decision will be placed on public notice for community input. Two (2) production wells at the facility are completed in the Middle Zone of the Crouch Branch Aquifer (formerly Black Creek Aquifer) at approximately 460 feet below ground surface. The producing zone is separated from the shallow water table by two (2) substantial clay layers, each approaching 100 feet in thickness. Drought related drops in the water table and pond levels have been reported over much of the Coastal Plain of South Carolina. Because the aquifer used by Showa Denko is separated from the water table aquifer, current fluctuations of the shallow water table are not associated with the groundwater withdrawal at Showa Denko For additional information please contact Rob Devlin at 803-898-3798 (devlinrj@dhec.sc.gov) or Paul Bristol at 803-898-3559 (bristopl@dhec.sc.gov) with SCDHEC Bureau of Water, Groundwater Management Section.

9. **General opposition and support:** The Department received a general comment supporting the issuance of a permit for this facility. Title 48 of the SC Code of Laws, Section 48-1-100, states that "If, after appropriate public comment procedures, as defined by Department regulations, the Department finds that the discharge from the proposed outlet or source will not be in contravention of provisions of this chapter, a permit to construct and a permit to discharge must be issued to the applicant." The Department cannot make permitting decisions based on community approval or disapproval of the company/facility. The Department does not make permit decisions based on the number of individuals or groups that support or oppose a project. The Department's decision is based on the Department's technical review of an applicant's application and the regulatory requirements in place at the time of the Department's review. The Department welcomes and appreciates all comments made regarding the Showa Denko Carbon, Inc. Ridgeville facility.

10. **Include project emissions as enforceable permit conditions:** The Environmental Protection Agency (EPA) commented that the modeled emission rates

should be included as enforceable conditions in the permit. The Department has a long standing history of including modeled emission rates as an attachment in all construction and operating permits with standard language requiring a new modeling demonstration if these emissions are exceeded. We assume Tables 1, 2 and 3 referred to in the comment are the emission tables in the "Class II Modeling Report" submitted by Showa Denko. These emission rates were used in the air quality analysis and are included in the permit's Attachment A. These emission rates in the demonstration are part of the permit, although higher rates can be incorporated administratively into Attachment A of the permit, provided a valid demonstration does not interfere with the attainment and maintenance of any state or federal standard. The permit requires Showa Denko to maintain emissions at or below the emission rates in Attachment A of the permit. To provide clarity that emissions will be maintained at or below the Attachment A emission rates, we have included a permit condition that states stack testing results will be used to demonstrate compliance with the emission limits and to verify emissions used in the modeling demonstration. Please refer to permit condition 5.A.8.

11. **Class I modeling current actual emission rates:** The EPA questioned whether or not the current actual emission rates were provided in Table 4 of the Class I modeling protocol. The emission rates provided in Table 4 of the Class I modeling protocol have been confirmed to be the current actual emission rates for the stacks identified and are consistent with the emissions listed in Table A-4 of the Class II modeling report.

12. **Class I modeling emission rates for stack MOD-59:** The EPA questioned why the emissions for the stack identified as MOD-59 were the same in Table 2 and Table 4 of the Class I modeling protocol, when the emissions in Table 2 were identified as future allowable emissions while those in Table 4 were identified as current actual emission rates. For MOD-59, there are no changes in emissions due to the project and the current actual emissions are the same as the future allowable emissions.

13. **Class I modeling stack parameters:** The EPA asked for an explanation as to why stack diameters, exit temperatures, and exit velocities were not changing on stacks listed in Table 2 of the Class I protocol whose heights were being increased. In February/March 2012, air dispersion modeling for the project was updated to incorporate "peak" short-term hourly emission rates for existing and new sources based on information obtained from the source testing campaign completed in January. The updated modeling runs indicated that substantial height increases are required for certain stacks in order to comply with the new, much more restrictive ambient air quality standards for SO_2, NO_2, and $PM_{2.5}$ (including condensables). Based on these air dispersion modeling results, the stack heights shown in Table 2 are an initial future configuration that improves dispersion characteristics to achieve compliance with the new ambient air quality standards.

There are many variables that must be considered before actually physically modifying any existing stack for a large increase in height (foundations, seismic design, wind loads, structural supports, ventilation requirements, etc.). Detailed engineering is being performed to optimize the initial future stack configurations

shown in Table 2 while ensuring that the applicable building codes are satisfied and the required improvements in dispersion characteristics are maintained.

This also applies to modifications to the existing graphitizing process. In order to comply with the new, much more restrictive ambient air quality standards, the roof vent (Line 01) on the existing graphitizing process will be fitted with duct work that will route emissions to two new tall stacks (ML1a and ML1b). The existing tall stack (P68), which has no emission controls, will be demolished and replaced by a scrubber (MP68) in approximately the same location. The stack parameters for stacks ML1a, ML1b, and MP68 are initial future configurations that improve dispersion characteristics to achieve compliance with the new ambient air quality standards. Detailed engineering is being undertaken to optimize these initial future stack configurations while ensuring that the applicable building codes are satisfied and the required improvements in dispersion characteristics are maintained.

Once this detailed engineering work is completed, Showa Denko will update the modeling demonstration, as necessary, with the final stack configurations (including heights, diameters, temperatures, flow rates, etc.) and submit the updated modeling demonstration to the Department for review and approval.

14. **Class I model used:** The EPA asked for confirmation that the EPA regulatory versions and EPA default options were used in the Class I CALPUFF modeling. CALPUFF v5.8 and CALMET v5.8, the EPA regulatory versions, were used for this modeling, configured with the EPA default options (including the MREG=1 regulatory option).

15. **Class I modeling meteorological and land use data:** The EPA asked for confirmation that the VISTAS meteorological data set was prepared using the EPA regulatory version of CALPUFF and that the VISTAS data were not altered. The standard VISTAS meteorological dataset and VISTAS CALMET technical options were used in the EPA regulatory CALMET v5.8.

16**.** **Class II modeling current actual emission rates:** The EPA questioned whether or not the current actual emission rates were provided in Table A-4 of the Class II modeling report. The emissions in TableA-4 of the Class II report reflect current actual emissions rates. There are no project associated increased emissions for MOD-P59 for the modeled PSD pollutants. For SO_2, CO, nitrogen oxides (NO_x), particulate matter less than 10 micrometers in diameter (PM_{10}) and $PM_{2.5}$ there are no changes in the emissions due to the project, which is why Tables A-2 and A-4 have the same emission rates for these pollutants.

17. **Class II modeling current actual baseline period:** The EPA asked for the reason the 2007-2008 period is considered appropriate for use as the current baseline period for the ambient impact modeling. The existing Showa Denko facility can produce approximately 45,000 metric tons of finished graphite electrodes per year. Production at the facility was essentially “sold out” for many years leading up to the recent economic recession. Production of finished graphite electrodes from the existing Showa Denko

facility during the five calendar years prior to submittal of the PSD permit application in June/August 2011 was as follows:

Calendar Year	**Finished Graphite Electrode Production W/O Pins (Metric Tons)**
2006	44,500
2007	44,800
2008	43,400
2009	17,600
2010	38,600

The most recent recession was not normal. The effects of that recession can clearly be seen in the table above. As the recession worsened in 2009, customer orders for graphite electrodes decreased dramatically, forcing Showa Denko to curtail operations and then shut down portions of the existing facility for much of 2009. As economic conditions improved in 2010, production began to ramp up, but still did not reach normal, pre-recession levels. Given the above information, the 2009-2010 period is not representative of normal operation. Because of this, it was determined that the 2007-2008 period was most representative as the most recent two-year period indicative of normal operations for the existing Showa Denko facility. This approach is in keeping with the definition of "actual emissions" in DHEC Regulation 61-62.5, Standard No. 7 (b)(1)(ii), which reads as follows:

(ii) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation. The Department shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

Showa Denko elected to use a very conservative approach when deriving the hourly emission rates (current actual and future potential) used in the impact modeling. For the actual calculations of short term hourly emissions from the existing carbottoms and graphitizing operations, Showa Denko elected to be conservative and retain the "normalized" approach that is used to track emissions for the current operating permit (i.e. Showa Denko used the long term ton per year emissions for 2007-2008 and divided by the continuous operating schedule to obtain the short term hourly emission rates used in the impact modeling). For future potential short term hourly emissions from the existing and new carbottoms and graphitizing operations, the hourly emissions calculations were updated based on data from the recent source testing

campaign to account for short term "spikes" or "peaks" in emissions from these sources.

This approach produces a conservative modeling demonstration as Showa Denko used the "peak" hourly emission rate when modeling future potential emissions from existing and new sources. For current actual hourly emissions from existing sources, Showa Denko used the lower "normalized" hourly emission rate instead of the "peak" hourly emission rate. This increases the delta when current actual hourly emissions are subtracted from future potential hourly emissions, and thus produces a conservative modeling demonstration that overestimates project impacts.

18. **Class II modeling stack P68 downwash:** The EPA commented that emission point P68, which has a height that is greater than Good Engineering Practice, was modeled without including potential downwash effects. This comment indicated that the effect of this on the impact analysis would be conservative. The Department agrees that the result is conservative and, therefore, no change in the impact analysis is needed.

19. **Class II modeling graphitizing area stack parameters:** The EPA commented on the distribution of the emissions through the graphitizing area stacks (MP68, ML1a, and ML1b), asking for an explanation of why the description in Section 2 of the Class II modeling report indicates only two stacks and what the effect of the distribution on the stack exit temperature and velocity would be. The existing roof vent will be replaced by two new dispersion stacks (ML1a and ML1b) in addition to a new scrubber that will be built at the location of the associated existing graphitizing process stack (MP68). The SO_2, CO, NO_x, PM_{10} and $PM_{2.5}$ emissions from the graphitizing process will be emitted through these three stacks. The design calls for a fixed percentage of the SO_2, PM_{10} and $PM_{2.5}$ emissions to be routed to the new scrubber stack for control, while the remaining uncontrolled percentage will be emitted through the two new dispersion stacks. The Section 2 sentence in question, describing the graphitizing process, is clarified below:

In order to demonstrate compliance via air dispersion modeling with the new stringent 1-hour SO2 standard, the existing roof vent (Line 01) will be fitted with duct work that will route some of the emissions to two new tall stacks (ML1a and ML1b). The existing tall stack (P68) which has no emission controls will be demolished and replaced by a scrubber (MP68) in approximately the same location. After the modification, the Line 01 and P68 emissions will be released through a combination of three stacks (MP68, ML1a and ML1b).

As indicated previously concerning these stack exit velocities and exit temperatures, once the detailed engineering work is completed, Showa Denko will update the modeling demonstration, as necessary, with the final stack configurations (including heights, diameters, temperatures, flow rates, etc.) and submit the updated modeling demonstration to the Department for review and approval.

20. **Class II modeling post-processing:** The EPA asked that the proper operation of the post-processing programs used to obtain appropriate temporal and spatial pairing of

the ambient concentrations and the development of concentrations in the form of the NAAQS be demonstrated. The equivalency of CALPOST with the AERMOD processing of concentrations was demonstrated by comparing the direct output of AERMOD with all point sources included with the source-by-source AERMOD runs summed by CALSUM and POSTUTIL. These runs demonstrating equivalency were provided to the Department. A second set of equivalency tests was provided in Appendix F comparing the output from the US EPA BLP and POSTBLP executables for line sources with that used in the Showa Denko runs using CALPOST. A comparison of the results obtained indicated no difference between the two methods and the Department verified through independent modeling runs that there is no difference between the two methods, demonstrating the two methods are equivalent.

21. **Class II models:** The EPA asked that the use of only the unmodified regulatory approved AERMOD and BLP computer models be confirmed. The EPA BLP model executable allows only 100 receptors to be used, which is inadequate for the Showa Denko project. The array dimensions in the BLP code were expanded to accommodate the 15,000 receptors used in the Showa Denko analysis, as allowed in Section 3.1.2b of the EPA *Guideline on Air Quality Models*. The equivalency of the code after the modification to accommodate more receptors with the original EPA executable was demonstrated in the Appendix F tests. The regulatory approved version of AERMOD, which can accommodate the Showa Denko receptor and source configuration, was used without modifications.

22. **Class II modeling meteorological and land use data:**

a. The EPA commented on the assessment of the representativeness of the meteorological data surface characteristics. The use of the Charleston airport (KCHS) meteorological data for the Showa Denko project was based on the criteria in Section 8.3.a of the EPA *Guideline on Air Quality Models*. In particular, the criteria include consideration of: the proximity of the meteorological site to the facility (KCHS is the closest ASOS meteorological site by far); the complexity of the terrain (similar at both the KCHS and the facility); representativeness of exposure of the meteorological site (the KCHS is a well-sited instrument free from obstructions); and the time period for which the meteorological data are available (good quality hourly data for a recent five-year period). In addition, an analysis presented in the Class II report of surface roughness characteristics in the vicinity of the project facility and the meteorological site shows that both locations are of similar (moderate) roughness. Although the roughness in the Charleston area is more due to urban structures than near the facility where the roughness is more attributable to trees, the roughness characteristics are deemed similar with differences of less than 45 cm on the average. As noted in the report, roughness length is considered to be of secondary importance for this project as most of the emissions are emitted from tall stacks. The factors used in judging representativeness are based on the EPA recommendation in Appendix W

that surface characteristics should "generally describe" the modeling domain. It is the judgement of the Department that the Charleston Airport meteorological data is representative for sources included in the modeling domain for the Showa Denko project.

b. The EPA commented on the number of calm observations in the meteorological data that was used in the air modeling analysis and asking for a justification as to why the AERMINUTE processor was not used to reduce the number of calm periods. The use of AERMINUTE is not a regulatory requirement. Its use is based on the importance of light wind speed dispersion for the sources of interest and the frequency of calm winds. Unlike the case of non-buoyant emissions from ground-level sources, where light wind, stable conditions are likely to lead to the worst case predicted conditions, the Showa Denko sources are dominated by tall stacks. In addition, at Charleston Airport, the frequency of calm conditions (13.3%) is low compared to other National Weather Service stations. Also, an important element of the analysis involves the use of the BLP model for the buoyant line source impacts. The BLP model was designed to use a minimum wind speed of 1 m/s in its calculations. BLP does not include a random plume component to treat low wind speed conditions that would occur if AERMINUTE processing were to be used. Another consideration is the fact that many of the PSD background sources included in the modeling are located 20 km or more from Showa Denko. Due to transport time (causality) considerations, the steady-state assumptions in AERMOD and BLP break down when the transport distances exceed one hour transport time (or 3.6 km for a 1 m/s wind speed). Using AERMINUTE to add some hours with winds in the 0.5-1.0 m/s wind speed range would not properly allow cumulative impacts to be assessed in the modeling due to the limits of the steady-state assumption.

23. **$PM_{2.5}$ minor source baseline date:** The EPA commented on the minor source baseline date, indicating that since the revised Showa Denko application was received after the $PM_{2.5}$ trigger date of 10/20/2011, the Showa Denko project sets the $PM_{2.5}$ minor source baseline date for Dorchester County. According to the $PM_{2.5}$ Increment, SIL, and SMC rule (75 FR 64864, October 20, 2010) "[t]he ''minor source baseline date'' is the earliest date after the trigger date on which a source or modification submits the first complete application for a PSD permit in a particular area." (p. 64868) The Showa Denko PSD application was received by the Department on June 14, 2011 and accepted as complete on August 11, 2011. The Department has not received a $PM_{2.5}$ major PSD application for any project in Dorchester County (or that would cause a significant impact in Dorchester County) since the $PM_{2.5}$ trigger date of 10/20/2011. Also, the revisions to the original application do not qualify as a separate PSD application with respect to the PSD regulations. Therefore, the Department has determined that the minor source baseline date has not been set for Dorchester County.

24. **Class II increment modeling:** The EPA asked for confirmation that the Dorchester County minor source baseline dates were used to identify the increment affecting sources located in counties outside of Dorchester County. The Department reviewed the inventory of background sources included in the Showa Denko modeling and confirmed that the Dorchester County minor source baseline dates were used to identify the sources that were included in the modeling.

25. **Class II background source inventory basis:** The EPA commented on the basis for the emissions of other, non-Showa Denko sources that were included in the air impact assessment for the project. The Bureau of Air Quality has reviewed the air dispersion modeling that was submitted and has verified that the emissions for the off-site sources included in the full impact modeling are based on maximum allowable emission rates applicable to each pollutant and averaging period.

26. **Clarification on thermal oxidizer technical feasibility:** The EPA commented that a sentence was truncated on page 56 of the preliminary determination. The final determination clarifies that the sentence should have stated, "Afterburners generally require an exhaust flow rate greater than 5,000 scfm for proper operation; therefore, a thermal oxidizer is not technically feasible."

27. **Ambient Air:** The EPA commented that the modeling demonstration must include ambient air and that a determination of what constitutes ambient air is case specific. Showa Denko owns a portion of Haven Road, a dirt road with no shoulder that runs across the Showa Denko property. Haven Road was created historically for the expressed and limited purpose of allowing restricted access across the approximately 800 acres comprising the Showa Denko site. This access is for neighbors who live on either side of the facility and for emergency vehicle access. We believe the modeling included ambient air and is protective of public health. Receptors were placed on the same dirt road for the portion that Showa Denko did not own, and the modeling results indicated pollutant concentrations were less than the ambient standards. Traversing this dirt road takes less than 60 seconds at moderate speeds. There are no ambient standards that are based on individuals being negatively effected based on traversing an industrial property in a vehicle for less than one minute.

Since the facility was originally constructed, it has received three PSD permits, each requiring the installation of BACT for all impacted units. This PSD permit includes the installation of a SO_2 scrubber on the existing graphitizing furnaces, even though these existing furnaces were not impacted by the expansion and therefore did not require a BACT analysis.

To clarify that the Showa Denko portion of Haven Road is not ambient air and that public health is protected, permit condition 6.B.1 (page 47) has been modified to state,

"Showa Denko Carbon, Inc. will construct and maintain perimeter fencing on their property boundary. This fencing will be completed prior to start of operation of the

expansion and the facility shall certify to the construction of the fence in their operating permit request.

The facility shall cause to be posted on both sides of the road at both ends of the road as it crosses the Showa Denko property signage that states,

a: the property is private;

b: access is restricted;

c: vehicles may not stop, stand or park;

d: loitering is prohibited.

The signs must be clearly visible and legible to any vehicle. Weathered or damaged signs shall be replaced or repaired immediately.

The facility shall monitor the Showa Denko owned portion of Haven Road to ensure there is no loitering and that no authorized vehicle stops, stands, or parks. Monitoring on that portion of the road includes,

a: Surveillance cameras to monitor for loitering or any prohibited or unauthorized vehicle activity;

b: Staff assigned to monitoring the road and cameras who would be trained and responsible for responding to any situation where an authorized vehicle was not traversing the road in an appropriate amount of time;

c: Written procedures for responding to any loitering or unauthorized vehicle issues.

Incidents will be recorded and maintained on site for a period of 5 years. Records shall include the date of incident, action taken, and the amount of time any non-Showa Denko personnel remained on that portion of the road."