RTP ENVIRONMENTAL ASSOCIATES INC.®
AIR · WATER · SOLID WASTE CONSULTANTS
304 - A West Millbrook Road
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VIA OVERNIGHT FEDEX DELIVERY

September 16, 2019

Winston-Salem Regional Office
North Carolina Department of Environmental Quality
450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105

Subject: Application for an Air Quality Construction Permit Application for Hot Mix Asphalt Plant and Concrete Batch Plant
Carolina Sunrock LLC, Burlington, Caswell County, North Carolina

Dear Madam/Sir:

On behalf of Carolina Sunrock LLC is submitting the enclosed application for a new hot mix asphalt plant and a concrete batch plant. The proposed facility is to be located in Caswell County, North Carolina. The enclosed application and its appendices present details of the proposed project and applicable requirements including application forms and toxics modeling report. An application fee check $400 is also enclosed.

We hope that this information is adequate for issuance of a construction permit for the proposed facility. If you need anything else or have any questions concerning the project please contact Scott Martino at (984) 202-4761, or smartino@thesunrockgroup.com or me at (919) 845 1422, 42 or saini@rtpenv.com.

Sincerely,

Gurinder (Gary) Saini

Enclosure

AIR QUALITY CONSTRUCTION PERMIT APPLICATION

CAROLINA SUNROCK LLC

BURLINGTON, NORTH CAROLINA

SUNROCK®

Submitted to:

Winston-Salem Regional Office
North Carolina Department of Environmental Quality
450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105

Prepared by:

RTP Environmental Associates Inc.
304A West Millbrook Road
Raleigh, North Carolina 27609

Submitted by:

Carolina Sunrock LLC
200 Horizon Drive, Suite 100
Raleigh, North Carolina 27615

September 2019

Table of Contents

1.0 INTRODUCTION

Carolina Sunrock LLC ("Sunrock") owns and operates several hot mix asphalt and concrete batch plants across North Carolina. Sunrock is proposing to build a new hot mix asphalt and tuck mix concrete batch plant at 12971 North Carolina 62, Burlington, North Carolina 27217. The site is located in Caswell County.

The proposed facility will involve construction of a hot mix asphalt plant, RAP crushing system, and truck mix batch concrete plant as described later in this application. Sunrock is applying for a construction and operating permit in accordance with 15A North Carolina Administrative Code ("NCAC"), Chapter 2Q .0304 and 2Q .0305. The new facility will be a synthetic minor facility for particulate matter less than 10 micron diameter (PM10) and an area sources of hazardous air pollutants by use of practically enforceable permit limitations. A construction and operation permit per 15A NCAC 02Q .300 is required for the proposed facility. Per 15A NCAC 2Q .0305(a)(1) and (b), three (3) copies of the application are included in this submittal. The application is duly signed by the responsible official as required in 15A NCAC 02Q .0305(a)(1)(E). A check for four hundred dollars ($400) for the permit application fee for a new synthetic minor facility per 15A NCAC 02Q .0305(a)(1)(A) is attached. As required by 15A NCAC 02Q .0304(b)(1), a zoning consistency determination is included in this application in Appendix D.

1.1 Application Organization

The remaining sections of the application are organized as follows:

- **Section 2.0** presents the project description and air pollutant emissions estimates.
- **Section 3.0** provides the regulatory requirements.
- **Appendix A –Application Forms** contains the completed application forms.
- **Appendix B – Emissions Calculations** contains detailed calculations.
- **Appendix C – TAPS Modeling Report** contains the TAPS modeling report.
- **Appendix D – Zoning Consistency Determination -** contains our request for a zoning consistency determination submitted to the Caswell County Planning Department.

2.0 PROJECT DESCRIPTION

The proposed project includes installation of a hot mix asphalt plant and truck mix concrete batch plant. A detailed description of the proposed equipment is provided below.

2.1 Hot Mix Asphalt Plant

The proposed hot mix asphalt plant will have a maximum capacity of 250 tons per hour consisting of following equipment:

- Propane/Natural Gas/No. 2 Fuel Oil/Recycled No. 2 Fuel Oil-fired drum type hot asphalt plant (80 MMBtu per hour maximum heat input capacity) using a bagfilter.
- Two (2) hot mix asphalt storage silos (150 tons maximum capacity, each)
- Two (2) hot mix asphalt storage silos (100 tons maximum capacity, each)
- One (1) hot mix asphalt storage silos (200 tons maximum capacity, each)
- Asphalt loadout operation
- Truck loadout operation.

The project will also include a reclaimed asphalt pavement (RAP) crushing system consisting of:

- One crusher (65 tons per hour)
- Four conveyors
- One screen

2.2 Truck Mix Concrete Batch Plant

The proposed truck mix concrete batch plant will have a maximum capacity of 120 cubic yard per hour consisting of following equipment:

- Cement silo (185 tons maximum capacity)
- Fly ash silo (135 tons maximum capacity)
- Truck loadout point
- Cement/flyash weight batcher (25 tons maximum capacity)
- Aggregate weigh batcher (50 tons maximum capacity)

All of the emissions points in the truck mix concrete batch plant except for the aggregate weight batcher will be controlled by a bagfilter.

2.3 Insignificant Acitivities

Sunrock is also proposing the following insignificant activities which are exempt from permitting:

- Liquid Asphalt Tank (30,000 gallon capacity);
- Liquid Asphalt Tank (20,000 gallon capacity);
- Gasoline Fuel Tank (20,000 gallon capacity);
- #4 Fuel Oil or Used Oil Tank (20,000 gallon capacity);
- Diesel Fuel Tank (20,000 gallon capacity);
- Natural gas/No. 2 fuel oil-fired Asphalt Cement Heater; and
- Natural gas/No. 2 fuel oil-fired Liquid Asphalt Tank Heater

2.4 Project Emissions

Table 2-1 presents a summary of potential to emit (PTE) after controls of air pollutants, including hazardous air pollutants (HAPs), from the proposed project. Detailed emissions calculations are attached in Appendix B of this application.

Table 2-1. PTE after Controls for the Project

	Potential to Emit (tons/year)			
	Hot Mix Asphalt Plant	Concrete Batch Plant	Liquid Asphalt Tank Heater	Total
PM	32.1	22.3	0.1	54.5
PM10	20.5	10.7	0.0	31.3
PM2.5	20.5	10.7	0.0	31.3
SO2	67.4		2.4	69.9
NOx	42.4		0.7	43.1
CO	99.0		0.4	99.4
VOC	35.8		0.0	35.8
Single HAP (Formaldehyde)				2.4
Combined HAPs				8.6

3.0 REGULATORY REQUIREMENTS REVIEW

This section of the application documents Sunrock's review of North Carolina Department of Environmental Quality (NCDEQ) and federal air quality regulations applicable or potentially applicable to the proposed project. Applicability conclusions are summarized by regulatory program. For each applicable regulation, specific requirements are documented.

3.1 State Regulations

This analysis is based on the latest version of Title 15A of North Carolina Administrative Code ("NCAC") available from the State's website.[1]

3.1.1 15A NCAC 02Q .0300 Construction and Operation Permit

In accordance with 15A NCAC 02Q .0301, a construction and operation permit is required for the proposed installation of a new facility. As explained later in this section, the proposed facility will be a minor source under the Title V requirements in 15A NCAC 02Q .0500. This application and its attachments fulfill the application requirements under 15A NCAC 02Q.0304 for obtaining a construction and operation permit.

3.1.2 15A NCAC 02Q .0700 Toxic Air Pollutant Procedures

Under the North Carolina air toxics regulations, facility-wide modeling and permitting is required if total facility-wide emissions of air toxics emitted from non-exempt, new or modified emission units exceed the toxic pollutant de minimis emission rates (a.k.a., "TPERS") established under the 15A NCAC 02Q .0700 regulations.

For the proposed facility, modeling is triggered for the following pollutants since total facility wide emissions exceed the respective TPERs: arsenic, benzene, formaldehyde, mercury, cadmium and nickel. Sunrock is submitting an air dispersion modeling analysis (See Appendix C) and requests TAP limits be added to the permit according to Table 4-

[1] See https://deq.nc.gov/about/divisions/air-quality/air-quality-rules/rules (accessed on 9/6/2019).

3 below. The emissions presented in Table 3-1 have been scaled up to the acceptable ambient levels (AALs) to afford the facility operational flexibility.

Table 3-1. TAP Permit Limits for the Project

Emission Point	Source Description	Arsenic (lb/yr)	Benzene (lb/yr)	Cadmium (lb/yr	Formal-dehyde (lb/hr)	Mercury (lb/day)	Nickel (lb/day)
CD1	Hot Mix Asphalt	14.37	7,752.60	62.02	40.50	0.58	5.90
CD2	Concrete Batch Plant	6.77		0.30			0.07
ESH2	Asphalt Heater	0.49	0.19	2.17	0.01	0.00	0.00
ESH1	Liquid Asphalt Heater	0.45	0.18	1.99	0.01	0.00	0.00
F1	Asphalt Silo	0.00	42.05	0.00	0.04	0.00	0.00
F2	Cement Silo	0.35	0.00	0.00	0.00	0.00	0.00

3.1.3 15A NCAC 02D .0530 Prevention of Significant Deterioration in Attainment Areas

Under 15A NCAC 02D .0530, NCDEQ incorporates the requirements of 40 CFR § 51.166 for implementation of the prevention of significant deterioration (PSD) program. Under 40 CFR § 51.166(b)(1)(i)(a), a major stationary source is any source in one of the 28 listed sources categories with the potential to emit (PTE)of 100 tons per year or more, or any source not in one of the listed source categories with PTE of 250 tons per year or more. The operations under the proposed project do not belong to one of the 28 listed source categories under the rule. Therefore, the 250 tons per year threshold is applicable. As shown in Table 2-1 and Appendix B, the PTE after controls of each of the regulated NSR pollutants from the project does not exceed 250 tons per year. Therefore, the proposed facility is not a major stationary source under the PSD program.

3.1.4 15A NCAC 02Q.0500 Title V Permit Procedures

Per 15 NCAC 02Q .0503 and 40 CFR § 70.2, a facility is a 'major source' for purposes of Title V operating permit program if PTE:

(a) For any air pollutant subject to regulation, is equal to 100 tons per year or more;
(b) For a single HAP is equal to or greater than 10 tons per year; or
(c) For a combination of HAPs is equal to or greater than 25 tons per year.

As shown in Table 2-1, and Appendix B, the PTE after controls of both air pollutants subject to regulation and HAPs of the equipment proposed under the project are below the major source thresholds shown above. Therefore, the requirement to obtain a Title V permit does not apply to the proposed facility. We request that NCDEQ make the proposed control devices practically enforceable as part of the construction and operation permit for the facility.

Pursuant to 15A NCAC 02Q .0315 "Synthetic Minor Facilities," to avoid the applicability of 15A NCAC 02Q .0501 "Purpose of Section and Requirement for a Permit," Sunrock requests facility-wide sulfur dioxide (SO_2) and carbon monoxide (CO) limitations to be less than 100 tons per consecutive 12-month period.

3.1.5 15A NCAC 02D .0506 Particulates from Hot Mix Asphalt Plants

Particulate matter emissions from a hot mix asphalt plant stack or chimney shall not exceed allowable emission rates calculated per the equation below.

The allowable emission rates are, as defined in 15A NCAC 2D .0506, a function of the process weight rate and shall be determined by the following equation (calculated to three significant figures), where P is the process throughput rate in tons per hour (tons/hr) and E is the allowable emission rate in pounds per hour (lbs/hr).

$E = 4.9445 * (P)^{0.4376}$ for $P < 300$ tons/hr, or
$E = 60$ lbs/hr for $P >= 300$ tons/hr

The maximum process weight rate for the proposed plant will be 250 tons/hour, the maximum allowable emission rate is 55.4 lb/hr. The proposed hot mix asphalt plant will be in compliance with the applicable limit by use of a bagfilter.

3.1.6 15A NCAC 02D .0510 Particulates from Sand, Gravel, or Crushed Stone Operations

This regulation will apply to the proposed recycled asphalt pavement (RAP) crushing system. As required by 15A NCAC 2D .0510 "Particulates from Sand, Gravel, or Crushed Stone Operations," the following requirements apply:

(a) The Permittee of a sand, gravel, RAP, or crushed stone operation shall not cause, allow, or permit any material to be produced, handled, transported, or stockpiled without taking measures to reduce to a minimum any particulate matter from becoming airborne to prevent exceeding the ambient air quality standards beyond the property line for particulate matter, both PM10 and total suspended particulates.

(b) Fugitive dust emissions from sand, gravel, RAP, or crushed stone operations shall be controlled by 15A NCAC 2D .0540 "Particulates from Fugitive Dust Emission Sources."

(c) The Permittee of any sand, gravel, RAP, or crushed stone operation shall control process-generated emissions:

i. From crushers with wet suppression (excluding RAP crushers); and
ii. From conveyors, screens, and transfer points

such that the applicable opacity standards in 15A NCAC 2D .0521 Control of Visible Emissions," or 15A NCAC 2D .0524 "New Source Performance standards" are not exceeded.

3.1.7 15A NCAC 02D .0515 Particulates from Miscellaneous Industrial Processes

The requirements of this regulation apply to the following truck mix concrete batch plant equipment: cement/flyash weigh batcher, cement/flyash silos, aggregate weigh batcher, and truck loadout point.

As required by 15A NCAC 02D .0515 "Particulates from Miscellaneous Industrial Processes," particulate matter emissions from the equipment subject to the regulation shall not exceed allowable emission rates. The allowable emission rates are, as defined in 15A NCAC 02D .0515, a function of the process weight rate and shall be determined by the following equation(s), where P is the process throughput rate in tons per hour (tons/hr) and E is the allowable emission rate in pounds per hour (lbs/hr).

$E = 4.10 * (P)^{0.67}$ for $P <= 30$ tons/hr, or
$E = 55 * (P)^{0.11} - 40$ for $P > 30$ tons/hr

The proposed concrete batch plant equipment will be in compliance with the applicable limit by use of a bagfilter.

3.1.8 15A NCAC 02D .0521 Control of Visible Emissions

Visible emissions from the emission sources, manufactured after July 1, 1971, shall not be more than 20 percent opacity when averaged over a six-minute period, except that six-minute periods averaging not more than 87 percent opacity may occur not more than once in any hour nor more than four times in any 24-hour period. However, sources which must comply with 15A NCAC 02D .0524 "New Source Performance Standards" or .1110 "National Emission Standards for Hazardous Air Pollutants" must comply with applicable visible emissions requirements contained therein. The equipment proposed for Truck Mix Concrete Batch Plant will be subject to the opacity standards under this regulation.

3.1.9 15A NCAC 02D .0540 Particulates from Fugitive Dust Emission Sources

The equipment proposed under the project shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints or excess visible emissions beyond the property boundary. If substantive complaints or excessive fugitive dust emissions from the facility are observed beyond the property boundaries for six minutes in any one hour (using Reference Method 22 in 40 CFR, Appendix A), the owner or operator may be required to submit a fugitive dust plan as described in 2D .0540(f).

"Fugitive dust emissions" means particulate matter that does not pass through a process stack or vent and that is generated within plant property boundaries from activities such as: unloading and loading areas, process areas stockpiles, stock pile working, plant parking lots, and plant roads (including access roads and haul roads).

3.1.10 15A NCAC 02D .0516 Sulfur Dioxide Emissions from Combustion Sources

As required by 15A NCAC 2D .0516 "Sulfur Dioxide Emissions from Combustion Sources," sulfur dioxide emissions from the combustion sources shall not exceed 2.3

pounds per MMBtu heat input. Based on the specifications for fuel, the combustion sources proposed in this application will comply with this regulation.

3.1.11 15A NCAC 02D .0535 Excess Emissions Reporting and Malfunctions

Per 15A NCAC 02D .0535, if a source of excess emissions lasts for more than four hours and results from a malfunction, a breakdown of process or control equipment or any other abnormal conditions, the facility shall:

(a) Notify the Director or his designee of any such occurrence by 9:00 a.m. Eastern time of the Division's next business day of becoming aware of the occurrence and describe:
   (i) the name and location of the facility,
   (ii) the nature and cause of the malfunction or breakdown,
   (iii) the time when the malfunction or breakdown is first observed,
   (iv) the expected duration, and
   (v) an estimated rate of emissions.
(b) Notify the Director or his designee immediately when the corrective measures have been accomplished.

3.1.12 15A NCAC 02D .1806 Control and Prohibition of Odorous Emissions

The facility shall not operate without implementing management practices or installing and operating odor control equipment sufficient to prevent odorous emissions from the facility from causing or contributing to objectionable odors beyond the facility's boundary.

3.2 Federal Regulations

This section summarizes the applicability of the federal regulations for the proposed project.

3.2.1 New Source Performance Standards

New Source Performance Standards ("NSPS") apply to new, modified, or reconstructed affected facilities as defined in specific standards. These requirements are codified under 40 CFR Part 60 and incorporated by reference under 15A NCAC 02D .0524. The

following subsections summarize the applicability of the federal NSPS to the proposed Project.

3.2.2 40 CFR 60, Subpart A, General Provisions

Subpart A contains the general provisions of the NSPS regulations. Specifically, the provisions of Subpart A apply to the owner or operator of any stationary source that contains an affected facility, construction or modification of which is commenced after the date of publication of the proposed standard; and is subject to any standard, limitation, prohibition, or other federally enforceable requirement established pursuant to Part 60. General requirements may include notifications, monitoring, recordkeeping and/or performance testing of specific sources. Sunrock will comply with the applicable general provisions requirements based on the applicability of NSPS 40 CFR 60 Subpart I for the Hot Mix Asphalt Plant and 40 CFR 60 Subpart OOO as discussed below.

3.2.3 40 CFR 60, Subpart I, Standards of Performance for Hot Mix Asphalt Facilities

This NSPS Subpart applies to hot mix asphalt facilities that commenced construction or modification after June 11, 1973. The proposed Hot Mix Asphalt Plant will be an affected facility under this standard. Per 40 CFR § 60.92, the Permittee shall not discharge into the atmosphere any gases which:

(a) Contain PM in excess of 90 mg/dscm (0.04 gr/dscf)
(b) Exhibit 20 percent opacity, or greater.

Per 40 CFR § 60.93, the facility shall conduct a performance test as required in §60.8, using the following test methods:

(a) Method 5 for determining compliance with PM standard
(b) Method 9 and §60.11 procedures for determining opacity

Sunrock will comply with the applicable requirements under this standard and the general provisions for the proposed Hot Mix Asphalt Plant.

3.2.4 40 CFR 60, Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants

This NSPS Subpart applies to crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement for which construction, modification, or reconstruction is started after August 31, 1983. Per 40 CFR § 60.670(a)(1), the provisions of this subpart are applicable to crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in RAP up to the first storage silo or bin. Therefore, the RAP Crushing System at the facility is subject to this standard including the RAP crusher, conveyor, and screen.

In accordance with Table 3 and 40 CFR § 60.672(b), for affected facilities that commence construction after April 22, 2008, the fugitive emission limit for the RAP Crushing System (crusher only) is 12 percent opacity. For the RAP conveyor and screen, the fugitive emissions limit is 7 percent opacity. The Permittee must demonstrate compliance with the opacity limits by conducting an initial performance test per 40 CFR § 60.11 and 40 CFR § 60.675 and perform periodic inspections of water sprays per 40 CFR § 60.674(b) and 40 CFR §60.676(b). The facility must also perform a repeat performance test within 5 years from the previous performance test from affected facilities without water sprays (facilities controlled by water carryover from upstream water sprays that are inspected are exempt from the repeat testing requirement).

3.2.5 National Emissions Standards for Hazardous Air Pollutants

National Emissions Standards for Hazardous Air Pollutants ("NESHAP") apply to new, existing, or reconstructed affected sources both at major sources and area sources as defined in specific standards. These requirements are codified under 40 CFR Part 63 and incorporated by reference under 15A NCAC 02D .1111. The proposed equipment does not belong to any of the source categories regulated under these standards.

APPENDIX A

APPLICATION FORMS

FORM A

GENERAL FACILITY INFORMATION

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **A**

NOTE- APPLICATION WILL NOT BE PROCESSED WITHOUT THE FOLLOWING

- ☑ Local Zoning Consistency Determination (new or modification only)
- ☑ Appropriate Number of Copies of Application
- ☑ Responsible Official/Authorized Contact Signature
- ☐ P.E. Seal (if required)

Application Fee (please check one option below)

☐ Not Required ☐ ePayment ☑ Check Enclosed

GENERAL INFORMATION

Legal Corporate/Owner Name: *Carolina Sunrock LLC*	
Site Name: *Burlington North*	
Site Address (911 Address) Line 1: *12971 North Carolina 62*	
Site Address Line 2:	
City: *Burlington*	State: *North Carolina*
Zip Code: *27217*	County: *Caswell*

CONTACT INFORMATION

Responsible Official/Authorized Contact:	***Invoice Contact:*** Carolina Sunrock LLC
Name/Title: *Gregg Bowler / CFO*	Name/Title: *Accounts Payable*
Mailing Address Line 1: *200 Horizon Drive, Suite 100*	Mailing Address Line 1: *200 Horizon Drive, Suite 100*
Mailing Address Line 2:	Mailing Address Line 2:
City: *Raleigh* State: *NC* Zip Code: *27615*	City: *Raleigh* State: *NC* Zip Code: *27615*
Primary Phone No.: *(919) 747-6400* Fax No.: *(919) 747-6305*	Primary Phone No.: *(919) 747-6400* Fax No.: *(919) 747-6357*
Secondary Phone No.:	Secondary Phone No.:
Email Address: *gbowler@thesunrockgroup.com*	Email Address: *ap@thesunrockgroup.com*
Facility/Inspection Contact:	***Permit/Technical Contact:***
Name/Title: *Scott Martino / Compliance Manager*	Name/Title: *Scott Martino / Compliance Manager*
Mailing Address Line 1: *200 Horizon Drive, Suite 100*	Mailing Address Line 1: *200 Horizon Drive, Suite 100*
Mailing Address Line 2:	Mailing Address Line 2:
City: *Raleigh* State: *NC* Zip Code: *27615*	City: *Raleigh* State: *NC* Zip Code: *27615*
Primary Phone No.: *(984) 202-4761* Fax No.: *(919) 747-6305*	Primary Phone No.: *(984) 202-4761* Fax No.: *(919) 747-6305*
Secondary Phone No.:	Secondary Phone No.:
Email Address: *smartino@thesunrockgroup.com*	Email Address: *smartino@thesunrockgroup.com*

APPLICATION IS BEING MADE FOR

☑ New Non-permitted Facility/Greenfield ☐ Modification of Facility (permitted) ☐ Renewal Title V ☐ Renewal Non-Title V

☐ Name Change ☐ Ownership Change ☐ Administrative Amendment ☐ Renewal with Modification

FACILITY CLASSIFICATION AFTER APPLICATION (Check Only One)

☐ General ☐ Small ☐ Prohibitory Small ☑ Synthetic Minor ☐ Title V

FACILITY (Plant Site) INFORMATION

Describe nature of (plant site) operation(s): *This is a proposal for a Drum Mix Hot Asphalt Plant and Truck Mix Concrete Plant.*

	Facility ID No.
Primary SIC/NAICS Code: *324121*	Current/Previous Air Permit No. *NA* Expiration Date:
Facility Coordinates: Latitude: *36 15' 03.51"*	Longitude: *79 19' 36.68"*

Does this application contain confidential data? ☐ YES ☑ NO — ***If yes, please contact the DAQ Regional Office prior to submitting this application.*** (See Instructions)

PERSON OR FIRM THAT PREPARED APPLICATION

Person Name: *David Keen*	Firm Name: *RTP Environmental Associates Inc.*
Mailing Address Line 1: *304A West Millbrook Road*	Mailing Address Line 2:
City: *Raleigh* State: *NC*	Zip Code: *27609* County: *Wake*
Phone No.: *(919) 845-1422, 41* Fax No.: *(919) 845-1424*	Email Address: *keen@rtpenv.com*

SIGNATURE OF RESPONSIBLE OFFICIAL/AUTHORIZED CONTACT

Name (typed): *Gregg M. Bowler*	Title: *CFO*
X Signature(Blue Ink):	Date: *9/10/19*

Attach Additional Sheets As Necessary

FORM A (continued, page 2 of 2)
GENERAL FACILITY INFORMATION

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SECTION AA1 - APPLICATION FOR NON-TITLE V PERMIT RENEWAL

_____ (Company Name) hereby formally requests renewal of Air Permit No. _____

There have been no modifications to the originally permitted facility or the operations therein that would require an air permit since the last permit was issued.

Is your facility subject to 40 CFR Part 68 "Prevnetion of Accidental Releases" - Section 112(r) of the Clean Air Act? ☐ YES ☐ NO

If yes, have you already submitted a Risk Manage Plan (RMP) to EPA? ☐ YES ☐ NO Date Submitted: _____

Did you attach a current emissions inventory? ☐ YES ☐ NO

If no, did you submit the inventory via AERO or by mail? ☐ Via AERO ☐ Mailed Date Mailed: _____

SECTION AA2- APPLICATION FOR TITLE V PERMIT RENEWAL

In accordance with the provisions of Title 15A 2Q .0513, the responsible official of _____ (Company Name)

hereby formally requests renewal of Air Permit No. _____ (Air Permit No.) and further certifies that:

(1) The current air quality permit identifies and describes all emissions units at the above subject facility, except where such units are exempted under the North Carolina Title V regulations at 15A NCAC 2Q .0500;

(2) The current air quality permit cits all applicable requirements and provides the method or methods for determing compliance with the applicable requirements;

(3) The facility is currently in compliance, and shall continue to comply, with all applicable requiremetns. (Note: As provided under 15A NCAC 2Q .0512 compliance with the conditions of the permit shall be deemed compliance with the applicable requirements specifically identified in the permit);

(4) For applicable requirements that become effective during the term of the renewed permit that the facility shall comply on a timely basis;

(5) The facility shall fulfill applicable enhanced monitoring requirements and submit a compliance certification as required by 40 CFR Part 64.

The responsible official (signature on page 1) certifies under the penalty of law that all information and statements provided above, based on information and belief formed after reasonable inquiry, are true, accurate, and complete.

SECTION AA3- APPLICATION FOR NAME CHANGE

New Facility Name: _____

Former Facility Name: _____

An official facility name change is requested as described above for the air permit mentioned on page 1 of this form. Complete the other sections if there have been modifications to the originally premitted facility that would requie an air quality permit since the last permit was issued and if ther has been an ownership change associated with this name change.

SECTION AA4- APPLICATION FOR AN OWNERSHIP CHANGE

By this application we hereby request transfer of Air Quality Permit No. _____ from the former owner to the new owner as described below.

The transfer of permit responsibility, coverage and liability shall be effective _____ (immediately or insert date.) The legal ownership of the facility described on page 1 of this form has been or will be transferred on _____ (date). There have been no modifications to the originally permitted facility that would require an air quality permit since the last permit was issued.

Signature of New (Buyer) Responsible Official/Authorized Contact (as typed on page 1):

X Signature (Blue Ink): _____

Date:

New Facility Name:

Former Facility Name:

Signature of Former (Seller) Responsible Official/Authorized Contact:

Name (typed or print):

Title:

X Signature (Blue Ink): _____

Date:

Former Legal Corporate/Owner Name:

In lieu of the seller's signature on this form, a letter may be submitted with the seller's signature indicating the ownership change

SECTION AA5- APPLICATION FOR ADMINISTRATIVE AMENDMENT

Describe the requested administrative amendment here (attach additional documents as necessary):

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 09/22/16 NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
Equipment To Be ADDED By This Application (New, Previously Unpermitted, or Replacement)			
	Drum Mix Asphalt Plant (250 TPH) consisting of:		
HMA-1	Propane/Natural Gas/No. 2 Fuel Oil/Recycled No. 2 Fuel Oil/Recycled No. 4 Fuel Oil-fired drum type hot asphalt plant (80 MMBtu/hr maximum heat input capacity)	HMA CD1	Bagfilter
HMA-Silo1	Hot mix asphalt storage silo (150 tons maximum capacity)	NA	NA
HMA-Silo2	Hot mix asphalt storage silo (150 tons maximum capacity)	NA	NA
HMA-Silo3	Hot mix asphalt storage silo (100 tons maximum capacity)	NA	NA
HMA-Silo4	Hot mix asphalt storage silo (100 tons maximum capacity)	NA	NA
HMA-Silo5	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA-LO1	Asphalt Loadout	NA	NA
HMA-LO2	Truck Loadout Operation	NA	NA
	RAP Crushing System consisting of:		
RAP-CRSH	One Crusher (65 tph)	NA	NA
RAP-CNV	Four Conveyors	NA	NA
RAP-SCN	One Screen		
	Truck Mix Concrete Batch Plant (120 Cub Yard/H) Consisting		
RM-1	Cement Silo (185 tons)	RMC CD2	Bagfilter
RM-2	Fly Ash Silo (135 tons)	RMC CD2	Bagfilter
RM-3	Truck Loadout Point	RMC CD2	Bagfilter
RM-4	Cement/Flyash Weigh Batcher (25 tons)	RMC CD2	Bagfilter
RM-5	Aggregate Weigh Batcher (50 tons)	RMC CD2	Bagfilter
Existing Permitted Equipment To Be MODIFIED By This Application			
Equipment To Be DELETED By This Application			

112(r) APPLICABILITY INFORMATION **A 3**

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? ☐ Yes ☑ No

If No, please specify in detail how your facility avoided applicability: Does not use any regulated toxics and flammable substances.

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

☐ Yes ☐ No Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

☐ Yes ☐ No If yes, please specify: _____

C. List the processes subject to 112(r) at your facility:

PROCESS DESCRIPTION	PROCESS LEVEL (1, 2, or 3)	HAZARDOUS CHEMICAL	MAXIMUM INTENDED INVENTORY (LBS)

Attach Additional Sheets As Necessary

FORM D1

FACILITY-WIDE EMISSIONS SUMMARY

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | D1

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION - FACILITY-WIDE

AIR POLLUTANT EMITTED	EXPECTED ACTUAL EMISSIONS (AFTER CONTROLS / LIMITATIONS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITATIONS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITATIONS) tons/yr
PARTICULATE MATTER (PM)			
PARTICULATE MATTER < 10 MICRONS (PM_{10})			
PARTICULATE MATTER < 2.5 MICRONS ($PM_{2.5}$)			
SULFUR DIOXIDE (SO_2)			
NITROGEN OXIDES (NOx)			
CARBON MONOXIDE (CO)			
VOLATILE ORGANIC COMPOUNDS (VOC)			
LEAD			
GREENHOUSE GASES (GHG) (SHORT TONS)			
OTHER			

SEE APPENDIX B OF THE APPLICATION

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION - FACILITY-WIDE

HAZARDOUS AIR POLLUTANT EMITTED	CAS NO.	EXPECTED ACTUAL EMISSIONS (AFTER CONTROLS / LIMITATIONS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITATIONS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITATIONS) tons/yr

TOXIC AIR POLLUTANT EMISSIONS INFORMATION - FACILITY-WIDE

INDICATE REQUESTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS. EMISSIONS ABOVE THE TOXIC PERMIT EMISSION RATE (TPER) IN 15A NCAC 2Q .0711 MAY REQUIRE AIR DISPERSION MODELING. USE NETTING FORM D2 IF NECESSARY.

TOXIC AIR POLLUTANT EMITTED	CAS NO.	lb/hr	lb/day	lb/year	Modeling Required ? Yes	No

COMMENTS:

Attach Additional Sheets As Necessary

FORM D4

EXEMPT AND INSIGNIFICANT ACTIVITIES SUMMARY

REVISED 09/22/16 NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate **D4**

ACTIVITIES EXEMPTED PER 2Q .0102 OR INSIGNIFICANT ACTIVITIES PER 2Q .0503 FOR TITLE V SOURCES

DESCRIPTION OF EMISSION SOURCE	SIZE OR PRODUCTION RATE	BASIS FOR EXEMPTION OR INSIGNIFICANT ACTIVITY
1. *30,000 gal liquid asphalt tank*	*30,000 gal*	*15A NCAC 2Q .0102(g)(4)*
2. *20,000 gal liquid asphalt tank*	*20,000 gal*	*15A NCAC 2Q .0102(g)(4)*
3. *20,000 gal gasoline fuel*	*20,000 gal*	*15A NCAC 2Q .0102(g)(4)*
4. *Natural Gas/No. 2 Fuel Oil-fired Asphalt Cement Heater (Heatec HCS-70 Heater)*	*1.2 MMBtu/hr*	*15A NCAC 2Q .0102(h)(1)(A)*
5. *al Gas/No. 2 Fuel Oil-fired Liquid Asphalt Tank Heater (Heatec Di eater)*	*1.1 MMBtu/hr*	*15A NCAC 2Q .0102(h)(1)(A)*
6. *20,000 gal #4 oil or used oil*	*20,000 gal*	*15A NCAC 2Q .0102(g)(4)*
7. *20,000 gal #4 oil or used oil*	*20,000 gal*	*15A NCAC 2Q .0102(g)(4)*
8.		
9.		
10.		

Attach Additional Sheets As Necessary

FORM D5

TECHNICAL ANALYSIS TO SUPPORT PERMIT APPLICATION

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | D5

PROVIDE DETAILED TECHNICAL CALCULATIONS TO SUPPORT ALL EMISSION, CONTROL, AND REGULATORY DEMONSTRATIONS MADE IN THIS APPLICATION. INCLUDE A COMPREHENSIVE PROCESS FLOW DIAGRAM AS NECESSARY TO SUPPORT AND CLARIFY CALCULATIONS AND ASSUMPTIONS. ADDRESS THE FOLLOWING SPECIFIC ISSUES ON SEPARATE PAGES:

A **SPECIFIC EMISSIONS SOURCE (EMISSION INFORMATION) (FORM B and B1 through B9) -** SHOW CALCULATIONS USED, INCLUDING EMISSION FACTORS, MATERIAL BALANCES, AND/OR OTHER METHODS FROM WHICH THE POLLUTANT EMISSION RATES IN THIS APPLICATION WERE DERIVED. INCLUDE CALCULATION OF POTENTIAL BEFORE AND, WHERE APPLICABLE, AFTER CONTROLS. CLEARLY STATE ANY ASSUMPTIONS MADE AND PROVIDE ANY REFERENCES AS NEEDED TO SUPPORT MATERIAL BALANCE CALCULATIONS.

B **SPECIFIC EMISSION SOURCE (REGULATORY INFORMATION)(FORM E2 - TITLE V ONLY) -** PROVIDE AN ANALYSIS OF ANY REGULATIONS APPLICABLE TO INDIVIDUAL SOURCES AND THE FACILITY AS A WHOLE. INCLUDE A DISCUSSION OUTING METHODS (e.g. FOR TESTING AND/OR MONITORING REQUIREMENTS) FOR COMPLYING WITH APPLICABLE REGULATIONS, PARTICULARLY THOSE REGULATIONS LIMITING EMISSIONS BASED ON PROCESS RATES OR OTHER OPERATIONAL PARAMETERS. PROVIDE JUSTIFICATION FOR AVOIDANCE OF ANY FEDERAL REGULATIONS (PREVENTION OF SIGNIFICANT DETERIORATION (PSD), NEW SOURCE PERFORMANCE STANDARDS (NSPS), NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS), TITLE V), INCLUDING EXEMPTIONS FROM THE FEDERAL REGULATIONS WHICH WOULD OTHERWISE BE APPLICABLE TO THIS FACILITY. SUBMIT ANY REQUIRED INFORMATION TO DOCUMENT COMPLIANCE WITH ANY REGULATIONS. INCLUDE EMISSION RATES CALCULATED IN ITEM "A" ABOVE, DATES OF MANUFACTURE, CONTROL EQUIPMENT, ETC. TO SUPPORT THESE CALCULATIONS.

C **CONTROL DEVICE ANALYSIS (FORM C and C1 through C9) -** PROVIDE A TECHNICAL EVALUATION WITH SUPPORTING REFERENCES FOR ANY CONTROL EFFICIENCIES LISTED ON SECTION C FORMS, OR USED TO REDUCE EMISSION RATES IN CALCULATIONS UNDER ITEM "A" ABOVE. INCLUDE PERTINENT OPERATING PARAMETERS (e.g. OPERATING CONDITIONS, MANUFACTURING RECOMMENDATIONS, AND PARAMETERS AS APPLIED FOR IN THIS APPLICATION) CRITICAL TO ENSURING PROPER PERFORMANCE OF THE CONTROL DEVICES). INCLUDE AND LIMITATIONS OR MALFUNCTION POTENTIAL FOR THE PARTICULAR CONTROL DEVICES AS EMPLOYED AT THIS FACILITY. DETAIL PROCEDURES FOR ASSURING PROPER OPERATION OF THE CONTROL DEVICE INCLUDING MONITORING SYSTEMS AND MAINTENANCE TO BE PERFORMED.

D **PROCESS AND OPERATIONAL COMPLIANCE ANALYSIS - (FORM E3 - TITLE V ONLY) -** SHOWING HOW COMPLIANCE WILL BE ACHIEVED WHEN USING PROCESS, OPERATIONAL, OR OTHER DATA TO DEMONSTRATE COMPLIANCE. REFER TO COMPLIANCE REQUIREMENTS IN THE REGULATORY ANALYSIS IN ITEM "B" WHERE APPROPRIATE. LIST ANY CONDITIONS OR PARAMETERS THAT CAN BE MONITORED AND REPORTED TO DEMONSTRATE COMPLIANCE WITH THE APPLICABLE REGULATIONS.

E **PROFESSIONAL ENGINEERING SEAL -** PURSUANT TO 15A NCAC 2Q .0112 "APPLICATION REQUIRING A PROFESSIONAL ENGINEERING SEAL," A PROFESSIONAL ENGINEER REGISTERED IN NORTH CAROLINA SHALL BE REQUIRED TO SEAL TECHNICAL PORTIONS OF THIS APPLICATION FOR NEW SOURCES AND MODIFICATIONS OF EXISTING SOURCES. (SEE INSTRUCTIONS FOR FURTHER APPLICABILITY).

I, ***Ted S. White,*** *attest that this application for* ***Carolina Sunrock LLC - BURLINGTON*** *has been reviewed by me and is accurate, complete and consistent with the information supplied in the engineering plans, calculations, and all other supporting documentation to the best of my knowledge. I further attest that to the best of my knowledge the proposed design has been prepared in accordance with the applicable regulations. Although certain portions of this submittal package may have been developed by other professionals, inclusion of these materials under my seal signifies that I have reviewed this material and have judged it to be consistent with the proposed design. Note: In accordance with NC General Statutes 143-215.6A and 143-215.6B, any person who knowingly makes any false statement, representation, or certification in any application shall be guilty of a Class 2 misdemeanor which may include a fine not to exceed $10,000 as well as civil penalties up to $25,000 per violation.*

(PLEASE USE BLUE INK TO COMPLETE THE FOLLOWING)

NAME: Ted S. White

DATE: 9-13-2019

COMPANY: RTP Environmental Assoc., Inc.

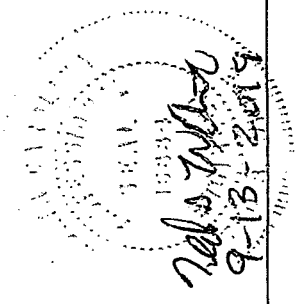
ADDRESS: 304-A W. Millbrook Rd., Raleigh, NC 27609

TELEPHONE: (919) 812-0461

SIGNATURE: Ted S. White

PAGES CERTIFIED: FORM C1 for HMA-CD1

PLACE NORTH CAROLINA SEAL HERE



(IDENTIFY ABOVE EACH PERMIT FORM AND ATTACHMENT THAT IS BEING CERTIFIED BY THIS SEAL)

Attach Additional Sheets As Necessary

FORM B

SPECIFIC EMISSION SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — B

EMISSION SOURCE DESCRIPTION: *250 TPH HMA Double barrel DRUM PLANT*	EMISSION SOURCE ID NO: *HMA-1*
	CONTROL DEVICE ID NO(S): *HMA-CD1*
OPERATING SCENARIO 1 OF 1	EMISSION POINT (STACK) ID NO(S): *EP-1*

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):

1. Drying of aggregate (drying drum) 2. Mixing of Aggregate, rap and liquid asphalt (mixing drum) 3. Storage of final Product (silos)

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

- [x] Coal,wood,oil, gas, other burner (Form B1)
- [ ] Int.combustion engine/generator (Form B2)
- [x] Liquid storage tanks (Form B3)
- [ ] Woodworking (Form B4)
- [ ] Coating/finishing/printing (Form B5)
- [x] Storage silos/bins (Form B6)
- [ ] Manuf. of chemicals/coatings/inks (Form B7)
- [ ] Incineration (Form B8)
- [x] Other (Form B9)

START CONSTRUCTION DATE: DATE MANUFACTURED:

MANUFACTURER / MODEL NO.: *Astec* EXPECTED OP. SCHEDULE: 10 HR/DAY 6 DAY/WK 50 WK/YR

IS THIS SOURCE SUBJECT TO? [x] NSPS (SUBPARTS?): I [ ] NESHAP (SUBPARTS?):

PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB 15 MAR-MAY 30 JUN-AUG 30 SEP-NOV 25

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)							
PARTICULATE MATTER<10 MICRONS (PM_{10})							
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)		*SEE APPENDIX B*					
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
V[illegible]LE ORGANIC COMPOUNDS (VOC)							
LE[illegible]							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT	CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) tons/yr
		SEE APPENDIX B						

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

TOXIC AIR POLLUTANT	CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS lb/hr	lb/day	lb/yr
		SEE APPENDIX B			

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) describe any monitoring devices, gauges, or test ports for this source.

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURCE

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | B9

EMISSION SOURCE DESCRIPTION: *250 TPH HMA Double barrel DRUM PLANT*	EMISSION SOURCE ID NO: *HMA-1*
	CONTROL DEVICE ID NO(S): *HMA-CD1*
OPERATING SCENARIO: 1 OF 1	EMISSION POINT (STACK) ID NO(S): *EP-1*

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

1. DRYING OF AGGREGATE (DRYING DRUM)
2. MIXING OF AGGREGATE AND RAP WITH LIQUID ASPHALT (MIXING DRUM)
3. STORAGE OF FINAL PRODUCT (Silos)

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Aggregate (virgin and RAP)	*tons*	*250*	*250*
Liquid AC	*tons*	*12*	*12*

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED: *NG/#2/ REC #2/ REC #4*	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR): *80*
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B1

EMISSION SOURCE (WOOD, COAL, OIL, GAS, OTHER FUEL-FIRED BURNER)

REVISED 09/22/16 — **NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate** — **B1**

EMISSION SOURCE DESCRIPTION: *HMA Drum Plant Dryer Heater (Hauck, 80 MMBTU/hr burner)*	EMISSION SOURCE ID NO: *HMA-1*
	CONTROL DEVICE ID NO(S): *HMA-CD1*
OPERATING SCENARIO: 1 OF 1	EMISSION POINT (STACK) ID NO(S): *EP-1*

DESCRIBE USE: ☑ PROCESS HEAT ☐ SPACE HEAT ☐ ELECTRICAL GENERATION
☐ CONTINUOUS USE ☐ STAND BY/EMERGENCY ☐ OTHER (DESCRIBE): _____

HEATING MECHANISM: ☐ INDIRECT ☑ DIRECT

MAX. FIRING RATE (MMBTU/HOUR): *80*

WOOD-FIRED BURNER

WOOD TYPE: ☐ BARK ☐ WOOD/BARK ☐ WET WOOD ☐ DRY WOOD ☐ OTHER (DESCRIBE): _____

PERCENT MOISTURE OF FUEL: _____

☐ UNCONTROLLED ☐ CONTROLLED WITH FLYASH REINJECTION ☐ CONTROLLED W/O REINJECTION

FUEL FEED METHOD: HEAT TRANSFER MEDIA: ☐ STEAM ☐ AIR ☐ OTHER (DESCRIBE) _____

COAL-FIRED BURNER

TYPE OF BOILER — IF OTHER DESCRIBE:

PULVERIZED	OVERFEED STOKER	UNDERFEED STOKER	SPREADER STOKER	FLUIDIZED BED
☐ WET BED	☐ UNCONTROLLED	☐ UNCONTROLLED	☐ UNCONTROLLED	☐ CIRCULATING
☐ DRY BED	☐ CONTROLLED	☐ CONTROLLED	☐ FLYASH REINJECTION	☐ RECIRCULATING
			☐ NO FLYASH REINJECTION	

OIL/GAS-FIRED BURNER

TYPE OF BOILER: ☐ UTILITY ☑ INDUSTRIAL ☐ COMMERCIAL ☐ INSTITUTIONAL

TYPE OF FIRING: ☑ NORMAL ☐ TANGENTIAL ☐ LOW NOX BURNERS ☐ NO LOW NOX BURNER

OTHER FUEL-FIRED BURNER

TYPE(S) OF FUEL: _____ PE

TYPE OF BOILER: ☐ UTILITY ☐ INDUSTRIAL ☐ COMMERCIAL ☐ INSTITUTIONAL

TYPE OF FIRING: _____ TYPE(S) OF CONTROL(S) (IF ANY): _____

FUEL USAGE (INCLUDE STARTUP/BACKUP FUELS)

FUEL TYPE	UNITS	MAXIMUM DESIGN CAPACITY (UNIT/HR)	REQUESTED CAPACITY LIMITATION (UNIT/HR)
Propane/NG/ #2/ Rec #2/ Rec #4	*cf/gallons*	*80 MMBtu/hour*	

FUEL CHARACTERISTICS (COMPLETE ALL THAT ARE APPLICABLE)

FUEL TYPE	SPECIFIC BTU CONTENT	SULFUR CONTENT (% BY WEIGHT)	ASH CONTENT (% BY WEIGHT)

COMMENTS:

Attach Additional Sheets As Necessary

FORM B6

EMISSION SOURCE (STORAGE SILO/BINS)

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | B6

:SION SOURCE DESCRIPTION: *HMA Drum Plant - Hot Mix Asphalt Silo 1*	EMISSION SOURCE ID NO: *HMA-Silo1*
	CONTROL DEVICE ID NO(S): *HMA-CD1*
OPERATING SCENARIO: 1 OF 1	EMISSION POINT(STACK) ID NO(S): *EP-1*

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):
1. DRYING OF AGGREGATE (DRYING DRUM)
2. Mixing of aggregate and rap with liquid asphalt (mixing drum)
3. Storage of final product (silos)

MATERIAL STORED: *Hot Mix Asphalt*				DENSITY OF MATERIAL (LB/FT3):	
CAPACITY	CUBIC FEET:			TONS: *150*	
DIMENSIONS (FEET)	HEIGHT:	DIAMETER:	***(OR)***	LENGTH: WIDTH:	HEIGHT:
ANNUAL PRODUCT THROUGHPUT (TONS)	ACTUAL:			MAXIMUM DESIGN CAPACITY:	

PNEUMATICALLY FILLED	MECHANICALLY FILLED	FILLED FROM
☐ BLOWER	☐ SCREW CONVEYOR	☐ RAILCAR
☐ COMPRESSOR	☐ BELT CONVEYOR	☐ TRUCK
☐ OTHER:	☑ BUCKET ELEVATOR	☐ STORAGE PILE
	☐ OTHER:	☑ OTHER: *Plant*

NO. FILL TUBES:
iMUM ACFM:

MATERIAL IS UNLOADED TO:

BY WHAT METHOD IS MATERIAL UNLOADED FROM SILO?
Gravity

MAXIMUM DESIGN FILLING RATE OF MATERIAL (TONS/HR):

MAXIMUM DESIGN UNLOADING RATE OF MATERIAL (TONS/HR):

COMMENTS:
OIL FILLED SEAL AT TOP OF SILO.

Attach Additional Sheets As Necessary

FORM B6

EMISSION SOURCE (STORAGE SILO/BINS)

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **B6**

SION SOURCE DESCRIPTION: *HMA Drum Plant - Hot Mix Asphalt Silo 2*	EMISSION SOURCE ID NO: *HMA-Silo2*
	CONTROL DEVICE ID NO(S): *HMA-CD1*
OPERATING SCENARIO: 1 OF 1	EMISSION POINT(STACK) ID NO(S): *EP-1*

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):
1. DRYING OF AGGREGATE (DRYING DRUM)
2. Mixing of aggregate and rap with liquid asphalt (mixing drum)
3. Storage of final product (silos)

MATERIAL STORED: *Hot Mix Asphalt*				DENSITY OF MATERIAL (LB/FT3):	
CAPACITY	CUBIC FEET:			TONS: *150*	
DIMENSIONS (FEET)	HEIGHT:	DIAMETER:	***(OR)***	LENGTH:	WIDTH: HEIGHT:
ANNUAL PRODUCT THROUGHPUT (TONS)	ACTUAL:			MAXIMUM DESIGN CAPACITY:	

PNEUMATICALLY FILLED	MECHANICALLY FILLED	FILLED FROM
☐ BLOWER	☐ SCREW CONVEYOR	☐ RAILCAR
☐ COMPRESSOR	☐ BELT CONVEYOR	☐ TRUCK
☐ OTHER:	☑ BUCKET ELEVATOR	☐ STORAGE PILE
	☐ OTHER:	☑ OTHER: *Plant*

NO. FILL TUBES:
MUM ACFM:

MATERIAL IS UNLOADED TO:

BY WHAT METHOD IS MATERIAL UNLOADED FROM SILO?
Gravity

MAXIMUM DESIGN FILLING RATE OF MATERIAL (TONS/HR):

MAXIMUM DESIGN UNLOADING RATE OF MATERIAL (TONS/HR):

COMMENTS:
OIL FILLED SEAL AT TOP OF SILO.

Attach Additional Sheets As Necessary

FORM B6

EMISSION SOURCE (STORAGE SILO/BINS)

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **B6**

SION SOURCE DESCRIPTION: *HMA Drum Plant - Hot Mix Asphalt Silo 3*	EMISSION SOURCE ID NO: *HMA-Silo3*
	CONTROL DEVICE ID NO(S): *HMA-CD1*
OPERATING SCENARIO: 1 OF 1	EMISSION POINT(STACK) ID NO(S): *EP-1*

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):
1. DRYING OF AGGREGATE (DRYING DRUM)
2. Mixing of aggregate and rap with liquid asphalt (mixing drum)
3. Storage of final product (silos)

MATERIAL STORED: *Hot Mix Asphalt*				DENSITY OF MATERIAL (LB/FT3):	
CAPACITY	CUBIC FEET:			TONS: *100*	
DIMENSIONS (FEET)	HEIGHT:	DIAMETER:	***(OR)***	LENGTH: WIDTH:	HEIGHT:
ANNUAL PRODUCT THROUGHPUT (TONS)	ACTUAL:			MAXIMUM DESIGN CAPACITY:	

PNEUMATICALLY FILLED	MECHANICALLY FILLED	FILLED FROM
☐ BLOWER	☐ SCREW CONVEYOR	☐ RAILCAR
☐ COMPRESSOR	☐ BELT CONVEYOR	☐ TRUCK
☐ OTHER:	☑ BUCKET ELEVATOR	☐ STORAGE PILE
	☐ OTHER:	☑ OTHER: *Plant*

NO FILL TUBES:
MUM ACFM:

MATERIAL IS UNLOADED TO:

BY WHAT METHOD IS MATERIAL UNLOADED FROM SILO?
Gravity

MAXIMUM DESIGN FILLING RATE OF MATERIAL (TONS/HR):

MAXIMUM DESIGN UNLOADING RATE OF MATERIAL (TONS/HR):

COMMENTS:
OIL FILLED SEAL AT TOP OF SILO.

Attach Additional Sheets As Necessary

FORM B6

EMISSION SOURCE (STORAGE SILO/BINS)

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **B6**

SION SOURCE DESCRIPTION: *HMA Drum Plant - Hot Mix Asphalt Silo 4*	EMISSION SOURCE ID NO: *HMA-Silo4*
	CONTROL DEVICE ID NO(S): *HMA-CD1*
OPERATING SCENARIO: 1 OF 1	EMISSION POINT(STACK) ID NO(S): *EP-1*

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):
1. DRYING OF AGGREGATE (DRYING DRUM)
2. Mixing of aggregate and rap with liquid asphalt (mixing drum)
3. Storage of final product (silos)

MATERIAL STORED: *Hot Mix Asphalt*				DENSITY OF MATERIAL (LB/FT3):	
CAPACITY	CUBIC FEET:			TONS: *100*	
DIMENSIONS (FEET)	HEIGHT:	DIAMETER:	***(OR)***	LENGTH: WIDTH:	HEIGHT:
ANNUAL PRODUCT THROUGHPUT (TONS)	ACTUAL:			MAXIMUM DESIGN CAPACITY:	

PNEUMATICALLY FILLED	MECHANICALLY FILLED	FILLED FROM
☐ BLOWER	☐ SCREW CONVEYOR	☐ RAILCAR
☐ COMPRESSOR	☐ BELT CONVEYOR	☐ TRUCK
☐ OTHER:	☑ BUCKET ELEVATOR	☐ STORAGE PILE
	☐ OTHER:	☑ OTHER: *Plant*

NO FILL TUBES:
MUM ACFM:

MATERIAL IS UNLOADED TO:

BY WHAT METHOD IS MATERIAL UNLOADED FROM SILO?
Gravity

MAXIMUM DESIGN FILLING RATE OF MATERIAL (TONS/HR):

MAXIMUM DESIGN UNLOADING RATE OF MATERIAL (TONS/HR):

COMMENTS:
OIL FILLED SEAL AT TOP OF SILO.

Attach Additional Sheets As Necessary

FORM B6

EMISSION SOURCE (STORAGE SILO/BINS)

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — B6

SION SOURCE DESCRIPTION: *HMA Drum Plant - Hot Mix Asphalt Silo 5*	EMISSION SOURCE ID NO: *HMA-Silo5*
	CONTROL DEVICE ID NO(S): *HMA-CD1*
OPERATING SCENARIO: 1 OF 1	EMISSION POINT(STACK) ID NO(S): *EP-1*

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):
1. DRYING OF AGGREGATE (DRYING DRUM)
2. Mixing of aggregate and rap with liquid asphalt (mixing drum)
3. Storage of final product (silos)

MATERIAL STORED: *Hot Mix Asphalt*				DENSITY OF MATERIAL (LB/FT3):	
CAPACITY	CUBIC FEET:			TONS: 200	
DIMENSIONS (FEET)	HEIGHT:	DIAMETER:	***(OR)***	LENGTH: WIDTH:	HEIGHT:
ANNUAL PRODUCT THROUGHPUT (TONS)	ACTUAL:			MAXIMUM DESIGN CAPACITY:	

PNEUMATICALLY FILLED	MECHANICALLY FILLED	FILLED FROM
☐ BLOWER	☐ SCREW CONVEYOR	☐ RAILCAR
☐ COMPRESSOR	☐ BELT CONVEYOR	☐ TRUCK
☐ OTHER:	☑ BUCKET ELEVATOR	☐ STORAGE PILE
	☐ OTHER:	☑ OTHER: *Plant*

NO. FILL TUBES:
.MUM ACFM:

MATERIAL IS UNLOADED TO:

BY WHAT METHOD IS MATERIAL UNLOADED FROM SILO?
Gravity

MAXIMUM DESIGN FILLING RATE OF MATERIAL (TONS/HR):

MAXIMUM DESIGN UNLOADING RATE OF MATERIAL (TONS/HR):

COMMENTS:
OIL FILLED SEAL AT TOP OF SILO.

Attach Additional Sheets As Necessary

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | C1

CONTROL DEVICE ID NO: *HMA-CD1*	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): *See Form A2&A3*
EMISSION POINT (STACK) ID NO(S): *EP-1*	POSITION IN SERIES OF CONTROLS NO. 1 OF 1 UNITS
OPERATING SCENARIO:	
1 OF 1	P.E. SEAL REQUIRED (PER 2q .0112)? ☑ YES ☐ NO

DESCRIBE CONTROL SYSTEM: *Astec Model RBH-51 - 51,111 CFM to control emissions from drying and mixing drums in the HMA Plant.*
(768) 4-5/8" Ø x 10' long 14oz aramid bags
o 9,299 ft2 cloth area; 5.5 fpm filtering velocity (Air/Cloth Ratio)
o 41-5/8" ID stack; 31'-0" discharge height above grade
o Integral 9' Ø x 10' long horizontal cyclone primary collector

POLLUTANTS COLLECTED:	*PM*	*PM10*		
BEFORE CONTROL EMISSION RATE (LB/HR):	*118*	*58*		
CAPTURE EFFICIENCY:	*~100* %	*~100* %	%	%
CONTROL DEVICE EFFICIENCY:	*~93* %	*~90* %	%	%
CORRESPONDING OVERALL EFFICIENCY:	*93* %	*90* %	%	%
EFFICIENCY DETERMINATION CODE:	*1*	*1*		
TOTAL AFTER CONTROL EMISSION RATE (LB/HR):	*8.25*	*5.75*		

PRESSURE DROP (IN H_2O): MIN: *TBD* MAX: *TBD* GAUGE? ☐ YES ☑ NO			
BULK PARTICLE DENSITY (LB/FT^3): *0.000038*	INLET TEMPERATURE (°F): MIN *Ambient*	MAX *325*	
POLLUTANT LOADING RATE: *118* ☑ LB/HR ☐ GR/FT^3	OUTLET TEMPERATURE (°F) MIN *Ambient*	MAX *325*	
INLET AIR FLOW RATE (ACFM): *51,111*	FILTER OPERATING TEMP (°F): *325*		
NO. OF COMPARTMENTS: *3*	NO. OF BAGS PER COMPARTMENT: *256*	LENGTH OF BAG (IN.): *120.5*	
NO. OF CARTRIDGES: *768*	FILTER SURFACE AREA PER CARTRIDGE (FT^2): *12.11*	DIAMETER OF BAG (IN.): *4-5/8*	
TOTAL FILTER SURFACE AREA (FT^2): *9,299*	AIR TO CLOTH RATIO: *5.5*		
DRAFT TYPE: ☐ INDUCED/NEGATIVE ☑ FORCED/POSITIVE	FILTER MATERIAL: ☑ WOVEN ☐ FELTED		

DESCRIBE CLEANING PROCEDURES:

- ☑ AIR PULSE
- ☐ REVERSE FLOW
- ☐ MECHANICAL/SHAKER
- ☐ OTHER:
- ☐ SONIC
- ☐ SIMPLE BAG COLLAPSE
- ☐ RING BAG COLLAPSE

DESCRIBE INCOMING AIR STREAM: *Hot air from drying and mixing drums in HMA plant*

PARTICLE SIZE DISTRIBUTION

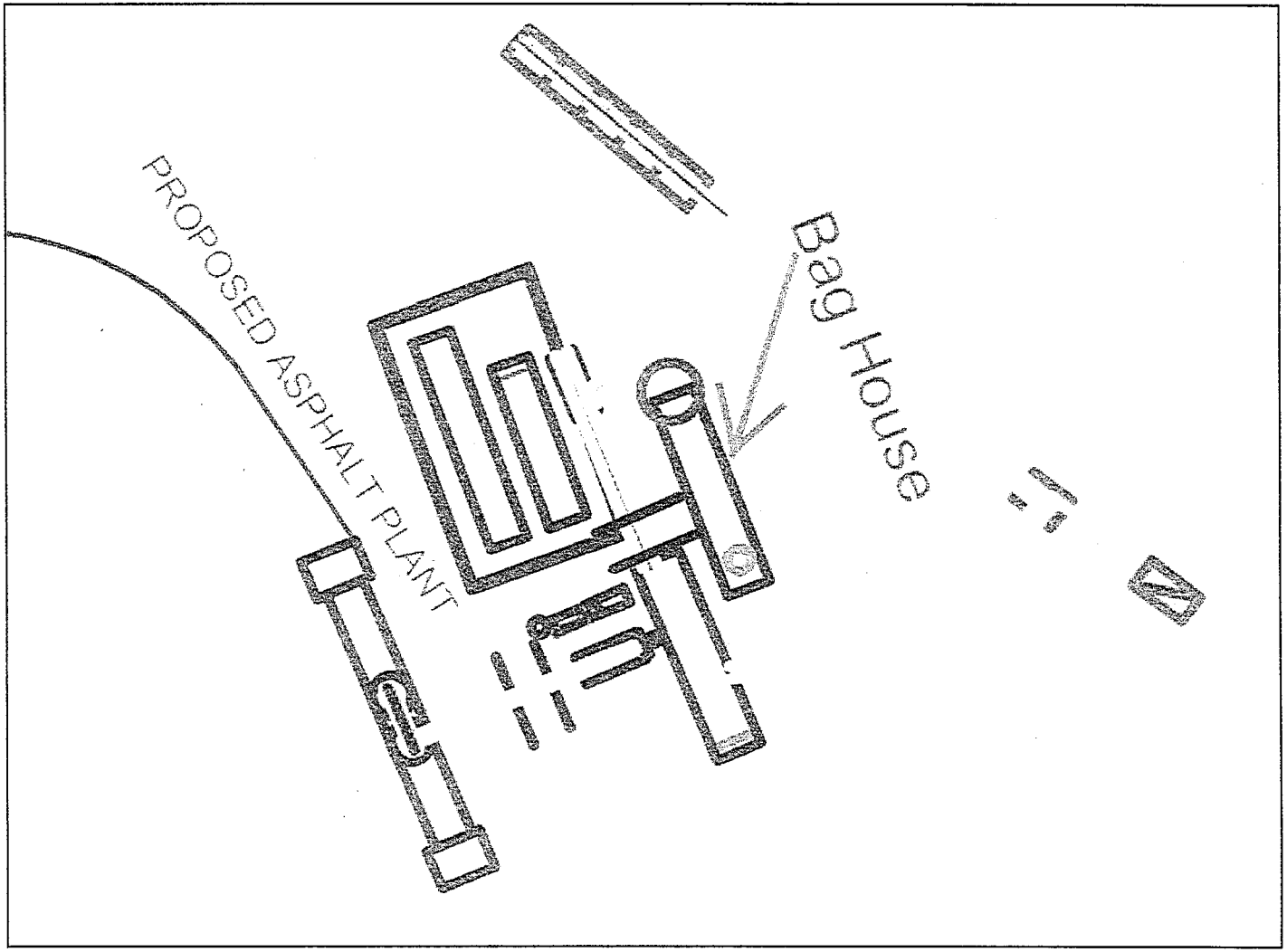
SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1	*TBD*	*TBD*
1-10	*TBD*	*TBD*
10-25	*TBD*	*TBD*
25-50	*TBD*	*TBD*
50-100	*TBD*	*TBD*
>100	*TBD*	*TBD*
	TOTAL = 100	

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

COMMENTS:

Attach Additional Sheets As Necessary

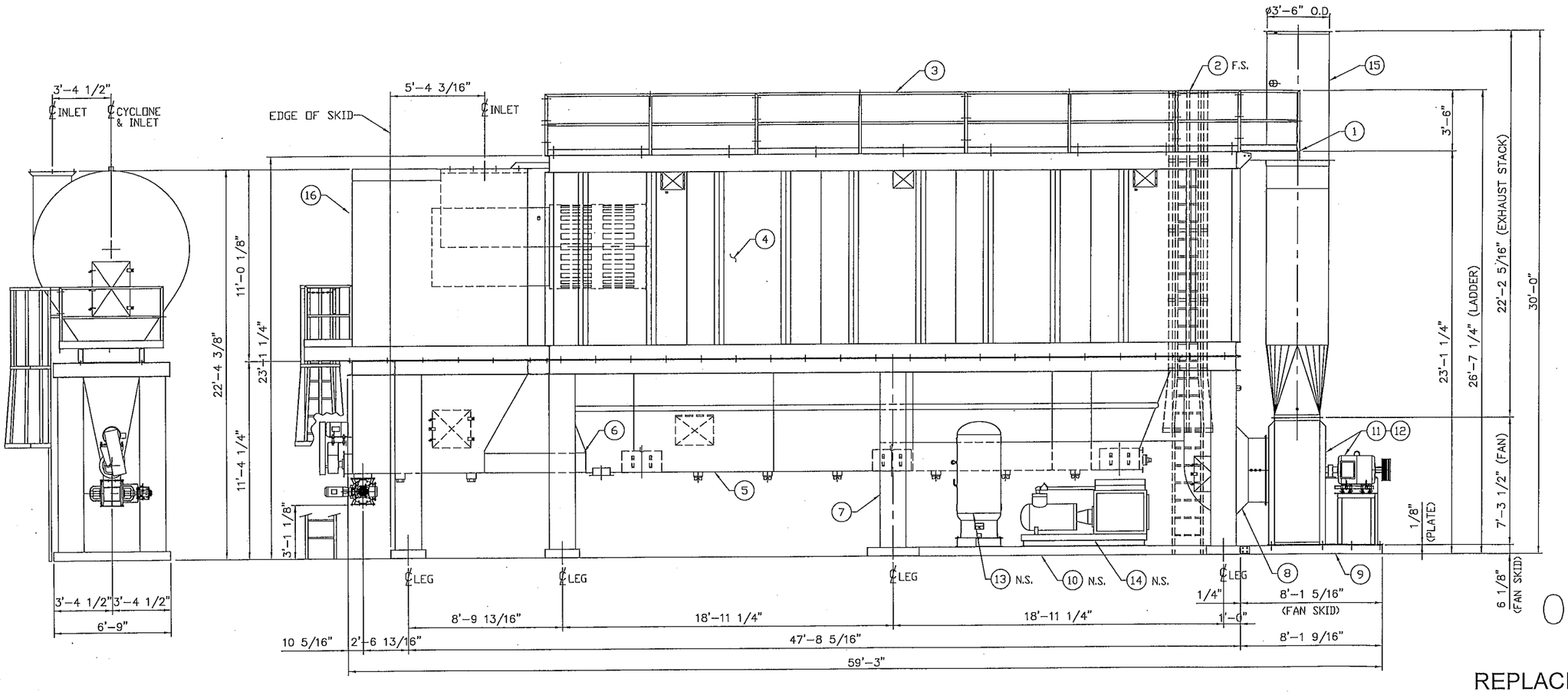
DIAGRAM OF BAGHOUSE IN RELATION TO CONTROLLED EQUIPMENT



Item	Qty	Part No.	Description	Weight
XXXX	XXX	BH00340A01	BREAKDOWN 3001	33542.8
1	1	BH00108A01	STACK SAMPLING PLATFORM	379.9
2	1	ES00011A01	CAGED LADDER WELDMENT	509.4
3	1	BH00103A04	HANDRAIL ASS'Y (12-MOD.)	1041.8
4	1	BH00101A02	BAGHOUSE MAIN WELDMENT	31611.7
XXXX	XXX	BH00340A02	BREAKDOWN 3002	19446.6
5	1	BH00105A07	BAGHOUSE HOPPER WELDMENT	6322.1
6	1	BH00107A02	B/H HOPPER SCREW ASS'Y	134.9
7	1	BH00106A02	SUPPORT FRAME WELDMENT	8475.7
8	1	BH00052A01	FAN INLET DUCT WELDMENT	1682.5
9	1	FA00055A01	EXHAUST FAN SKID	511.9
10	1	BH00104A03	DUST SHIELD & SKID ASS'Y	2319.5

Item	Qty	Part No.	Description	Weight
XXXX	XXX	BH00340A03	BREAKDOWN 3003	4174.1
11	1	FA00069A04	49" SERIES 40C FAN ASS'Y	4174.1
XXXX	XXX	BH00340A04	BREAKDOWN 3004	3406.0
12	1	FA00056A01	250 HP EXHAUST FAN DRIVE	3406.0
XXXX	XXX	BH00340A05	BREAKDOWN 3005	1747.3
13	1	BH00021A02	AIR SCHEMATIC (60 H.P.)	1635.1
14	1	BH00022A01	50&60 HP COMPRESSOR SKID	112.2
XXXX	XXX	BH00340A06	BREAKDOWN 3025	2039.7
15	1	FA00054A01	EXHAUST STACK (3'-6" OD)	2039.7
XXXX	XXX	BH00340A07	BREAKDOWN 3201	14147.5
16	1	CY00078A52	CYCLONE SIDE ELEVATION	14147.5

Item	Qty	Part No.	Description	Weight
XXXX	XXX	BH00340A50	BAGHOUSE SIDE ELEVATION	78504.0
51	1	BH00340A01	BREAKDOWN 3001	33542.8
52	1	BH00340A02	BREAKDOWN 3002	19446.6
53	1	BH00340A03	BREAKDOWN 3003	4174.1
54	1	BH00340A04	BREAKDOWN 3004	3406.0
55	1	BH00340A05	BREAKDOWN 3005	1747.3
56	1	BH00340A06	BREAKDOWN 3025	2039.7
57	1	BH00340A07	BREAKDOWN 3201	14147.5



A01 (1 2 3 4) BREAKDOWN 3001

A02 (5 6 7 8 9 10) BREAKDOWN 3002

A03 (11) BREAKDOWN 3003

A04 (12) BREAKDOWN 3004

A05 (13 14) BREAKDOWN 3005

A06 (15) BREAKDOWN 3025

A07 (16) BREAKDOWN 3201

A50 (51 52 53 54 55 56 57) BAGHOUSE SIDE ELEVATION

03-201-30 / /04

REPLACED BY BH008770A
ON JOB #17-170

FIELD PRINT

TOLERANCES ON DIMENSIONS UNLESS OTHERWISE NOTED ON THE DRAWING ARE:
MACHINING (±0.010") — STRUCTURAL (±1/8") — WELD SIZE (-0", +1/8").

H:\BH\BH00340.00

NO	REVISION	APPR	BY	DATE

ASTEC INDUSTRIES, INC
P.O. BOX 72787 * 4101 JEROME AVENUE * CHATTANOOGA, TN 37407

CUSTOMER: HIGHLAND PAVING COMPANY

PART NAME: BAGHOUSE SIDE ELEVATION

MACHINE: RBH-51-12 W/ø9' x 10' LG. HORIZ. CYCLONE

DWN	CHKD	APPR	DATE
RONNY FUNDERBURK			12/23/2003

JOB NO	SHEET	SCALE	DWG NO	REV
03-201	SIMILAR TO DWG BH00257	5/16"=1'-0"	BH00340	00

FORM B

SPECIFIC EMISSION SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **B**

EMISSION SOURCE DESCRIPTION: *RAP Crushing System*	EMISSION SOURCE ID NO: *RAP-CRSH RAP-CNV RAP-SCN*
	CONTROL DEVICE ID NO(S):
OPERATING SCENARIO 1 OF 1	EMISSION POINT (STACK) ID NO(S):

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):
RAP Crushing System consisting of: One crusher (65 tph), Four conveyors, One screen

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

- ☐ Coal,wood,oil, gas, other burner (Form B1)
- ☐ Int.combustion engine/generator (Form B2)
- ☐ Liquid storage tanks (Form B3)
- ☐ Woodworking (Form B4)
- ☐ Coating/finishing/printing (Form B5)
- ☐ Storage silos/bins (Form B6)
- ☐ Manuf. of chemicals/coatings/inks (Form B7)
- ☐ Incineration (Form B8)
- ☑ Other (Form B9)

START CONSTRUCTION DATE: DATE MANUFACTURED:

MANUFACTURER / MODEL NO.: *TELSMITH HIS 2421* EXPECTED OP. SCHEDULE: ____ HR/DAY ____ DAY/WK ____ WK/YR

IS THIS SOURCE SUBJECT TO? ☑ NSPS (SUBPARTS?): OOO ☐ NESHAP (SUBPARTS?):

PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB MAR-MAY JUN-AUG SEP-NOV

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)							
PARTICULATE MATTER<10 MICRONS (PM_{10})							
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)							
SULFUR DIOXIDE (SO2)		*SEE APPENDIX B*					
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
V[illegible]LE ORGANIC COMPOUNDS (VOC)							
LE[illegible]							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT	CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) tons/yr

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

TOXIC AIR POLLUTANT	CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS lb/hr	lb/day	lb/yr

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) describe any monitoring devices, gauges, or test ports for this source.

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURCE

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | **B9**

EMISSION SOURCE DESCRIPTION: *RAP Crushing System*	EMISSION SOURCE ID NO: *RAP-CRSH RAP-CNV RAP-SCN*
	CONTROL DEVICE ID NO(S): *NA*
OPERATING SCENARIO: 1 OF 1	EMISSION POINT (STACK) ID NO(S):

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

RAP Crushing System consisting of:
One crusher (65 tph)
Four conveyors
One screen

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
RAP	*tons*	*65*	*65*

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED: *NG/#2/ REC #2/ REC #4*	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR): *80*
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM B

SPECIFIC EMISSION SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — B

EMISSION SOURCE DESCRIPTION: *Truck Mix Concrete Batch Plant (120 cubic yards per hour)*	EMISSION SOURCE ID NO: *RM-1 through RM-5*
	CONTROL DEVICE ID NO(S): *RMC-CD2*
OPERATING SCENARIO 1 OF 1	EMISSION POINT (STACK) ID NO(S): *EP-2*

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):

Truck Mix Concrete Batch Plant (120 cubic yards per hour) consisting of:
Cement silo (185 tons maximum capacity), Fly ash silo (135 tons maximum capacity), Truck loadout point, Cement/flyash weigh batcher (5 tons maximum capacity), Aggregate weigh batcher (5 tons maximum capacity)

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

- ☐ Coal,wood,oil, gas, other burner (Form B1)
- ☐ Int.combustion engine/generator (Form B2)
- ☐ Liquid storage tanks (Form B3)
- ☐ Woodworking (Form B4)
- ☐ Coating/finishing/printing (Form B5)
- ☐ Storage silos/bins (Form B6)
- ☐ Manuf. of chemicals/coatings/inks (Form B7)
- ☐ Incineration (Form B8)
- ☑ Other (Form B9)

START CONSTRUCTION DATE: DATE MANUFACTURED:

MANUFACTURER / MODEL NO.: EXPECTED OP. SCHEDULE: ___ HR/DAY ___ DAY/WK ___ WK/YR

IS THIS SOURCE SUBJECT TO? ☐ NSPS (SUBPARTS?):_____ ☐ NESHAP (SUBPARTS?):_____

PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB MAR-MAY JUN-AUG SEP-NOV

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)							
PARTICULATE MATTER<10 MICRONS (PM_{10})							
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)							
SULFUR DIOXIDE (SO2)		*SEE APPENDIX B*					
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT	CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) tons/yr
		SEE APPENDIX B						

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

TOXIC AIR POLLUTANT	CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS lb/hr	lb/day	lb/yr
		SEE APPENDIX B			

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) describe any monitoring devices, gauges, or test ports for this source.

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURCE

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | B9

EMISSION SOURCE DESCRIPTION: *Truck Mix Concrete Batch Plant (120 cubic per hour)*	EMISSION SOURCE ID NO: *RM-1 through RM-5*
	CONTROL DEVICE ID NO(S): *RMC-CD2*
OPERATING SCENARIO: 1 OF 1	EMISSION POINT (STACK) ID NO(S): *EP-2*

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM):

Truck Mix Concrete Batch Plant (120 cubic yards per hour) consisting of:
Cement silo (185 tons maximum capacity), Fly ash silo (135 tons maximum capacity), Truck loadout point, Cement/flyash weigh batcher (5 tons maximum capacity), Aggregate weigh batcher (5 tons maximum capacity)

MATERIALS ENTERING PROCESS - CONTINUOUS PROCESS		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/HR)	LIMITATION(UNIT/HR)
Cement	*lb*	*448*	*448*
Supplement	*lb*	*148*	*148*
Coarse Aggregate	*lb*	*1980*	*1980*
Sand	*lb*	*1440*	*1440*
Water	*lb*	*140*	*140*

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN	REQUESTED CAPACITY
TYPE	UNITS	CAPACITY (UNIT/BATCH)	LIMITATION (UNIT/BATCH)

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED: *NG/#2/ REC #2/ REC #4*	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR): *80*
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | C1

CONTROL DEVICE ID NO: *RMC-CD2*	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): *See Form A2&A3*
EMISSION POINT (STACK) ID NO(S): *EP-2*	POSITION IN SERIES OF CONTROLS NO. 1 OF 1 UNITS
OPERATING SCENARIO:	
1 OF 1	P.E. SEAL REQUIRED (PER 2q .0112)? ☐ YES ☑ NO

DESCRIBE CONTROL SYSTEM: *C&W Manufacturing - RA-140 - 6500 CFM to control emissions from cement /fly ash silos and aggregate and truck loading.*

POLLUTANTS COLLECTED:	*PM*	*PM10*		
BEFORE CONTROL EMISSION RATE (LB/HR):				
CAPTURE EFFICIENCY:	%	%	%	%
CONTROL DEVICE EFFICIENCY:	%	%	%	%
CORRESPONDING OVERALL EFFICIENCY:	%	%	%	%
EFFICIENCY DETERMINATION CODE:				
TOTAL AFTER CONTROL EMISSION RATE (LB/HR):	See Appendix B			

PRESSURE DROP (IN H_2O): MIN:	MAX:	GAUGE? ☑ YES ☐ NO	
BULK PARTICLE DENSITY (LB/FT^3):		INLET TEMPERATURE (°F): MIN	MAX
POLLUTANT LOADING RATE: ☐ LB/HR ☐ GR/FT^3		OUTLET TEMPERATURE (°F) MIN	MAX
INLET AIR FLOW RATE (ACFM): *6,500*		FILTER OPERATING TEMP (°F):	
NO. OF COMPARTMENTS: 2	NO. OF BAGS PER COMPARTMENT:	LENGTH OF BAG (IN.):	
NO. OF CARTRIDGES:	FILTER SURFACE AREA PER CARTRIDGE (FT^2):	DIAMETER OF BAG (IN.):	
TOTAL FILTER SURFACE AREA (FT^2):	AIR TO CLOTH RATIO:		
DRAFT TYPE: ☑ INDUCED/NEGATIVE ☐ FORCED/POSITIVE		FILTER MATERIAL: ☐ WOVEN ☑ FELTED	

DESCRIBE CLEANING PROCEDURES:

- ☐ AIR PULSE
- ☑ REVERSE FLOW
- ☐ MECHANICAL/SHAKER
- ☐ OTHER:
- ☐ SONIC
- ☐ SIMPLE BAG COLLAPSE
- ☐ RING BAG COLLAPSE

DESCRIBE INCOMING AIR STREAM: *weighing and truck loading of aggregate, fly ash and cement*

PARTICLE SIZE DISTRIBUTION

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1		
1-10		
10-25		
25-50		
50-100		
>100		
	TOTAL = 100	

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

COMMENTS:

Attach Additional Sheets As Necessary

APPENDIX B

EMISSIONS CALCULATIONS

	Potential Emissions			TPER Threshold			Above TPER Threshold?		
Facility-wide PTE	lb/hr	lb/day	lb/year	lb/hr	lb/day	lb/year	lb/hr	lb/day	lb/year
Acetaldehyde	3.25E-01	7.80E+00	1.94E+03	28.43			No		
Acrolein	6.50E-03	1.56E-01	3.87E+01	0.08			No		
Ammonia	7.17E-03	1.72E-01	6.28E+01	2.84			No		
Arsenic unlisted cmpds (comp. of ASC)	2.15E-04	5.16E-03	1.49E+00			0.194			Yes
Benzene	9.90E-02	2.38E+00	5.90E+02			11.069			Yes
Benzo(a)pyrene	4.41E-06	1.06E-04	2.63E-02			3.044			No
Beryllium metal (unreacted)	1.14E-05	2.74E-04	1.00E-01			0.378			No
Cadmium metal (elemental unreacted)	1.10E-04	2.64E-03	6.75E-01			0.507			Yes
Carbon disulfide	6.23E-04	1.49E-02	3.71E+00		7.8			No	
Chromic acid (VI) (component of solCR6 and CRC)	2.78E-04	6.66E-03	2.12E+00		2.60E-02			No	
Dichlorobenzene	2.69E-06	6.46E-05	2.36E-02	69.5			No		
Formaldehyde	7.97E-01	1.91E+01	4.75E+03	0.16			Yes		
Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8	3.25E-10	7.80E-09	1.94E-06			0.007			No
Hexane, n-	2.43E-01	5.84E+00	1.46E+03		46.3			No	
Hydrogen Chloride (hydrochloric acid)	5.25E-02	1.26E+00	3.13E+02	0.74			No		
Hydrogen Sulfide	1.37E-02	3.28E-01	8.15E+01		5.1			No	
Manganese unlisted compounds	2.69E-03	6.45E-02	1.81E+01		1.3			No	
Mercury, vapor	6.57E-04	1.58E-02	3.93E+00		2.50E-02			No	
Methyl chloroform	1.20E-02	2.88E-01	7.15E+01	257.98	505.4		No	No	
Methyl ethyl ketone	6.70E-03	1.61E-01	3.99E+01		155.8			No	
Methylene chloride	8.23E-06	1.97E-04	4.90E-02	1.79		2213.752	No		No
Nickel metal	1.59E-02	3.83E-01	9.55E+01		0.3			Yes	
Perchloroethylene (tetrachloroethylene)	8.01E-05	1.92E-03	4.77E-01			17525.53			No
Phenol	1.01E-03	2.41E-02	5.99E+00	1			No		
Styrene	2.40E-04	5.77E-03	1.43E+00	11.16			No		
Tetrachlorodibenzo-p-dioxin, 2,3,7,8-	5.25E-11	1.26E-09	3.13E-07			2.77E-04			No
Toluene	7.29E-01	1.75E+01	4.34E+03	58.97	197.96		No	No	
Trichloroethylene	0.00E+00	0.00E+00	0.00E+00			5442.14			No
Trichlorofluoromethane (CFC 111)	1.35E-05	3.24E-04	8.05E-02	589.66			No		
Xylene	6.04E-02	1.45E+00	3.59E+02	68.44	113.7		No	No	

Carolina Sunrock Burlington

Source: Asphalt Cement Heater IES-4

Description: 1.2 MMBtu/hour heater for asphalt Cement (Heatec HCS-70 Heater)

Maximum operation: 8760 hours/year
Heating value of NG: 1026 Btu/cf
Heating value of 2 FO: 140 MMBtu/1000 gallon
Sulfur content of 2 FO: 0.50%

Maximum NG usage: 1.17E-03 MMcf/hour
Maximum 2 FO usage: 8.57E-03 '000 gallons/hour

NG Emissions (lb/hour) = Emission Factor (lb/MMcf) * Potential Fuel Usage (MMcf/hour)
NG Emissions (tons/year) = Emissions (lb/hour) * Operation (hour/year) / 2000 (lb/ton)
2 FO Emissions (lb/hour) = Emission Factor (lb/1000 gallons) * Potential Fuel Usage ('000 gallons/hour)
2 FO Emissions (tons/year) = Emissions (lb/hour) * Operation (hour/year) / 2000 (lb/ton)

	Natural Gas Combustion			2 Fuel Oil Combustion			
Pollutant	Emission Factor (lb/MMcf)[1]	Emissions (lb/hour	Emissions (tons/year)	Emission Factor (lb/'000 gallons)[2]	Emissions (lb/hour	Emissions (tons/year)	Max Emissions (NG/2 FO) (tons/year)
PM	7.6	8.89E-03	3.89E-02	2	1.71E-02	7.51E-02	7.51E-02
PM-10	7.6	8.89E-03	3.89E-02	1.241	1.06E-02	4.66E-02	4.66E-02
PM-2.5	7.6	8.89E-03	3.89E-02	1.241	1.06E-02	4.66E-02	4.66E-02
SO2	0.6	7.02E-04	3.07E-03	71	6.09E-01	2.67E+00	2.67E+00
NOx	100	1.17E-01	5.12E-01	20	1.71E-01	7.51E-01	7.51E-01
VOCs	5.5	6.43E-03	2.82E-02	0.556	4.77E-03	2.09E-02	2.82E-02
CO	84	9.82E-02	4.30E-01	5	4.29E-02	1.88E-01	4.30E-01
2-Methylnaphthalene	2.40E-05	2.81E-08	1.23E-07		0.00E+00	0.00E+00	1.23E-07
3-Methylchloranthrene	1.80E-06	2.11E-09	9.22E-09		0.00E+00	0.00E+00	9.22E-09
7,12-Dimethylbenz(a)anathracene	1.60E-05	1.87E-08	8.20E-08		0.00E+00	0.00E+00	8.20E-08
Acenaphthene	1.80E-06	2.11E-09	9.22E-09	2.11E-05	1.81E-07	7.92E-07	7.92E-07
Acenaphtylene	1.80E-06	2.11E-09	9.22E-09	2.53E-07	2.17E-09	9.50E-09	9.50E-09
Acetaldehyde	1.52E-05	1.78E-08	7.79E-08		0.00E+00	0.00E+00	7.79E-08
Acrolein	1.80E-05	2.11E-08	9.22E-08		0.00E+00	0.00E+00	9.22E-08
Ammonia	3.20E+00	3.74E-03	1.64E-02		0.00E+00	0.00E+00	1.64E-02
Anthracene	2.40E-06	2.81E-09	1.23E-08	1.22E-06	1.05E-08	4.58E-08	4.58E-08
Benz(a)anthracene	1.80E-06	2.11E-09	9.22E-09	4.01E-06	3.44E-08	1.51E-07	1.51E-07
Benzene	2.10E-03	2.46E-06	1.08E-05	2.14E-04	1.83E-06	8.03E-06	1.08E-05
Benzo(a)pyrene	1.20E-06	1.40E-09	6.15E-09		0.00E+00	0.00E+00	6.15E-09
Benzo(b)fluoranthene	1.80E-06	2.11E-09	9.22E-09	1.48E-06	1.27E-08	5.56E-08	5.56E-08
Benzo(g,h,i)perylene	1.20E-06	1.40E-09	6.15E-09	2.26E-06	1.94E-08	8.48E-08	8.48E-08
Benzo(k)fluoranthene	1.80E-06	2.11E-09	9.22E-09		0.00E+00	0.00E+00	9.22E-09
Butane	2.1	2.46E-03	1.08E-02		0.00E+00	0.00E+00	1.08E-02
Chrysene	1.80E-06	2.11E-09	9.22E-09	2.38E-06	2.04E-08	8.94E-08	8.94E-08
Dibenzo(a,h)anthracene	1.20E-06	1.40E-09	6.15E-09	1.67E-06	1.43E-08	6.27E-08	6.27E-08
Dichlorobenzene	1.20E-03	1.40E-06	6.15E-06		0.00E+00	0.00E+00	6.15E-06
Ethane	3.1	3.63E-03	1.59E-02		0.00E+00	0.00E+00	1.59E-02
Ethylbenzene		0.00E+00	0.00E+00	6.36E-05	5.45E-07	2.39E-06	2.39E-06
Fluoranthene	3.00E-06	3.51E-09	1.54E-08	4.84E-06	4.15E-08	1.82E-07	1.82E-07
Fluorene	2.80E-06	3.27E-09	1.43E-08	4.47E-06	3.83E-08	1.68E-07	1.68E-07
Formaldehyde	7.50E-02	8.77E-05	3.84E-04	3.30E-02	2.83E-04	1.24E-03	1.24E-03
Hexane	1.8	2.11E-03	9.22E-03		0.00E+00	0.00E+00	9.22E-03
Indeno(1,2,3-cd)pyrene	1.80E-06	2.11E-09	9.22E-09	2.14E-06	1.83E-08	8.03E-08	8.03E-08
Naphthalene	6.10E-04	7.13E-07	3.12E-06	1.13E-03	9.69E-06	4.24E-05	4.24E-05
OCDD		0.00E+00	0.00E+00	3.10E-09	2.66E-11	1.16E-10	1.16E-10
Pentane	2.6	3.04E-03	1.33E-02		0.00E+00	0.00E+00	1.33E-02
Phenanathrene	1.70E-05	1.99E-08	8.71E-08	1.05E-05	9.00E-08	3.94E-07	3.94E-07
Propane	1.6	1.87E-03	8.20E-03		0.00E+00	0.00E+00	8.20E-03
Pyrene	5.00E-06	5.85E-09	2.56E-08	4.25E-06	3.64E-08	1.60E-07	1.60E-07
Toluene	3.40E-02	3.98E-05	1.74E-04	6.20E-03	5.31E-05	2.33E-04	2.33E-04
1,1,1-Trichloroethane		0.00E+00	0.00E+00	2.36E-04	2.02E-06	8.86E-06	8.86E-06
Xylene		0.00E+00	0.00E+00	1.09E-04	9.34E-07	4.09E-06	4.09E-06
Arsenic	2.00E-04	2.34E-07	1.02E-06	5.60E-04	4.80E-06	2.10E-05	2.10E-05
Barium	4.40E-03	5.15E-06	2.25E-05	0.00E+00	0.00E+00	0.00E+00	2.25E-05
Beryllium	1.20E-05	1.40E-08	6.15E-08	4.20E-04	3.60E-06	1.58E-05	1.58E-05
Cadmium	1.10E-03	1.29E-06	5.64E-06	4.20E-04	3.60E-06	1.58E-05	1.58E-05
Chromium (as chromic acid)	1.40E-03	1.64E-06	7.17E-06	4.20E-04	3.60E-06	1.58E-05	1.58E-05
Cobalt	8.40E-05	9.82E-08	4.30E-07		0.00E+00	0.00E+00	4.30E-07
Copper	8.50E-04	9.94E-07	4.35E-06	8.40E-04	7.20E-06	3.15E-05	3.15E-05
Lead	5.00E-04	5.85E-07	2.56E-06	1.26E-03	1.08E-05	4.73E-05	4.73E-05
Manganese	3.80E-04	4.44E-07	1.95E-06	8.40E-04	7.20E-06	3.15E-05	3.15E-05
Mercury	2.60E-04	3.04E-07	1.33E-06	4.20E-04	3.60E-06	1.58E-05	1.58E-05
Molybdenum	1.10E-03	1.29E-06	5.64E-06		0.00E+00	0.00E+00	5.64E-06
Nickel	2.10E-03	2.46E-06	1.08E-05	4.20E-04	3.60E-06	1.58E-05	1.58E-05
Selenium	2.40E-05	2.81E-08	1.23E-07	2.10E-03	1.80E-05	7.88E-05	7.88E-05
Vanadium	2.30E-03	2.69E-06	1.18E-05		0.00E+00	0.00E+00	1.18E-05
Zinc	2.90E-02	3.39E-05	1.49E-04	5.60E-04	4.80E-06	2.10E-05	1.49E-04

[1] - AP-42; Compilation of Air Pollutant Emission Factors Vol. 1 - Stationary Sources USEPA, 5th ed. Section 1.4, 7/98 - with following exceptions:
Acetaldehyde, ammonia, acrolein are from WebFIRE database.

[2] - AP-42; Compilation of Air Pollutant Emission Factors Vol. 1 - Stationary Sources USEPA, 5th ed. Section 1.3, 9/98

Carolina Sunrock Burlington

Source: Heater for Liquid Asphalt Tank IES-5

Description: 1.1 MMBtu/hour heater for liquid asphalt tank (Heatec Direct Heater)

Maximum operation: 8760 hours/year
Heating value of NG: 1026 Btu/cf
Heating value of 2 FO: 140 MMBtu/1000 gallon
Sulfur content of 2 FO: 0.50%

Maximum NG usage: 1.07E-03 MMcf/hour
Maximum 2 FO usage: 7.86E-03 '000 gallons/hour

NG Emissions (lb/hour) = Emission Factor (lb/MMcf) * Potential Fuel Usage (MMcf/hour)
NG Emissions (tons/year) = Emissions (lb/hour) * Operation (hour/year) / 2000 (lb/ton)
2 FO Emissions (lb/hour) = Emission Factor (lb/1000 gallons) * Potential Fuel Usage ('000 gallons/hour)
2 FO Emissions (tons/year) = Emissions (lb/hour) * Operation (hour/year) / 2000 (lb/ton)

	Natural Gas Combustion			2 Fuel Oil Combustion			
Pollutant	Emission Factor (lb/MMcf)[1]	Emissions (lb/hour	Emissions (tons/year)	Emission Factor (lb/'000 gallons)[2]	Emissions (lb/hour	Emissions (tons/year)	Max Emissions (NG/2 FO) (tons/year)
PM	7.6	8.15E-03	3.57E-02	2	1.57E-02	6.88E-02	6.88E-02
PM-10	7.6	8.15E-03	3.57E-02	1.241	9.75E-03	4.27E-02	4.27E-02
PM-2.5	7.6	8.15E-03	3.57E-02	1.241	9.75E-03	4.27E-02	4.27E-02
SO2	0.6	6.43E-04	2.82E-03	71	5.58E-01	2.44E+00	2.44E+00
NOx	100	1.07E-01	4.70E-01	20	1.57E-01	6.88E-01	6.88E-01
VOCs	5.5	5.90E-03	2.58E-02	0.556	4.37E-03	1.91E-02	2.58E-02
CO	84	9.01E-02	3.94E-01	5	3.93E-02	1.72E-01	3.94E-01
2-Methylnaphthalene	2.40E-05	2.57E-08	1.13E-07		0.00E+00	0.00E+00	1.13E-07
3-Methylchloranthrene	1.80E-06	1.93E-09	8.45E-09		0.00E+00	0.00E+00	8.45E-09
7,12-Dimethylbenz(a)anathracene	1.60E-05	1.72E-08	7.51E-08		0.00E+00	0.00E+00	7.51E-08
Acenaphthene	1.80E-06	1.93E-09	8.45E-09	2.11E-05	1.66E-07	7.26E-07	7.26E-07
Acenaphtylene	1.80E-06	1.93E-09	8.45E-09	2.53E-07	1.99E-09	8.71E-09	8.71E-09
Acetaldehyde	1.52E-05	1.63E-08	7.14E-08		0.00E+00	0.00E+00	7.14E-08
Acrolein	1.80E-05	1.93E-08	8.45E-08		0.00E+00	0.00E+00	8.45E-08
Ammonia	3.20E+00	3.43E-03	1.50E-02		0.00E+00	0.00E+00	1.50E-02
Anthracene	2.40E-06	2.57E-09	1.13E-08	1.22E-06	9.59E-09	4.20E-08	4.20E-08
Benz(a)anthracene	1.80E-06	1.93E-09	8.45E-09	4.01E-06	3.15E-08	1.38E-07	1.38E-07
Benzene	2.10E-03	2.25E-06	9.86E-06	2.14E-04	1.68E-06	7.36E-06	9.86E-06
Benzo(a)pyrene	1.20E-06	1.29E-09	5.64E-09		0.00E+00	0.00E+00	5.64E-09
Benzo(b)fluoranthene	1.80E-06	1.93E-09	8.45E-09	1.48E-06	1.16E-08	5.09E-08	5.09E-08
Benzo(g,h,I)perylene	1.20E-06	1.29E-09	5.64E-09	2.26E-06	1.78E-08	7.78E-08	7.78E-08
Benzo(k)fluoranthene	1.80E-06	1.93E-09	8.45E-09		0.00E+00	0.00E+00	8.45E-09
Butane	2.1	2.25E-03	9.86E-03		0.00E+00	0.00E+00	9.86E-03
Chrysene	1.80E-06	1.93E-09	8.45E-09	2.38E-06	1.87E-08	8.19E-08	8.19E-08
Dibenzo(a,h)anthracene	1.20E-06	1.29E-09	5.64E-09	1.67E-06	1.31E-08	5.75E-08	5.75E-08
Dichlorobenzene	1.20E-03	1.29E-06	5.64E-06		0.00E+00	0.00E+00	5.64E-06
Ethane	3.1	3.32E-03	1.46E-02		0.00E+00	0.00E+00	1.46E-02
Ethylbenzene		0.00E+00	0.00E+00	6.36E-05	5.00E-07	2.19E-06	2.19E-06
Fluoranthene	3.00E-06	3.22E-09	1.41E-08	4.84E-06	3.80E-08	1.67E-07	1.67E-07
Fluorene	2.80E-06	3.00E-09	1.31E-08	4.47E-06	3.51E-08	1.54E-07	1.54E-07
Formaldehyde	7.50E-02	8.04E-05	3.52E-04	3.30E-02	2.59E-04	1.14E-03	1.14E-03
Hexane	1.8	1.93E-03	8.45E-03		0.00E+00	0.00E+00	8.45E-03
Indeno(1,2,3-cd)pyrene	1.80E-06	1.93E-09	8.45E-09	2.14E-06	1.68E-08	7.36E-08	7.36E-08
Naphthalene	6.10E-04	6.54E-07	2.86E-06	1.13E-03	8.88E-06	3.89E-05	3.89E-05
OCDD		0.00E+00	0.00E+00	3.10E-09	2.44E-11	1.07E-10	1.07E-10
Pentane	2.6	2.79E-03	1.22E-02		0.00E+00	0.00E+00	1.22E-02
Phenanathrene	1.70E-05	1.82E-08	7.98E-08	1.05E-05	8.25E-08	3.61E-07	3.61E-07
Propane	1.6	1.72E-03	7.51E-03		0.00E+00	0.00E+00	7.51E-03
Pyrene	5.00E-06	5.36E-09	2.35E-08	4.25E-06	3.34E-08	1.46E-07	1.46E-07
Toluene	3.40E-02	3.65E-05	1.60E-04	6.20E-03	4.87E-05	2.13E-04	2.13E-04
1,1,1-Trichloroethane		0.00E+00	0.00E+00	2.36E-04	1.85E-06	8.12E-06	8.12E-06
Xylene		0.00E+00	0.00E+00	1.09E-04	8.56E-07	3.75E-06	3.75E-06
Arsenic	2.00E-04	2.14E-07	9.39E-07	5.60E-04	4.40E-06	1.93E-05	1.93E-05
Barium	4.40E-03	4.72E-06	2.07E-05	0.00E+00	0.00E+00	0.00E+00	2.07E-05
Beryllium	1.20E-05	1.29E-08	5.64E-08	4.20E-04	3.30E-06	1.45E-05	1.45E-05
Cadmium	1.10E-03	1.18E-06	5.17E-06	4.20E-04	3.30E-06	1.45E-05	1.45E-05
Chromium (as chromic acid)	1.40E-03	1.50E-06	6.57E-06	4.20E-04	3.30E-06	1.45E-05	1.45E-05
Cobalt	8.40E-05	9.01E-08	3.94E-07		0.00E+00	0.00E+00	3.94E-07
Copper	8.50E-04	9.11E-07	3.99E-06	8.40E-04	6.60E-06	2.89E-05	2.89E-05
Lead	5.00E-04	5.36E-07	2.35E-06	1.26E-03	9.90E-06	4.34E-05	4.34E-05
Manganese	3.80E-04	4.07E-07	1.78E-06	8.40E-04	6.60E-06	2.89E-05	2.89E-05
Mercury	2.60E-04	2.79E-07	1.22E-06	4.20E-04	3.30E-06	1.45E-05	1.45E-05
Molybdenum	1.10E-03	1.18E-06	5.17E-06		0.00E+00	0.00E+00	5.17E-06
Nickel	2.10E-03	2.25E-06	9.86E-06	4.20E-04	3.30E-06	1.45E-05	1.45E-05
Selenium	2.40E-05	2.57E-08	1.13E-07	2.10E-03	1.65E-05	7.23E-05	7.23E-05
Vanadium	2.30E-03	2.47E-06	1.08E-05		0.00E+00	0.00E+00	1.08E-05
Zinc	2.90E-02	3.11E-05	1.36E-04	5.60E-04	4.40E-06	1.93E-05	1.36E-04

[1] - AP-42; Compilation of Air Pollutant Emission Factors Vol. 1 - Stationary Sources USEPA, 5th ed. Section 1.4, 7/98 - with following exceptions:
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[2] - AP-42; Compilation of Air Pollutant Emission Factors Vol. 1 - Stationary Sources USEPA, 5th ed. Section 1.3, 9/98

ASPHALT EMISSIONS CALCULATOR REVISION F 07/18/2012 INPUT SCREEN

NCDENR

NOTICE: This spreadsheet is for your use only and should be used with caution. DENR does not guarantee the accuracy of the information contained. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current information available. DENR is not responsible for errors or omissions that may be contained herein.

Instructions: 1. Fill in all **BLUE** cells.
2.Ensure all pull down boxes and **BLUE** cells reflect correct conditions.
3. Read the README sheet.
4. Use the mouse pointer to read the tips in the **"red cornered"** input cells. (See Tools->Options->Comments if these are not displayed.

Company Name:	Carolina Sunrock LLC
Facility ID No.:	NA
Permit No.:	NA
Facility City:	Burlington
Facility County:	Alamance
Spreadsheet Prepared by:	RTP Environmental

Is this spreadsheet being used for emissions inventory	2. NO
Plant type:	Drum mix
Fuel type:	Waste, No.4 or No.6 fuel oil-fired
Fuel Sulfur Content:	0.50 % (default value is 0.5 %)
Controls:	Fabric filter controls

Dryer heat input:	80	million Btu per hour
Plant maximum production capacity:	250	tons per hour

Asphalt Properties			
Asphalt temperature:	325	degrees F	(default value of 325 degrees F)
Volatility loss (V):	-0.5	%	(default value of -0.5 %)

Silo Filling?	YES

RAP crushing on site?	YES		
Crushing Capacity?	65 tons per hour	No. of crushers:	1
Hours of operation:	8760 hours per year	No. of screens:	1
		No. of conveyors:	1

Asphalt Cement Heater			
AC heater heat input:	2.3	million Btu per hour	(No.2 or diesel fuel oil -fired assumed)
Fuel Sulfur Content:	0.50	%	(default value is 0.5 %)
Hours of operation:	8760	hours per year	(default is 8760 hours per year unless specified otherwise)

Calculated Annual Production Limit:	1,488,581	tons per year	
Requested Annual Production Limit:	1,488,581	tons per year	(if none desired leave default value =8760*tph)
Requested Daily Production Limit:	6,000	tons per day	(if none desired leave default value = 24*tph)

Is this plant NSPS Subpart I affected?	YES	
Stack gas flow rate :	51,000	ACFM
Stack gas temperature :	240	oF
Stack % moisture:	33	%
Allowable emission rate under NSPS Subpart I:	8.84	lb/hr
Control efficiency required:	99.874	%
Does Method 5 data already exist?:	NO	
Method 5 data mixed emission rate	40.00	lb/hr
Control efficiency based on test data	99.429	%

Allowable emission rate under 2 D .0506:	55.39	lb/hr
Does this plant emit less than this limit ?:	Yes	*(based on emission factors)*
Control efficiency required:	99.209	%

Dryer Emissions
Criteria Pollutants

Pollutant	Uncontrolled Emission Factor (lb/ton)	Controlled Emission Factor (lb/ton)	uncontrolled emission rate (lb/hr)	controlled emission rate (lb/hr)	Title V, Potential Emissions (tpy) (no controls, 8760 hours per year operation)	PSD, Potential Emissions, (tpy) (with controls, 8760 hours per year operation)	Synthetic Minor, Potential Emissions (tpy) (with all operation restrictions)
Condensible PM (or PM_{10})	0.0654	0.0194	16.35	4.85			
Filterable PM	28	0.014	7000	3.5			
Filterable PM10	6.4	0.0039	1600	0.975			
Total PM	28	0.033	7000	8.25	59.9	36.1	24.6
Total PM10	6.5	0.023	1625	5.75	30.1	25.2	17.1
SO2	0.0837	0.0837	20.93	20.93	91.69	91.69	62.32
CO	0.1300	0.130	32.5	32.5	142.4	142.4	96.8
NOx	0.0550	0.055	13.75	13.75	60.2	60.2	40.9
VOC	0.0320	0.032	8	8	35.0	35.0	23.8
HAPs, TOTAL		0.010		2.5	11.0	11.0	7.4

Silo Filling plus Load Out Emissions, Criteria Pollutants

Pollutant	Emission Factor, combined (lb/ton)	emission rate (lb/hr)	Title V, Potential Emissions (tpy) (no controls, 8760 hours per year operation)	PSD, Potential Emissions, (tpy) (8760 hours per year operation)	Synthetic Minor, Potential Emissions (tpy) (with all operation restrictions)
Total PM	1.11E-03	2.77E-01	1.2	1.2	0.8
CO	2.53E-03	6.32E-01	2.8	2.8	1.9
VOC	1.61E-02	4.02E+00	17.6	17.6	12.0
HAPs, TOTAL	2.74E-04	6.85E-02	0.3	0.3	0.2

Rap Crusher Emissions

Pollutant	Emission Factor, all sources combined (lb/ton)	emission rate (lb/hr)	Title V, Potential Emissions (tpy) (no controls, 8760 hours per year operation)	PSD, Potential Emissions, (tpy) (8760 hours per year operation)	Synthetic Minor, Potential Emissions (tpy) (with all operation restrictions)
Total PM	0.0334	2.17E+00	9.5	9.5	6.5
Total PM10	0.0122	7.93E-01	3.5	3.5	2.4

Asphalt Cement Heater Emissions

Pollutant	Uncontrolled Emission Factor (lb/MMBtu)	emission rate (lb/hr)	Title V, Potential Emissions (tpy) (no controls, 8760 hours per year operation)	PSD, Potential Emissions, (tpy) (8760 hours per year operation)	Synthetic Minor, Potential Emissions (tpy) (with all operation restrictions)
Total PM	0.0235714	5.42E-02	0.2	0.2	0.2
Total PM10	0.0235714	5.42E-02	0.2	0.2	0.2
SO2	0.5071429	1.17E+00	5.1	5.1	5.1
CO	0.0357143	8.21E-02	0.4	0.4	0.4
NOx	0.1428571	3.29E-01	1.4	1.4	1.4
VOC	0.0024286	5.59E-03	0.0	0.0	0.0

Facility-wide Criteria Pollutant Emissions Summary

Pollutant	Controlled Emission Rate, lb/hr	Title V, Potential Emissions (tpy) (no controls, 8760 hours per year operation)	PSD, Potential Emissions, (tpy) (8760 hours per year operation)	Synthetic Minor, Potential Emissions (tpy) (with all operation restrictions)
Total PM	1.05E+01	70.9	47.1	32.1
Total PM10	6.60E+00	35.0	30.1	20.5
SO2	2.21E+01	96.8	96.8	67.4
CO	3.32E+01	145.5	145.5	99.0
NOx	1.41E+01	61.7	61.7	42.4
VOC	1.20E+01	52.7	52.7	35.8
HAPs, TOTAL	2.57E+00	11.3	11.3	7.6

Facility-wide Toxic Air Pollutants Summary

TAP	CAS No.	Action
Acetaldehyde (TH)	75070	NOTE 1
Acrolein (TH)	107028	NOTE 1
Arsenic unlisted cmpds (comp. of ASC) (TH)	ASC-other	NOTE 3
Benzene (TH)	71432	NOTE 3
Benzo(a)pyrene (T)	50328	NOTE 1
Beryllium metal (unreacted) (TH)	7440417	NOTE 1
Cadmium metal (elemental unreacted) (TH)	7440439	NOTE 3
Carbon disulfide (TH)	75150	NOTE 1
Formaldehyde (TH)	50000	NOTE 3
Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (T)	57653857	NOTE 1
Hexane, n- (TH)	110543	NOTE 1
Hydrogen Sulfide (T)	7783064	NOTE 1
Manganese unlisted compounds (T)	MNC-other	NOTE 1
Methyl chloroform (TH)	71556	NOTE 1

TAP	CAS No.	Action
Mercury, vapor (TH)	7439976	NOTE 3
Methyl ethyl ketone (TH)	78933	NOTE 1
Methylene chloride (TH)	75092	NOTE 1
Nickel metal (TH)	7440020	NOTE 3
Perchloroethylene (tetrachloroethylene) (TH)	127184	NOTE 1
Phenol (TH)	108952	NOTE 1
Soluble Chromate Compounds as Chrome VI (TH)	7738945	NOTE 1
Styrene (TH)	100425	NOTE 1
Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH)	1746016	NOTE 1
Toluene (TH)	108883	NOTE 1
Trichloroethylene (TH)	79016	NOTE 1
Trichlorofluoromethane (CFC 111) (T)	75694	NOTE 1
Xylene (TH)	1330207	NOTE 1

NOTE 1: Include TAP in TPER stipulation.

NOTE 2: Include TAP in TPER stipulation with operation restrictions.

NOTE 3: Modeling Required. See "Toxic calculations" worksheet.

ASPHALT EMISSIONS CALCULATOR REVISION F 07/18/2012 - OUTPUT SCREEN

Instructions: Enter emission source / facility data on the "INPUT" tab/screen. The air emission results and summary of input data are viewed / printed on the "OUTPUT" tab/screen. The different tabs are on the bottom of this screen.

This spreadsheet is for your use only and should be used with caution. DENR does not guarantee the accuracy of the information contained. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current information available. DENR is not responsible for errors or omissions that may be contained herein.

SOURCE / FACILITY / USER INPUT SUMMARY (FROM INPUT SCREEN)

COMPANY:	**Carolina Sunrock LLC**	FACILITY ID NO.:	NA
		PERMIT NUMBER:	NA
EMISSION SOURCE DESCRIPTION:	NSPS affected 250 tph Waste, No.4 or No.6 fuel oil-fired, Drum mix asphalt plant (80 mmBtu/hr heat input, w/silofill, with RAP, sulfur=0.5%)	FACILITY CITY:	Burlington
		FACILITY COUNTY:	Alamance

Annual Production Limit:	**1,488,581**	ton/year	Daily Production Limit: **n/a**	ton/day
SPREADSHEET PREPARED BY:	RTP Environmental			

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION

AIR POLLUTANT EMITTED	ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS)	
	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
PARTICULATE MATTER (PM)	10.48	32.09		70.91		32.09
PARTICULATE MATTER<10 MICRONS (PM_{10})	6.60	20.54		35.01		20.54
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)						
SULFUR DIOXIDE (SO2)	22.10	67.43		96.80		67.43
NITROGEN OXIDES (NOx)	14.08	42.38		61.66		42.38
CARBON MONOXIDE (CO)	33.21	99.00		145.48		99.00
VOLATILE ORGANIC COMPOUNDS (VOC)	12.03	35.82		52.69		35.82
TOTAL HAP	2.57	7.65		11.25		7.65
LARGEST HAP (formaldehyde)	0.80	2.37		3.49		2.37

Attach INPUT worksheet

TOXIC / HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION

TOXIC / HAZARDOUS AIR POLLUTANT	CAS Number	ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS)		EMISSION FACTOR (lb/ton asphalt produced, with Fabric filter controls)
		lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr	
Acetaldehyde (TH)	75070	3.25E-01	1.94E+03	3.25E-01	2847.00	3.25E-01	1.94E+03	1.3E-03
Acrolein (TH)	107028	6.50E-03	3.87E+01	6.50E-03	56.94	6.50E-03	3.87E+01	2.6E-05
Antimony unlisted compounds (H)	SBC-other	4.50E-05	2.68E-01	4.50E-05	0.39	4.50E-05	2.68E-01	1.8E-07
Arsenic unlisted cmpds (comp. of ASC) (TH)	ASC-other	1.40E-04	8.34E-01	1.40E-04	1.23	1.40E-04	8.34E-01	5.6E-07
Benzene (TH)	71432	9.90E-02	5.90E+02	9.90E-02	867.38	9.90E-02	5.90E+02	4.0E-04
Benzo(a)pyrene (T)	50328	4.41E-06	2.63E-02	4.41E-06	0.04	4.41E-06	2.63E-02	1.8E-08
Beryllium metal (unreacted) (TH)	7440417	0.00E+00	0.00E+00	0.00E+00	0.00	0.00E+00	0.00E+00	0.0E+00
Cadmium metal (elemental unreacted) (TH)	7440439	1.03E-04	6.10E-01	1.03E-04	0.90	1.03E-04	6.10E-01	4.1E-07
Carbon disulfide (TH)	75150	6.23E-04	3.71E+00	6.23E-04	5.45	6.23E-04	3.71E+00	2.5E-06
Chromium unlisted cmpds (add w/chrom acid to get CRC) (H)	CRC-other	1.26E-03	7.52E+00	1.26E-03	11.06	1.26E-03	7.52E+00	5.1E-06
Chromic acid (VI) (component of solCR6 and CRC) (TH)	7738945	1.13E-04	6.70E-01	1.13E-04	0.99	1.13E-04	6.70E-01	4.5E-07
Cobalt unlisted compounds (H)	COC-other	6.50E-06	3.87E-02	6.50E-06	0.06	6.50E-06	3.87E-02	2.6E-08
Cumene (H)	98828	1.14E-03	6.81E+00	1.14E-03	10.02	1.14E-03	6.81E+00	4.6E-06
Ethyl benzene (H)	100414	6.41E-02	3.81E+02	6.41E-02	561.24	6.41E-02	3.81E+02	2.6E-04
Ethyl chloride (chloroethane) (H)	75003	2.18E-06	1.30E-02	2.18E-06	0.02	2.18E-06	1.30E-02	8.7E-09
Formaldehyde (TH)	50000	7.97E-01	4.75E+03	7.97E-01	6981.17	7.97E-01	4.75E+03	3.2E-03
Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (T)	57653857	3.25E-10	1.94E-06	3.25E-10	0.00	3.25E-10	1.94E-06	1.3E-12
Hexane, n- (TH)	110543	2.39E-01	1.42E+03	2.39E-01	2095.50	2.39E-01	1.42E+03	9.6E-04
Hydrogen Chloride (hydrochloric acid) (TH)	7647010	5.25E-02	3.13E+02	5.25E-02	459.90	5.25E-02	3.13E+02	2.1E-04
Hydrogen Sulfide (T)	7783064	1.37E-02	8.15E+01	1.37E-02	119.84	1.37E-02	8.15E+01	5.5E-05
Lead unlisted compounds (H)	PBC-other	3.75E-03	2.23E+01	3.75E-03	32.85	3.75E-03	2.23E+01	1.5E-05
Manganese unlisted compounds (T)	MNC-other	1.93E-03	1.15E+01	1.93E-03	16.86	1.93E-03	1.15E+01	7.7E-06
Mercury, vapor (TH)	7439976	6.50E-04	3.87E+00	6.50E-04	5.69	6.50E-04	3.87E+00	2.6E-06
Methyl bromide (H)	74839	2.49E-04	1.48E+00	2.49E-04	2.18	2.49E-04	1.48E+00	1.0E-06
Methyl chloride (H)	74873	1.56E-04	9.29E-01	1.56E-04	1.37	1.56E-04	9.29E-01	6.2E-07
Methyl chloroform (TH)	71556	1.20E-02	7.15E+01	1.20E-02	105.12	1.20E-02	7.15E+01	4.8E-05
Methyl ethyl ketone (TH)	78933	6.70E-03	3.99E+01	6.70E-03	58.67	6.70E-03	3.99E+01	2.7E-05
Methylene chloride (TH)	75092	8.23E-06	4.90E-02	8.23E-06	0.07	8.23E-06	4.90E-02	3.3E-08
Napthalene (H)	91203	1.65E-01	9.81E+02	1.65E-01	1442.95	1.65E-01	9.81E+02	6.6E-04
Nickel metal (TH)	7440020	1.58E-02	9.38E+01	1.58E-02	137.97	1.58E-02	9.38E+01	6.3E-05
Perchloroethylene (tetrachloroethylene) (TH)	127184	8.01E-05	4.77E-01	8.01E-05	0.70	8.01E-05	4.77E-01	3.2E-07
Phenol (TH)	108952	1.01E-03	5.99E+00	1.01E-03	8.81	1.01E-03	5.99E+00	4.0E-06
Phosphorus Metal, Yellow or White (H)	7723140	7.00E-03	4.17E+01	7.00E-03	61.32	7.00E-03	4.17E+01	2.8E-05
Polycyclic Organic Matter (H)	POM	2.20E-01	1.31E+03	2.20E-01	1927.20	2.20E-01	1.31E+03	8.8E-04
Propionaldehyde (H)	123386	3.25E-02	1.94E+02	3.25E-02	284.70	3.25E-02	1.94E+02	1.3E-04
Quinone (H)	106514	4.00E-02	2.38E+02	4.00E-02	350.40	4.00E-02	2.38E+02	1.6E-04
Selenium compounds (H)	SEC	8.75E-05	5.21E-01	8.75E-05	0.77	8.75E-05	5.21E-01	3.5E-07
Styrene (TH)	100425	2.40E-04	1.43E+00	2.40E-04	2.11	2.40E-04	1.43E+00	9.6E-07
Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH)	1746016	5.25E-11	3.13E-07	5.25E-11	0.00	5.25E-11	3.13E-07	2.1E-13

Toluene (TH)	108883	7.29E-01	4.34E+03	7.29E-01	6386.67	7.29E-01	4.34E+03	2.9E-03
Trichloroethylene (TH)	79016	0.00E+00	0.00E+00	0.00E+00	0.00	0.00E+00	0.00E+00	0.0E+00
Trichlorofluoromethane (CFC 111) (T)	75694	1.35E-05	8.05E-02	1.35E-05	0.12	1.35E-05	8.05E-02	5.4E-08
Trimethylpentane, 2,2,4- (H)	540841	1.00E-02	5.97E+01	1.00E-02	87.85	1.00E-02	5.97E+01	4.0E-05
Xylene (TH)	1330207	6.04E-02	3.59E+02	6.04E-02	528.72	6.04E-02	3.59E+02	2.4E-04
Xylene, o- (H)	95476	2.57E-03	1.53E+01	2.57E-03	22.50	2.57E-03	1.53E+01	1.0E-05

TOXIC AIR POLLUTANT EMISSIONS INFORMATION (FOR PERMITTING PURPOSES)

Expected actual emissions after controls and limitations consisting of an annual production limit of 1488581 tons .

TOXIC AIR POLLUTANT	CAS Num.	lb/hr	lb/day	lb/yr	Modeling Required?	EMISSION FACTOR (lb/ton asphalt produced, with Fabric filter controls)
Acetaldehyde (TH)	75070	3.25E-01	7.80E+00	1.94E+03	NO. Based on facility-wide potential.	1.30E-03
Acrolein (TH)	107028	6.50E-03	1.56E-01	3.87E+01	NO. Based on facility-wide potential.	2.60E-05
Arsenic unlisted cmpds (comp. of ASC) (TH)	ASC-other	1.40E-04	3.36E-03	8.34E-01	YES. Modeling required	5.60E-07
Benzene (TH)	71432	9.90E-02	2.38E+00	5.90E+02	YES. Modeling required	3.96E-04
Benzo(a)pyrene (T)	50328	4.41E-06	1.06E-04	2.63E-02	NO. Based on facility-wide potential.	1.76E-08
Beryllium metal (unreacted) (TH)	7440417	0.00E+00	0.00E+00	0.00E+00	NO. Based on facility-wide potential.	0.00E+00
Cadmium metal (elemental unreacted) (TH)	7440439	1.03E-04	2.46E-03	6.10E-01	YES. Modeling required	4.10E-07
Carbon disulfide (TH)	75150	6.23E-04	1.49E-02	3.71E+00	NO. Based on facility-wide potential.	2.49E-06
Soluble Chromate compounds as Chrome (VI) (TH)	SOLCR6	1.13E-04	2.70E-03	6.70E-01	NO. Based on facility-wide potential.	4.50E-07
Formaldehyde (TH)	50000	7.97E-01	1.91E+01	4.75E+03	YES. Modeling required	3.19E-03
Hexane, n- (TH)	110543	2.39E-01	5.74E+00	1.42E+03	NO. Based on facility-wide potential.	9.57E-04
Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (T)	57653857	3.25E-10	7.80E-09	1.94E-06	NO. Based on facility-wide potential.	1.30E-12
Hydrogen Sulfide (T)	7783064	1.37E-02	3.28E-01	8.15E+01	NO. Based on facility-wide potential.	5.47E-05
Manganese unlisted compounds (T)	MNC-other	1.93E-03	4.62E-02	1.15E+01	NO. Based on facility-wide potential.	7.70E-06
Mercury, vapor (TH)	7439976	6.50E-04	1.56E-02	3.87E+00	YES. Modeling required	2.60E-06
Methylene chloride (TH)	75092	8.23E-06	1.97E-04	4.90E-02	NO. Based on facility-wide potential.	3.29E-08
Methyl chloroform (TH)	71556	1.20E-02	2.88E-01	7.15E+01	NO. Based on facility-wide potential.	4.80E-05
Methyl ethyl ketone (TH)	78933	6.70E-03	1.61E-01	3.99E+01	NO. Based on facility-wide potential.	2.68E-05
Nickel metal (TH)	7440020	1.58E-02	3.78E-01	9.38E+01	YES. Modeling required	6.30E-05
Perchloroethylene (tetrachloroethylene) (TH)	127184	8.01E-05	1.92E-03	4.77E-01	NO. Based on facility-wide potential.	3.20E-07
Phenol (TH)	108952	1.01E-03	2.41E-02	5.99E+00	NO. Based on facility-wide potential.	4.02E-06
Styrene (TH)	100425	2.40E-04	5.77E-03	1.43E+00	NO. Based on facility-wide potential.	9.62E-07
Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH)	1746016	5.25E-11	1.26E-09	3.13E-07	NO. Based on facility-wide potential.	2.10E-13
Toluene (TH)	108883	7.29E-01	1.75E+01	4.34E+03	NO. Based on facility-wide potential.	2.92E-03
Trichloroethylene (TH)	79016	0.00E+00	0.00E+00	0.00E+00	NO. Based on facility-wide potential.	0.00E+00
Trichlorofluoromethane (CFC 111) (T)	75694	1.35E-05	3.24E-04	8.05E-02	NO. Based on facility-wide potential.	5.41E-08
Xylene (TH)	1330207	6.04E-02	1.45E+00	3.59E+02	NO. Based on facility-wide potential.	2.41E-04

Toxic Air Pollutant [illegible] emission rate calculations page

This sheet presents the emission rate calculations that are necessary for modeling determinations.

								dryer		Silo Filling		Loadout		total handling		total							
Pollutant	CAS No.	emissions from dryer	emissions from handling	TPER	Units	TPER	Units	Controlled Emission Factor (lb/ton)	Controlled Emission Rate (lb/hour)	Emission factor (lb/ton)	Emission Rate (lb/hr)	Emission factor (lb/ton)	Emission Rate (lb/hr)	Emission Factor (lb/ton)	Emission Rate (lb/hour)	Controlled Emission Factor (lb/ton)	Controlled Emission Rate (lb/hour)	Controlled Emission Rate (lb/day)	Controlled Emission Rate (lb/year)	Controlled w/Limitations Emission Rate (lb/day)	Controlled w/Limitations Emission Rate (lb/year)	Controlled ER greater than TPER ?	Controlled w/Limitations ER greater than TPER ?	Comments
Acetaldehyde (TH)	75070	yes	no	6.8	lb/hr			1.30E-03	3.25E-01							1.30E-03	3.25E-01	7.80E+00	2.85E+03	7.80E+00	1.94E+03	No		NOTE 1
Acrolein (TH)	107028	yes	no	0.02	lb/hr			2.60E-05	6.50E-03							2.60E-05	6.50E-03	1.56E-01	5.69E+01	1.56E-01	3.87E+01	No		NOTE 1
Formaldehyde (TH)	**50000**	**yes**	**yes**	**0.04**	**lb/hr**			**3.10E-03**	**7.75E-01**	**8.41E-05**	**2.10E-02**	**3.66E-06**	**9.15E-04**	**8.775E-05**	**2.19E-02**	**3.19E-03**	**7.97E-01**	**1.91E+01**	**6.98E+03**	**1.91E+01**	**4.75E+03**	**Yes**		**NOTE 3**
Phenol (TH)	108952	no	yes	0.24	lb/hr					0.00E+00	0.00E+00	4.02E-06	1.01E-03	4.02E-06	1.01E-03	4.02E-06	1.01E-03	2.41E-02	8.81E+00	2.41E-02	5.99E+00	No		NOTE 1
Styrene (TH)	100425	no	yes	2.7	lb/hr			6.58E-07	1.65E-04	3.04E-07	7.59E-05	9.52E-07	2.40E-04	9.52E-07	2.40E-04	5.77E-03	2.11E+00	5.77E-03	1.43E+00	No		NOTE 1
Trichlorofluoromethane (CFC 111) (T)	75694	no	yes	140	lb/hr			0.00E+00	0.00E+00	5.41E-08	1.35E-05	5.41E-08	1.35E-05	5.41E-08	1.35E-05	5.41E-08	1.35E-05	3.24E-04	1.18E-01	3.24E-04	8.05E-02	No		NOTE 1
Methyl chloroform (TH)	71556	yes	yes	64	lb/hr	250	lb/day	4.80E-05	1.20E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	4.80E-05	1.20E-02	2.88E-01	1.05E+02	2.88E-01	7.15E+01	No	No	NOTE 1
Methyl ethyl ketone (TH)	78933	yes	yes	22.4	lb/hr	78	lb/day	2.00E-05	5.00E-03	4.75E-06	1.19E-03	2.04E-06	5.09E-04	6.79E-06	1.70E-03	2.68E-05	6.70E-03	1.61E-01	5.87E+01	1.61E-01	3.99E+01	No	No	NOTE 1
Toluene (TH)	108883	yes	yes	14.4	lb/hr	98	lb/day	2.90E-03	7.25E-01	7.56E-06	1.89E-03	8.73E-06	2.18E-03	1.63E-05	4.07E-03	2.92E-03	7.29E-01	1.75E+01	6.39E+03	1.75E+01	4.34E+03	No	No	NOTE 1
Xylene (TH)	1330207	yes	yes	16.4	lb/hr	57	lb/day	2.00E-04	5.00E-02	2.44E-05	6.09E-03	1.71E-05	4.26E-03	4.14E-05	1.04E-02	2.41E-04	6.04E-02	1.45E+00	5.29E+02	1.45E+00	3.59E+02	No	No	NOTE 1
Methylene chloride (TH)	75092	no	yes	0.39	lb/hr	1600	lb/year			3.29E-08	8.23E-06	0.00E+00	0.00E+00	3.29E-08	8.23E-06	3.29E-08	8.23E-06	1.97E-04	7.21E-02	1.97E-04	4.90E-02	No	No	NOTE 1
Soluble Chromate compounds as Chrome (VI) (TH)	SOLCR6	yes	no	0.013	lb/day			4.50E-07	1.13E-04							4.50E-07	1.13E-04	2.70E-03	9.86E-01	2.70E-03	6.70E-01	No	No	NOTE 1
Hexane, n- (TH)	110543	yes	yes	23	lb/day			9.38E-04	2.35E-01	1.22E-05	3.05E-03	6.24E-06	1.56E-03	1.84E-05	4.61E-03	9.57E-04	2.39E-01	5.74E+00	2.10E+03	5.74E+00	1.42E+03	No	No	NOTE 1
Manganese unlisted compounds (T)	MNC-other	yes	no	0.83	lb/day			7.70E-06	1.93E-03							7.70E-06	1.93E-03	4.62E-02	1.69E+01	4.62E-02	1.15E+01	No	No	NOTE 1
Mercury, vapor (TH)	**7439976**	**yes**	**no**	**0.013**	**lb/day**			**2.60E-06**	**6.50E-04**							**2.60E-06**	**6.50E-04**	**1.56E-02**	**5.69E+00**	**1.56E-02**	**3.87E+00**	**Yes**	**Yes**	**NOTE 3**
Nickel metal (TH)	**7440020**	**yes**	**no**	**0.13**	**lb/day**			**6.30E-05**	**1.58E-02**							**6.30E-05**	**1.58E-02**	**3.78E-01**	**1.38E+02**	**3.78E-01**	**9.38E+01**	**Yes**	**Yes**	**NOTE 3**
Carbon disulfide (TH)	75150	no	yes	3.9	lb/day					1.55E-05	4.87E-04	5.41E-07	1.35E-04	2.49E-06	6.23E-04	2.49E-06	6.23E-04	1.49E-02	5.45E+00	1.49E-02	3.71E+00	No	No	NOTE 1
Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH)	1746016	yes	no	0.0002	lb/yr			2.10E-13	5.25E-11							2.10E-13	5.25E-11	1.26E-09	4.60E-07	1.26E-09	3.13E-07	No	No	NOTE 1
Arsenic unlisted cmpds (comp. of ASC) (TH)	**ASC-other**	**yes**	**no**	**0.016**	**lb/yr**			**5.60E-07**	**1.40E-04**							**5.60E-07**	**1.40E-04**	**3.36E-03**	**1.23E+00**	**3.36E-03**	**8.34E-01**	**Yes**	**Yes**	**NOTE 3**
Benzene (TH)	**71432**	**yes**	**yes**	**8.1**	**lb/yr**			**3.90E-04**	**9.75E-02**	**3.90E-06**	**9.75E-04**	**2.16E-06**	**5.41E-04**	**6.06E-06**	**1.52E-03**	**3.96E-04**	**9.90E-02**	**2.38E+00**	**8.67E+02**	**2.38E+00**	**5.90E+02**	**Yes**	**Yes**	**NOTE 3**
Benzo(a)pyrene (T)	50328	yes	yes	2.2	lb/yr			9.80E-09	2.45E-06	0.00E+00	0.00E+00	7.84E-09	1.96E-06	7.84E-09	1.96E-06	1.76E-08	4.41E-06	1.06E-04	3.86E-02	1.06E-04	2.63E-02	No	No	NOTE 1
Hydrogen Sulfide (T)	7783064	yes	yes	1.7	lb/day			5.18E-05	1.30E-02	1.46E-06	3.65E-04	1.46E-06	3.65E-04	2.92E-06	7.30E-04	5.47E-05	1.37E-02	3.28E-01	1.20E+02	3.28E-01	8.15E+01	No	No	NOTE 1
Beryllium metal (unreacted) (TH)	7440417	yes	no	0.28	lb/yr			0.00E+00	0.00E+00							0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	No	No	NOTE 1
Cadmium metal (elemental unreacted) (TH)	**7440439**	**yes**	**no**	**0.37**	**lb/yr**			**4.10E-07**	**1.03E-04**							**4.10E-07**	**1.03E-04**	**2.46E-03**	**8.98E-01**	**2.46E-03**	**6.10E-01**	**Yes**	**Yes**	**NOTE 3**
Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (T)	57653857	yes	no	0.0051	lb/yr			1.30E-12	3.25E-10							1.30E-12	3.25E-10	7.80E-09	2.85E-06	7.80E-09	1.94E-06	No	No	NOTE 1
Hydrogen Chloride (hydrochloric acid) (TH)	7647010	yes	no	0.18	lb/hr			2.10E-04	5.25E-02							2.10E-04	5.25E-02	1.26E+00	4.60E+02	1.26E+00	3.13E+02	No		NOTE 1
Perchloroethylene (tetrachloroethylene) (TH)	127184	no	yes	13000	lb/yr					0.00E+00	0.00E+00	3.20E-07	8.01E-05	3.20E-07	8.01E-05	3.20E-07	8.01E-05	1.92E-03	7.01E-01	1.92E-03	4.77E-01	No	No	NOTE 1
Trichloroethylene (TH)	79016	no	yes	4000	lb/yr					0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	No	No	NOTE 1
Naphthalene (H)	91203	yes	yes					6.50E-04	1.63E-01	4.62E-06	1.16E-03	4.26E-06	1.07E-03	8.88E-06	2.22E-03	6.59E-04	1.65E-01	3.95E+00	1.44E+03	3.95E+00	9.81E+02			
Phosphorus Metal, Yellow or White (H)	7723140	yes	no					2.80E-05	7.00E-03							2.80E-05	7.00E-03	1.68E-01	6.13E+01	1.68E-01	4.17E+01			
Polycyclic Organic Matter (H)	POM	yes	no					8.80E-04	2.20E-01							8.80E-04	2.20E-01	5.28E+00	1.93E+03	5.28E+00	1.31E+03			
Propionaldehyde (H)	123386	yes	no					1.30E-04	3.25E-02							1.30E-04	3.25E-02	7.80E-01	2.85E+02	7.80E-01	1.94E+02			
Quinone (H)	106514	yes	no					1.60E-04	4.00E-02							1.60E-04	4.00E-02	9.60E-01	3.50E+02	9.60E-01	2.38E+02			
Selenium compounds (H)	SEC	yes	no					3.50E-07	8.75E-05							3.50E-07	8.75E-05	2.10E-03	7.67E-01	2.10E-03	5.21E-01			
Trimethylpentane, 2,2,4- (H)	540841	yes	yes					4.00E-05	1.00E-02	3.78E-08	9.44E-06	7.49E-08	1.87E-05	1.13E-07	2.82E-05	4.01E-05	1.00E-02	2.41E-01	8.78E+01	2.41E-01	5.97E+01			
Antimony unlisted compounds (H)	SBC-other	yes	no					1.80E-07	4.50E-05							1.80E-07	4.50E-05	1.08E-03	3.94E-01	1.08E-03	2.68E-01			
Chromium unlisted cmpds (add w/chrom acid to get CRC) (H)	CRC-other	yes	no					5.05E-05	1.26E-03							5.05E-05	1.26E-03	3.03E-02	1.11E+01	3.03E-02	7.52E+00			
Cobalt unlisted compounds (H)	COC-other	yes	no					2.60E-08	6.50E-06							2.60E-08	6.50E-06	1.56E-04	5.69E-02	1.56E-04	3.87E-02			
Ethyl benzene (H)	100414	yes	yes					2.40E-04	6.00E-02	4.63E-06	1.16E-03	1.18E-05	2.91E-03	1.63E-05	4.07E-03	2.56E-04	6.41E-02	1.54E+00	5.61E+02	1.54E+00	3.81E+02			
Lead unlisted compounds (H)	PBC-other	yes	no					1.50E-05	3.75E-03							1.50E-05	3.75E-03	9.00E-02	3.29E+01	9.00E-02	2.23E+01			
Methyl bromide (H)	74839	no	yes							5.97E-07	1.49E-04	3.99E-07	9.98E-05	9.96E-07	2.49E-04	9.96E-07	2.49E-04	5.98E-03	2.18E+00	5.98E-03	1.48E+00			
Cumene (H)	98828	no	yes							0.00E+00	0.00E+00	4.57E-06	1.14E-03	4.57E-06	1.14E-03	4.57E-06	1.14E-03	2.74E-02	1.00E+01	2.74E-02	6.81E+00			
Ethyl chloride (chloroethane) (H)	75003	no	yes							0.00E+00	0.00E+00	8.73E-09	2.18E-06	8.73E-09	2.18E-06	8.73E-09	2.18E-06	5.24E-05	1.91E-02	5.24E-05	1.30E-02			
Methyl chloride (H)	74873	no	yes							0.00E+00	0.00E+00	6.24E-07	1.56E-04	6.24E-07	1.56E-04	6.24E-07	1.56E-04	3.74E-03	1.37E+00	3.74E-03	9.29E-01			
Xylene, o- (H)	95476	no	yes							6.95E-06	1.74E-03	3.33E-06	8.32E-04	1.03E-05	2.57E-03	1.03E-05	2.57E-03	6.16E-02	2.25E+01	6.16E-02	1.53E+01			
HAPs, TOTAL								1.00E-02	2.50E+00	1.87E-04	4.68E-02	8.88E-05	2.17E-02	2.74E-04	6.85E-02	1.03E-02	2.57E+00	6.16E+01	2.25E+04	6.16E+01	1.53E+04			

Asphalt cement heater

heat input	2.3	MMBtu/hr
sulfur content	0.50	%S

Assumptions:

Fired with distillate oil (No.2 or diesel)
Emission factors taken from AP-42 section 1.3 Fuel Oil Combustion
Heating value 140 MMBtu/ 1000 gallons

Pollutant	factors (lb/1000 gallon)		factors lb/MMBtu
SO2	142 S	where S = % sulfur	0.5071
NOx	20		0.1429
CO	5		0.0357
VOC (NMTOC)	0.34		0.0024
filterable PM	2		0.0143
condensible PM	1.3		0.0093
total PM	3.3		0.0236
total PM10	3.3		0.0236

Emission factors taken from AP-42,Table 11.19.2-2, 8/04, Crushed Stone Processing and Pulverized Mineral Processing

AP crusher

maximum capacity	65	tph
hours of operation	8760	hours

	emission factors (dry) (lb/ton)		emissions (lb/hr)		emissions ton/yr	
	TSP	**PM-10**	**TSP**	**PM-10**	**TSP**	**PM-10**
primary crusher	0.0054	0.0024	0.351	0.156	1.54	0.68
screening	0.025	0.0087	1.625	0.5655	7.12	2.48
conveyor transfer point	0.003	0.0011	0.195	0.0715	0.85	0.31
		total	**2.17**	**0.79**	**9.51**	**3.47**

combined EF	0.0334	0.0122

Emissions summary from Silo Filling and Loadout operations

Pollutant	CAS Nos.	Emission Factors (lb/ton) Silo Filling SCC-3-05-002-13	Emission Factors (lb/ton) Load out SCC-3-05-002-14	Potential Emissions (lb/hr) Silo Filling SCC-3-05-002-13	Potential Emissions (lb/hr) Load out SCC-3-05-002-14	Emission factors (lb/ton) Silo Filling plus Load Out
Total PM		5.86E-04	5.22E-04	1.46E-01	1.30E-01	1.11E-03
CO		1.18E-03	1.35E-03	2.95E-01	3.37E-01	2.53E-03
VOC		1.22E-02	3.91E-03	3.05E+00	9.77E-01	1.61E-02
PAH HAPs TOTAL		2.89E-05	2.02E-05	7.24E-03	5.05E-03	4.92E-05
Volatile organic HAPs, TOTAL		1.58E-04	6.24E-05	3.96E-02	1.56E-02	2.21E-04
HAPs, TOTAL		1.87E-04	8.66E-05	4.68E-02	2.17E-02	2.74E-04
Benzo(a)pyrene (T)	50328	0.00E+00	7.84E-09	0.00E+00	1.96E-06	7.84E-09
Napthalene (H)	91203	4.62E-06	4.26E-06	1.16E-03	1.07E-03	8.88E-06
Phenol (TH)	108952	0.00E+00	4.02E-06	0.00E+00	1.01E-03	4.02E-06
Benzene (TH)	71432	3.90E-06	2.16E-06	9.75E-04	5.41E-04	6.06E-06
Methyl bromide (H)	74839	5.97E-07	3.99E-07	1.49E-04	9.98E-05	9.96E-07
Methyl ethyl ketone (TH)	78933	4.75E-06	2.04E-06	1.19E-03	5.09E-04	6.79E-06
Carbon disulfide (TH)	75150	1.95E-06	5.41E-07	4.87E-04	1.35E-04	2.49E-06
Cumene (H)	98828	0.00E+00	4.57E-06	0.00E+00	1.14E-03	4.57E-06
Ethyl benzene (H)	100414	4.63E-06	1.16E-05	1.16E-03	2.91E-03	1.63E-05
Ethyl chloride (chloroethane) (H)	75003	0.00E+00	8.73E-09	0.00E+00	2.18E-06	8.73E-09
Formaldehyde (TH)	50000	8.41E-05	3.66E-06	2.10E-02	9.15E-04	8.77E-05
Hexane, n- (TH)	110543	1.22E-05	6.24E-06	3.05E-03	1.56E-03	1.84E-05
Methyl chloride (H)	74873	0.00E+00	6.24E-07	0.00E+00	1.56E-04	6.24E-07
Methyl chloroform (TH)	71556	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Methylene chloride (TH)	75092	3.29E-08	0.00E+00	8.23E-06	0.00E+00	3.29E-08
Perchloroethylene (tetrachloroethylene) (TH)	127184	0.00E+00	3.20E-07	0.00E+00	8.01E-05	3.20E-07
Styrene (TH)	100425	6.58E-07	3.04E-07	1.65E-04	7.59E-05	9.62E-07
Toluene (TH)	108883	7.56E-06	8.73E-06	1.89E-03	2.18E-03	1.63E-05
Trichloroethylene (TH)	79016	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Trichlorofluoromethane (CFC 111) (T)	75694	0.00E+00	5.41E-08	0.00E+00	1.35E-05	5.41E-08
Trimethylpentane, 2,2,4- (H)	540841	3.78E-08	7.49E-08	9.44E-06	1.87E-05	1.13E-07
Xylene (TH)	1330207	2.44E-05	1.71E-05	6.09E-03	4.26E-03	4.14E-05
Xylene, o- (H)	95476	6.95E-06	3.33E-06	1.74E-03	8.32E-04	1.03E-05
Hydrgen Sulfide (T)	7783064	1.46E-06	1.46E-06	3.65E-04	3.65E-04	2.92E-06

Plant maximum production capacity:	250	tons per hour
Requested Annual Production Limit:	1,488,581	tons per year
Requested Daily Production Limit:	6,000	tons per day

V	-0.5 %
t	325 oF
	785 oR

Table 11.1-14

Predictive Emission Factor Equations for Load-out and silo Filling Operations

source	pollutant	EF (lb/ton)
Load out SCC-3-05-002-14	Total PM	0.000521937
	Organic PM	0.000340937
	TOC	0.004158948
	CO	0.00134924
Silo Filling SCC-3-05-002-13	Total PM	0.000585889
	Organic PM	0.000253889
	TOC	0.012186685
	CO	0.001179981

Table 11.1-15
Speciation Profiles for Load-out, Silo Filling and Asphalt Storage Emissions - Organic PM based Compounds

		Spec. profile for Load-out and yard emissions	Spec. profile for Silo filling and asphalt storage tank emissions	loadout emission factors (lb/ton)	Silo filling emission factors (lb/ton)
		% Compound / Organic PM	% Compound / Organic PM		
Benzo(a)pyrene (T)	50328	0.0023	0	7.84155E-09	0
Napthalene (H)	91203	1.25	1.82	4.26171E-06	4.62078E-06
PAH HAPs TOTAL		5.93	11.4	2.02176E-05	2.89434E-05
Phenol (TH)	108952	1.18	0	4.02306E-06	0

Table 11.1-16

Speciation Profiles for Load-out, Silo Filling and Asphalt Storage Emissions - Organic Volatile based Compounds

		Spec. profile for Load-out and yard emissions	Spec. profile for Silo filling and asphalt	loadout emission factors (lb/ton)	Silo filling emission factors (lb/ton)
		% Compound / TOC	% Compound / TOC		
VOC		94	100	0.003909411	0.012186685
Benzene (TH)	71432	0.052	0.032	2.16265E-06	3.89974E-06
Methyl bromide (H)	74839	0.0096	0.0049	3.99259E-07	5.97148E-07
Methyl ethyl ketone (TH)	78933	0.049	0.039	2.03788E-06	4.75281E-06
Carbon disulfide (TH)	75150	0.013	0.016	5.40663E-07	1.94987E-06
Cumene (H)	98828	0.11	0	4.57484E-06	0
Ethyl benzene (H)	100414	0.28	0.038	1.16451E-05	4.63094E-06
Ethyl chloride (chloroethane) (H)	75003	0.00021		8.73379E-09	0
Formaldehyde (TH)	50000	0.088	0.69	3.65987E-06	8.40881E-05
Hexane, n- (TH)	110543	0.15	0.1	6.23842E-06	1.21867E-05
Methyl chloride (H)	74873	0.015		6.23842E-07	0
Methyl chloroform (TH)	71556	0	0	0	0
Methylene chloride (TH)	75092	0	0.00027	0	3.29041E-08
Perchloroethylene (tetrachloroethylene) (TH)	127184	0.0077	0	3.20239E-07	0
Styrene (TH)	100425	0.0073	0.0054	3.03603E-07	6.58081E-07
Toluene (TH)	108883	0.21	0.062	8.73379E-06	7.55574E-06
Trichloroethylene (TH)	79016	0	0	0	0
Trichlorofluoromethane (CFC 111) (T)	75694	0.0013	0	5.40663E-08	0
Trimethylpentane, 2,2,4- (H)	540841	0.0018	0.00031	7.48611E-08	3.77787E-08
Xylene (TH)	1330207	0.41	0.2	1.70517E-05	2.43734E-05
Xylene, o- (H)	95476	0.08	0.057	3.32716E-06	6.94641E-06
Volatile organic HAPs, TOTAL		1.5	1.3	6.23842E-05	0.000158427

		loadout emission factors (lb/ton)	Silo filling emission factors (lb/ton)
Hydrogen Sulfide	7783064	0.00000146	0.00000146

*** These emissions factors were taken from the October 12, 2005 letter from Keith Overcash stating the emissions factors resulting from testing at Mangum Asphalt Services, Knightdale, Wake County, and at S.T. Wooten Asphalt Services, Sanford, Lee County.

CONCRETE BATCH PLANT EMISSIONS CALCULATOR - INPUT SCREEN
REVISION D; October 15, 2015

Instructions: Enter emission source / facility data on the "INPUT" tab/screen. The air emission results and summary of input data are viewed / printed on the "OUTPUT" tab/screen. The different tabs are on the bottom of this screen.

This spreadsheet is for your use only and should be used with caution. DENR does not guarantee the accuracy of the information contained. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current information available. DENR is not responsible for errors or omissions that may be contained herein.

Directions: Enter and select information in the boxes that are highlighted in blue:

General Facility Information

COMPANY NAME:	Carolina Sunrock LLC
FACILITY ID NUMBER:	NA
PERMIT NUMBER	NA
FACILITY CITY:	Burlington
FACILITY COUNTY:	Alamance
SPREADSHEET PREPARED BY:	RTP Environmental Associates Inc.

General Facility Information

MAXIMUM HOURLY THROUGHPUT AT TRUCK LOAD OUT	120	(yd^3/hour)
ACTUAL ANNUAL PRODUCTION	1,051,200	(yd^3/year)
MAXIMUM ANNUAL PRODUCTION*	1,051,200	(yd^3/year)

*Default maximum annual production is maximum hourly throughput times 8,760 hours per year. Enter another limit if applicable (i.e. for arsenic modeling).

Facility Production Information

PERCENT OF ANNUAL LOADOUT THROUGH TRUCK MIX	100	(% by volume)
PERCENT OF ANNUAL LOADOUT THROUGH CENTRAL MIX	0	(% by volume)

Facility Emissions Control Information

IS THERE A CONTROL DEVICE ON THE TRUCK MIX?	2	(1=No, 2=Yes)
IS THERE A CONTROL DEVICE ON THE CENTRAL MIX?	1	(1=No, 2=Yes)

Material Composition Information

			Typical NC Comp.*
Cement	448	lbs	*410 lbs*
Supplement	148	lbs	*120 lbs*
Coarse Aggregate	1980	lbs	*1884 lbs*
Sand	1440	lbs	*1443 lbs*
Water	140	lbs	*167 lbs*
Total	4156	lbs	*4024 lbs*

** North Carolina typical material composition is based on data from industry contacts. User may enter site-specific data.*

15A NCAC 2D .0515 "Particulates from Miscellaneous Industrial Processes"

	Cement Silo	Flyash silo	Sand&Agg Weigh hopper	Truck mix[1]	Central mix[1]	
Enter the process rate if different from default, otherwise leave blank						
Process Rate[2]	25	25	205.200	240.96	0.000	tons/hr
Maximum Allowable Emission Rate[3]	35.4	35.4	58.8	60.5	0.0	lbs/hr
PM Emission Rate Before controls	18.250	78.500	0.985	52.210	0.000	lbs/hr
PM Emission Rate After Controls	0.025	0.223	0.001	1.001	0.000	lbs/hr
Assumed control device efficiency for weigh hopper[4]			99.9%			
Complies with 2D .0515?	yes	yes	yes	yes	yes	
Control device required to comply?	no	yes	no	no	no	

[1] *Emission factors for truck/central mix include emissions from cement & supplement weigh hoppers.*

[2] *Default process rate for silo loading is 25 tons per hour. Default process weight for sand & aggr weigh hopper includes only aggr & sand. Default process rate for truck mix and central mix includes all components except water since assumes water is added directly to truck.*

[3] *Allowable emission rate should be calculated to 3 significant digits.*

[4] *Default efficiency is 99.9% for bagfilters. Enter 0 if weigh hopper is not controlled.*

CONCRETE BATCH PLANT EMISSIONS CALCULATOR - OUTPUT SCREEN

REVISION D; October 15, 2015

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SOURCE / FACILITY / USER INPUT SUMMARY (FROM INPUT SCREEN)

General Facility Information

COMPANY NAME:	Carolina Sunrock LLC
FACILITY ID NUMBER:	NA
PERMIT NUMBER	NA
FACILITY CITY:	Burlington
FACILITY COUNTY:	Alamance
SPREADSHEET PREPARED BY:	RTP Environmental Associates Inc.

General Facility Information

MAXIMUM HOURLY THROUGHPUT AT TRUCK LOAD OUT	120	(yd^3/hour)
ACTUAL ANNUAL PRODUCTION	1051200	(yd^3/year)

Facility Production Information

PERCENT OF ANNUAL LOADOUT THROUGH TRUCK MIX	100	(% by volume)
PERCENT OF ANNUAL LOADOUT THROUGH CENTRAL MIX	0	(% by volume)

Facility Emissions Control Information

IS THERE A CONTROL DEVICE ON THE TRUCK MIX?	2	(1=No, 2=Yes)
IS THERE A CONTROL DEVICE ON THE CENTRAL MIX?	1	(1=No, 2=Yes)

Material Composition Information

			Typical NC Comp.*
Cement	448	lbs	*410 lbs*
Supplement	148	lbs	*120 lbs*
Coarse Aggregate	1980	lbs	*1884 lbs*
Sand	1440	lbs	*1443 lbs*
Water	140	lbs	*167 lbs*
Total	4156	lbs	*4024 lbs*

** North Carolina typical material composition is based on data from industry contacts. User may enter site-specific data.*

PARTICULATE MATTER EMISSIONS INFORMATION

PARTICULATE EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
	Pollutant	lb/hr	tons/yr	lb/hr	tons/yr	lb/hr	tons/yr
truck mix*	PM	1.001	4.386	52.210	228.678	1.001	4.386
	PM10	0.375	1.645	14.912	65.314	0.375	1.645
central mix*	PM	0.000	0.000	0.000	0.000	0.000	0.000
	PM10	0.000	0.000	0.000	0.000	0.000	0.000
cement silo	PM	0.027	0.117	19.622	85.946	0.027	0.117
	PM10	0.009	0.040	12.634	55.335	0.009	0.040
suppl. Silo	PM	0.079	0.346	27.883	122.128	0.079	0.346
	PM10	0.044	0.191	9.768	42.784	0.044	0.191
weigh hopper** [sand & aggr.]	PM	0.985	4.314	0.985	4.314	0.985	4.314
	PM10	0.575	2.517	0.575	2.517	0.575	2.517
sand & aggr.	PM	3.003	13.155	3.003	13.155	3.003	13.155
	PM10	1.433	6.275	1.433	6.275	1.433	6.275
TOTAL PM	PM	5.095	**22.318**	103.704	**454.222**	5.095	**22.318**
TOTAL PM10	PM10	2.435	**10.667**	39.321	**172.225**	2.435	**10.667**
Title V Potential	PM10						**0.231**

*Truck/Central mix emission factors include emissions from cement & supplement weigh hopper(s).

**Actual/Potential weigh hopper (sand & aggr) emissions assumed uncontrolled since AP-42 reports "no data" for controlled.

CONCRETE BATCH PLANT EMISSIONS CALCULATOR - OUTPUT SCREEN

REVISION D; October 15, 2015

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TOXIC / HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION

POLLUTANT	CAS NUMBER	ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMSSIONS (BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
		lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
Arsenic Unlisted Compounds (TH)	ASC-OTHER	6.59E-05	5.77E-01	2.49E-03	2.18E+01	6.59E-05	5.77E-01
Beryllium metal (TH)	7440-41-7	4.53E-06	3.97E-02	1.00E-05	8.77E-02	4.53E-06	3.97E-02
Cadmium Metal (TH)	7440-43-9	5.00E-07	4.38E-03	7.69E-06	6.74E-02	5.00E-07	4.38E-03
Chromic Acid (TH)	7738-94-5	1.58E-04	1.39E+00	4.25E-04	3.73E+00	1.58E-04	1.39E+00
Lead Unlisted Compounds (H)	PBC-OTHER	5.96E-05	5.22E-01	1.32E-03	1.16E+01	5.96E-05	5.22E-01
Manganese Unlisted compounds (TH)	MNC-OTHER	7.49E-04	6.56E+00	7.67E-03	6.72E+01	7.49E-04	6.56E+00
Nickel metal (TH)	7440-02-0	1.92E-04	1.68E+00	9.19E-04	8.05E+00	1.92E-04	1.68E+00
Phosphorus Metal Yellow or White (H)	7223-14-0	4.71E-04	4.13E+00	1.72E-03	1.51E+01	4.71E-04	4.13E+00
Selenium compounds (H)	SEC	4.68E-06	4.10E-02	9.43E-05	8.26E-01	4.68E-06	4.10E-02
Total HAPs		1.71E-03	1.49E+01	1.47E-02	1.28E+02	1.71E-03	1.49E+01
Highest HAP Manganese		7.49E-04	6.56E+00	7.67E-03	6.72E+01	7.49E-04	6.56E+00

TOXIC AIR POLLUTANT EMISSIONS INFORMATION (FOR PERMITTING PURPOSES)

EXPECTED EMISSIONS AFTER CONTROLS / LIMITATIONS

(Daily calculations are based on maximum hourly plant capacity operating at 24 hours per day. If over the TPER, the facilty should more closely analyze the maximum daily emisions based on actual operation. Annual calculations are based on the actual annual production as entered on the INPUT worksheet.)

POLLUTANT	CAS NUMBER	lb/hr	lb/day	lb/yr
Arsenic Unlisted Compounds (TH)	ASC-OTHER			0.5769
Beryllium metal (TH)	7440-41-7			0.040
Cadmium Metal (TH)	7440-43-9			0.004
Chromic Acid (TH)	7738-94-5		0.0038	
Manganese Unlisted compounds (TH)	MNC-OTHER		0.018	
Nickel metal (TH)	7440-02-0		0.005	

CONCRETE BATCH PLANT EMISSIONS CALCULATOR - TAP CALCULATIONS

REVISION D; October 15, 2015

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ARSENIC (HAP/TAP) EMISSIONS INFORMATION

ARSENIC EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Arsenic	5.69E-05	4.98E-01	2.43E-03	2.13E+01	5.69E-05	4.98E-01
central mix	Arsenic	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Arsenic	1.14E-07	9.98E-04	4.52E-05	3.96E-01	1.14E-07	9.98E-04
supplement silo*	Arsenic	8.88E-06	7.78E-02	8.88E-06	7.78E-02	8.88E-06	7.78E-02
TOTAL	**Arsenic**	**6.59E-05**	**5.77E-01**	**2.49E-03**	**2.18E+01**	**6.59E-05**	**5.77E-01**
		(Arsenic TPER: 0.053 lb/yr)					

BERYLLIUM (HAP/TAP) EMISSIONS INFORMATION

BERYLLIUM EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Beryllium	3.72E-06	3.26E-02	8.73E-06	7.64E-02	3.72E-06	3.26E-02
central mix	Beryllium	-	-	-	-	-	-
cement silo	Beryllium	1.31E-08	1.14E-04	4.81E-07	4.21E-03	1.31E-08	1.14E-04
supplement silo*	Beryllium	8.03E-07	7.03E-03	8.03E-07	7.03E-03	8.03E-07	7.03E-03
TOTAL	**Beryllium**	**4.53E-06**	**3.97E-02**	**1.00E-05**	**8.77E-02**	**4.53E-06**	**3.97E-02**
		(Beryllium TPER: 0.28 lb/yr)					

CADMIUM (HAP/TAP) EMISSIONS INFORMATION

CADMIUM EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Cadmium	3.24E-07	2.84E-03	1.22E-06	1.07E-02	3.24E-07	2.84E-03
central mix	Cadmium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Cadmium	-	-	6.29E-06	5.51E-02	-	-
supplement silo*	Cadmium	1.76E-07	1.54E-03	1.76E-07	1.54E-03	1.76E-07	1.54E-03
TOTAL	**Cadmium**	**5.00E-07**	**4.38E-03**	**7.69E-06**	**6.74E-02**	**5.00E-07**	**4.38E-03**
		(Cadmium TPER: 0.37 lb/yr)					

CHROMIUM (HAP/TAP) EMISSIONS INFORMATION

CHROMIUM EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		(AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Chromium	1.47E-04	1.28E+00	4.08E-04	3.57E+00	1.47E-04	1.28E+00
central mix	Chromium	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Chromium	7.80E-07	6.83E-03	6.77E-06	5.93E-02	7.80E-07	6.83E-03
supplement silo*	Chromium	1.08E-05	9.49E-02	1.08E-05	9.49E-02	1.08E-05	9.49E-02
TOTAL	**Chromium**	**1.58E-04**	**1.39E+00**	**4.25E-04**	**3.73E+00**	**1.58E-04**	**1.39E+00**
		(Chromium TPER: 0.013 lb/day)					

CONCRETE BATCH PLANT EMISSIONS CALCULATOR - TAP CALCULATIONS

REVISION D; October 15, 2015

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LEAD (HAP) EMISSIONS INFORMATION

LEAD EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Lead	5.47E-05	4.79E-01	1.29E-03	1.13E+01	5.47E-05	4.79E-01
central mix	Lead	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Lead	2.93E-07	2.57E-03	1.98E-05	1.73E-01	2.93E-07	2.57E-03
supplement silo*	Lead	4.62E-06	4.05E-02	4.62E-06	4.05E-02	4.62E-06	4.05E-02
TOTAL	Lead	**5.96E-05**	**5.22E-01**	**1.32E-03**	**1.16E+01**	**5.96E-05**	**5.22E-01**

MANGANESE (HAP/TAP) EMISSIONS INFORMATION

MANGANESE EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Manganese	7.44E-04	6.52E+00	2.19E-03	1.92E+01	7.44E-04	6.52E+00
central mix	Manganese	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Manganese	3.14E-06	2.75E-02	5.48E-03	4.80E+01	3.14E-06	2.75E-02
supplement silo*	Manganese	2.27E-06	1.99E-02	2.27E-06	1.99E-02	2.27E-06	1.99E-02
TOTAL	Manganese	**7.49E-04**	**6.56E+00**	**7.67E-03**	**6.72E+01**	**7.49E-04**	**6.56E+00**

(Manganese TPER: 0.63 lb/day)

NICKEL (HAP/TAP) EMISSIONS INFORMATION

NICKEL EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Nickel	1.71E-04	1.50E+00	4.26E-04	3.73E+00	1.71E-04	1.50E+00
central mix	Nickel	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Nickel	1.12E-06	9.84E-03	4.73E-04	4.14E+00	1.12E-06	9.84E-03
supplement silo*	Nickel	2.02E-05	1.77E-01	2.02E-05	1.77E-01	2.02E-05	1.77E-01
TOTAL	Nickel	**1.92E-04**	**1.68E+00**	**9.19E-04**	**8.05E+00**	**1.92E-04**	**1.68E+00**

(Nickel TPER: 0.13 lb/day)

PHOSPHORUS (HAP) EMISSIONS INFORMATION

PHOSPHORUS EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Phosphorus	4.40E-04	3.85E+00	1.37E-03	1.20E+01	4.40E-04	3.85E+00
central mix	Phosphorus	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cement silo	Phosphorus	-	-	3.17E-04	2.78E+00	-	-
supplement silo*	Phosphorus	3.14E-05	2.75E-01	3.14E-05	2.75E-01	3.14E-05	2.75E-01
TOTAL	Phosphorus	**4.71E-04**	**4.13E+00**	**1.72E-03**	**1.51E+01**	**4.71E-04**	**4.13E+00**

SELENIUM (HAP) EMISSIONS INFORMATION

SELENIUM EMISSIONS		ACTUAL EMISSIONS (AFTER CONTROLS / LIMITS)		POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS)		POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS)	
Source	Pollutant	lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
truck mix	Selenium	4.04E-06	3.54E-02	9.37E-05	8.21E-01	4.04E-06	3.54E-02
central mix	Selenium	-	-	-	-	-	-
cement silo	Selenium	-	-	-	-	-	-
supplement silo*	Selenium	6.43E-07	5.63E-03	6.43E-07	5.63E-03	6.43E-07	5.63E-03
TOTAL	Selenium	**4.68E-06**	**4.10E-02**	**9.43E-05**	**8.26E-01**	**4.68E-06**	**4.10E-02**

APPENDIX C

TAPS MODELING REPORT

APPENDIX C

**TOXIC AIR POLLUTANT MODELING ANALYSIS
FOR THE PROPOSED CAROLINA SUNROCK
HOT MIX ASPHALT AND CONCRETE BATCH PLANT
IN CASWELL COUNTY
NORTH CAROLINA**

SUNROCK®

Prepared for:

Carolina Sunrock LLC
200 Horizon Drive, Suite 100
Raleigh, North Carolina 27615

Prepared by:

RTP Environmental Associates
304-A West Millbrook Road
Raleigh, NC 27609

September 2019

Table of Contents

Tables and Figures

1.0 INTRODUCTION

Carolina Sunrock LLC ("Sunrock") is proposing to construct a greenfield hot mix asphalt and concrete batch plant in Caswell County North Carolina. The proposed construction will result in emissions of six regulated North Carolina Toxic Air Pollutant ("TAP") pollutants. Modeling of these six pollutants has been conducted to demonstrate compliance with the Acceptable Ambient Levels ("AALs") of 15A NCAC 2D.1104. The modeled emissions have been established at levels to allow for facility operational flexibility by backcalculating the maximum emission rate for each source which allows for compliance with the AAL. Sunrock requests that the TAP permit limits be reestablished at the modeled compliant rates found in Table 2 of this report.

The modeling analyses presented herein conforms with the procedures specified in the Guidelines for Evaluating the Air Quality Impacts of Toxic Pollutants in North Carolina.[1]

[1] Guidelines for Evaluating the Air Quality Impacts of Toxic Pollutants in North Carolina, North Carolina Department of Environment and Natural Resources, Division of Air Quality Section. July 2017.

2.0 FACILITY LOCATION AND SITE DESCRIPTION

The Sunrock facility will be in southern Caswell county, along North Carolina Highway 62, approximately 11 miles northeast of Burlington on US 1. The approximate Universal Transverse Mercator (UTM) coordinates of the facility are 650,208m east and 4,013,069m north (NAD 83, Zone 17) at an elevation of 200m above mean sea level. Figure 1 shows the general location of the facility. Figure 2 shows the more specific facility location on the USGS 7.5 minute USGS quadrangles.

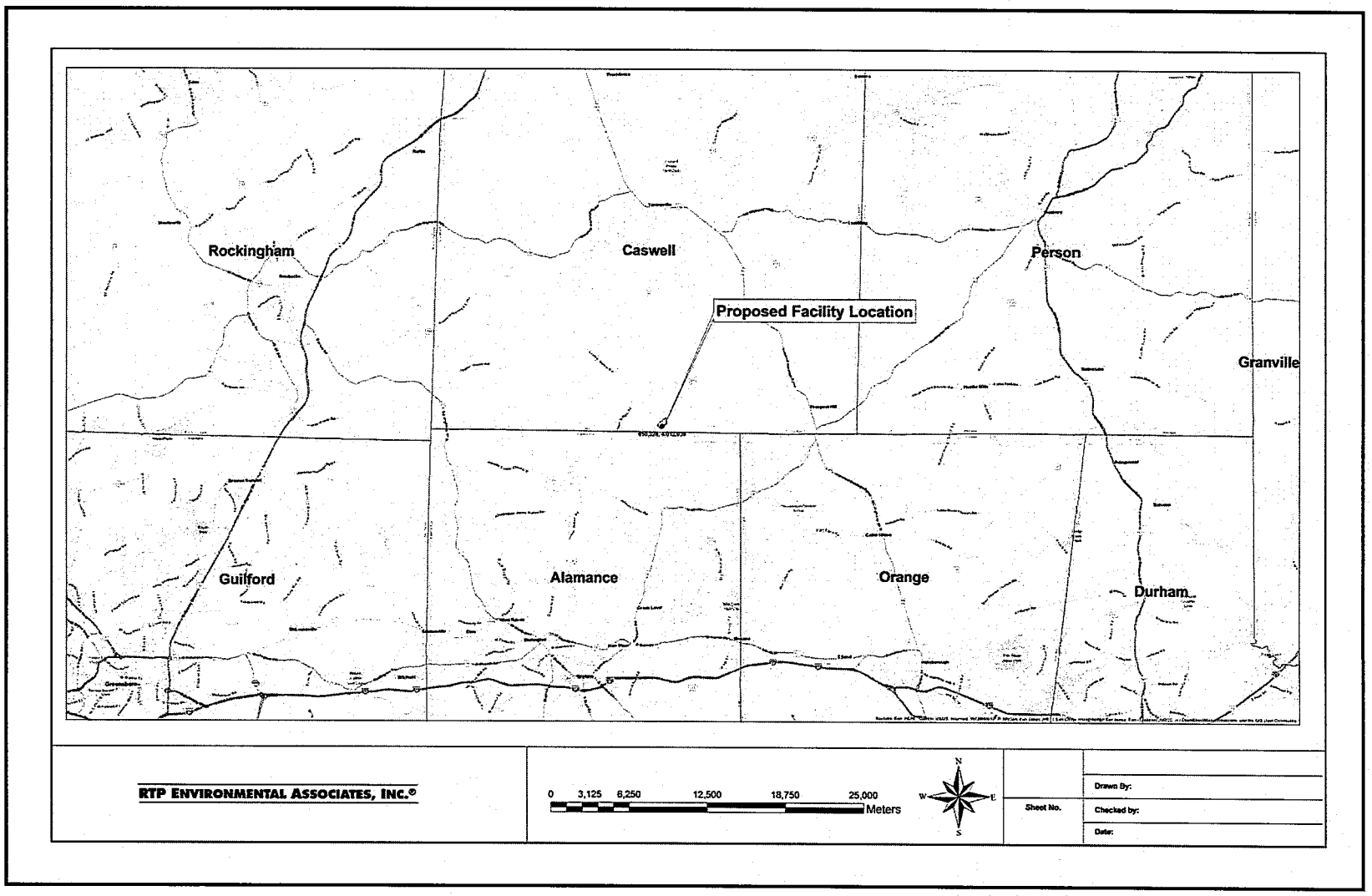

Figure 1. General Location of the Sunrock Burlington North Facility

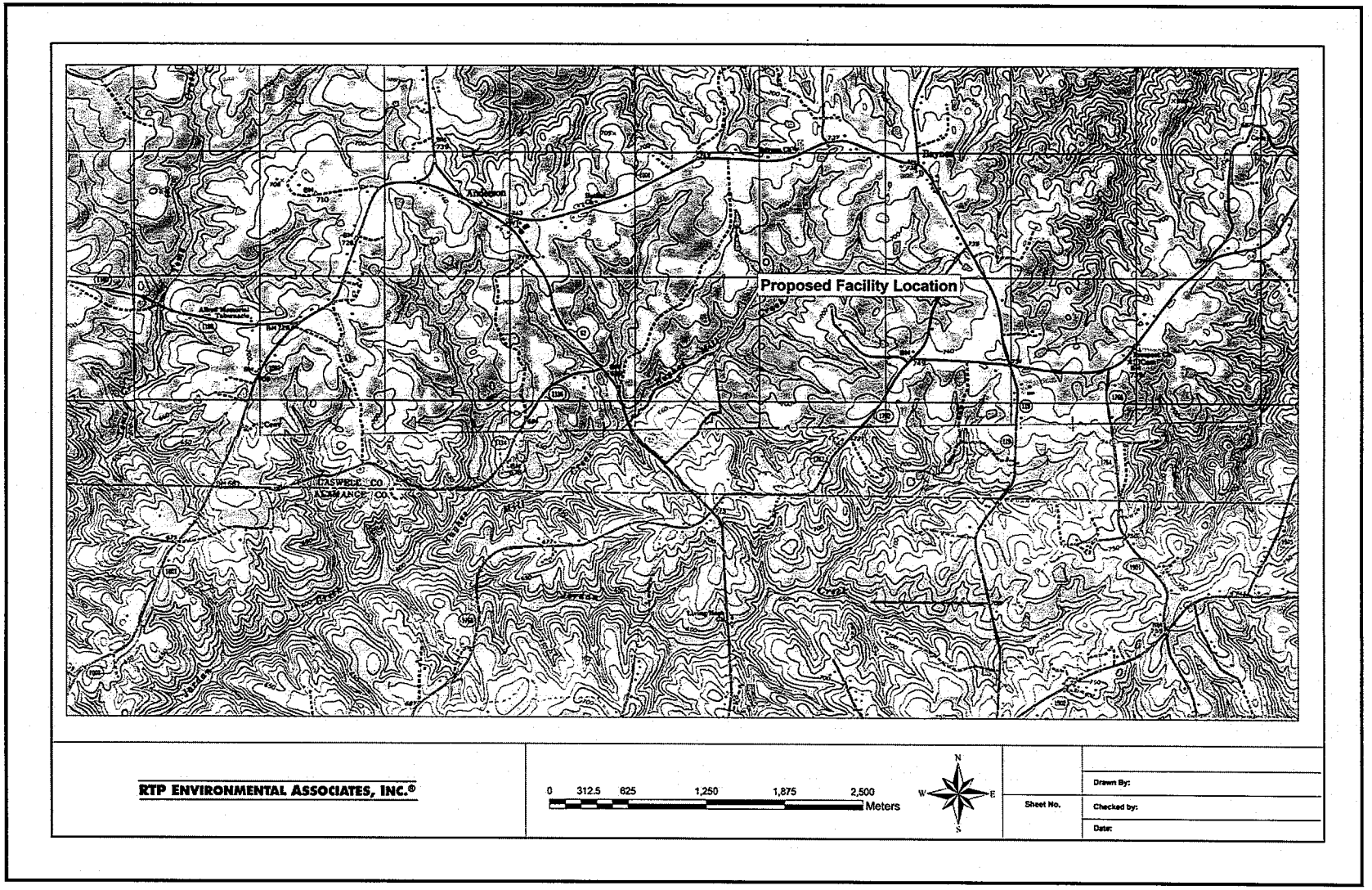

Figure 2. Specific Location of the Sunrock Burlington North Facility

3.0 MODEL SELECTION

Version 18081 of the AMS/EPA Regulatory Model (AERMOD) was used to conduct the dispersion modeling analysis. Please note that the EPA has recently released version 19191 of AERMOD. However, this version has yet to be incorporated into the BEEST modeling system employed by RTP Environmental. The recent update should not affect the modeled concentrations provided herein. AERMOD is the most appropriate model for calculating ambient concentrations near the Sunrock facility based on the model's ability to incorporate multiple sources and source types, the model's ability to incorporate building wake effects, and the model's ability to calculate concentrations within the cavity recirculation zone. It is also one of the models recommended for such studies by the North Carolina Department of Environmental Quality ("DEQ"). All model options were selected as recommended in the EPA Guidelines on Air Quality Models[2].

AERMOD is a Gaussian plume dispersion model that is based on planetary boundary layer principals for characterizing atmospheric stability. The model evaluates the non-Gaussian vertical behavior of plumes during convective conditions with the probability density function and the superposition of several Gaussian plumes. AERMOD is a modeling system with three components: AERMAP is the terrain preprocessor program, AERMET is the meteorological data preprocessor, and AERMOD includes the dispersion modeling algorithms.

AERMOD was developed to calculate concentrations in both simple and complex terrain. As with CTDMPLUS, AERMOD uses the dividing streamline concept to address plume interactions with elevated terrain.

---

[2] Guidelines on Air Quality Models, Appendix W of 40 CFR Part 51, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. January 17, 2017.

4.0 MODEL SETUP AND APPLICATION

AERMOD contains three modules: two pre-processors and the dispersion model. Model receptor elevations and height scales are developed with the AERMAP pre-processor, meteorological data are developed with the AERMET pre-processor, and the model algorithms are applied with AERMOD. Application of each of these three modules is discussed in the following sections.

4.1 *AERMAP*

The terrain pre-processor AERMAP was used to extract receptor elevation data from USGS National Elevation Data ("NED") files for use as input to AERMOD. One arc-second resolution NED data files were obtained. Receptor locations were based on North American Datum of 1983 ("NAD83"). AERMAP was used to generate the elevation and height scale for each receptor. The height scale is a measure of the height and distance of the local terrain feature that has the greatest influence on dispersion for that receptor.

The modeled receptor grid included approximately 7,300 receptors. The grid consisted of two Cartesian grids and discrete receptors placed along the facility property line at 50m intervals. The first Cartesian grid extended approximately 2,500m from the property line in all directions, with a dense receptor spacing of 100m. The second Cartesian grid extended from 2,500 to 7,500m from the property line, with receptor spacing of 250m.

Generally, a fine-mesh receptor grid is placed around the location of maximum concentrations to pinpoint the absolute maximum concentrations calculated from a facility. Additional modeling using a fine-mesh receptor grid was not necessary however, because the maximum pollutant concentrations occurred within 500m of the property line. The receptor spacing in this region is 100m; therefore, no fine

mesh receptor grid was required. Figure 3 shows the near field receptors that were employed in the analysis.

4.2 *AERMET*

The meteorological data pre-processor AERMET was used to develop meteorological data for the AERMOD modeling system. The AERMET software processes surface meteorological data and twice-daily upper air sounding data into the proper format using a three-stage process. The first stage extracts the data and administers several data quality checks. The second stage merges the data, and the third stage estimates the required boundary layer parameters and writes the data in a format readable by AERMOD. Five years (2014-2018) of "AERMOD-ready" meteorological data were obtained from the DEQ. The AERMET data were processed by the DEQ using AERMET Version 18081. The DEQ's sequential hourly surface data from the National Weather Service (NWS) station in Danville, VA (WBAN No. 13728) and upper air data from Greensboro, NC (WBAN No. 13723) were used. These data are the most representative data for modeling facilities in Caswell County.

4.3 *AERMOD*

AERMOD was run in the regulatory default mode using the rural land use dispersion option. The land use typing scheme of Auer was used to determine the proper land use classification of the site.[3] Specifically, the USGS land use coverages were obtained for the area. The land use classification codes were then categorized as either urban or rural, based on the USGS land use classification codes. It was

[3] Auer, Jr., A.H. "Correlation of Land Use and Cover with Meteorological Anomalies." Journal of Applied Meteorology, 17:636-643, 1978.

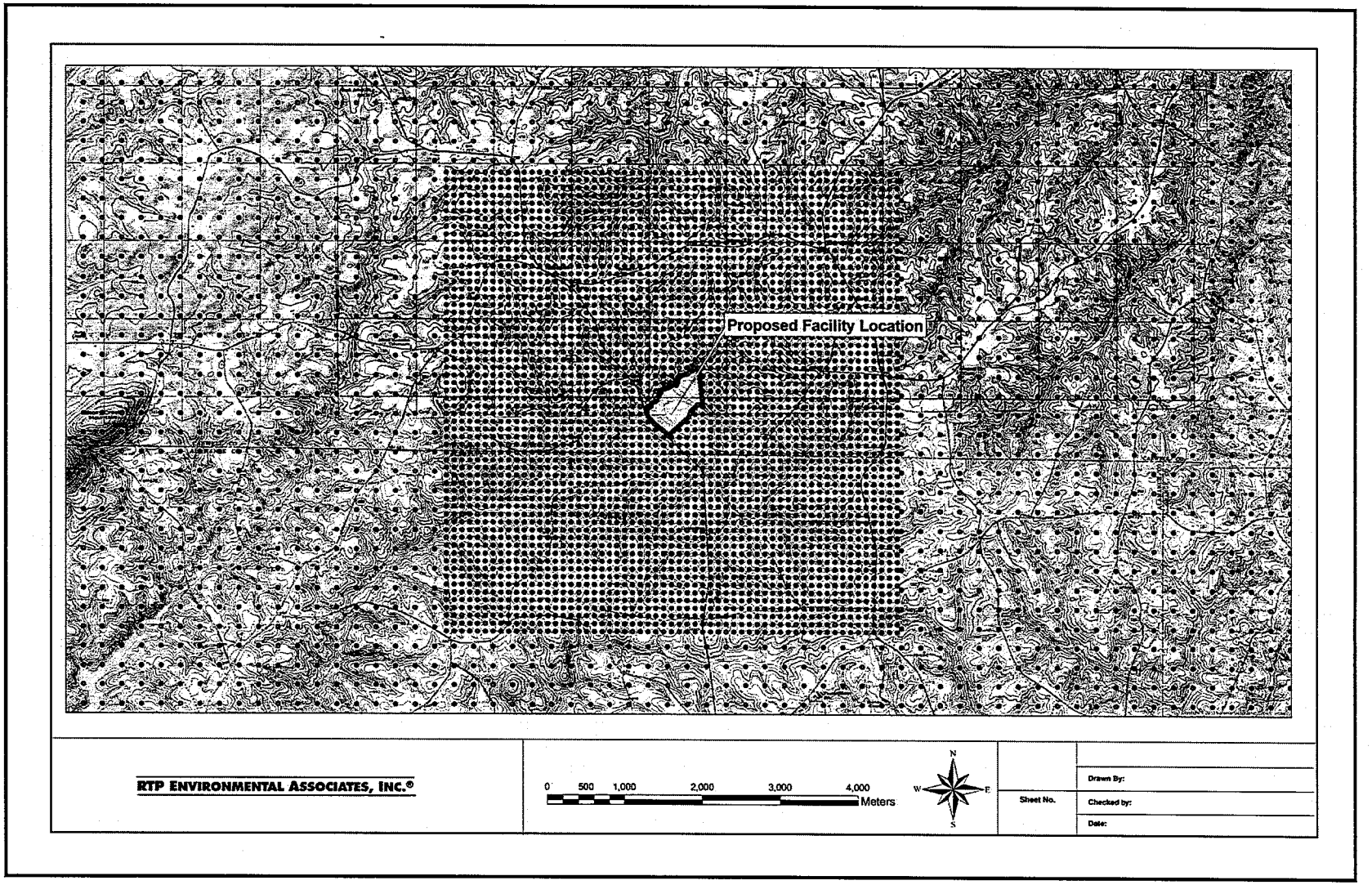

Figure 3. Receptors Employed in the Sunrock Modeling Analysis

determined that the land use within the 3km radius of the area comprises less than 50% of the following land use types, as defined by Auer:

- I1 - Heavy Industrial - major chemical, steel and fabrication industries; generally 3-5 story buildings - grass and tree growth extremely rare; <5% vegetation;
- I2 - Light Industrial - rail yards, truck depots, warehouses, industrial parks, minor fabrications; generally 1-3 story buildings - very limited grass, trees almost totally absent; <5% vegetation;
- C1 - Commercial - office and apartment buildings, hotels; >10 story heights - limited grass and trees; <15% vegetation;
- R2 - Compact Residential - single, some multiple, family dwelling with close spacing; generally < 2 story; garages no driveways - limited lawn sizes and shade trees; <30% vegetation; and
- R3 - Compact Residential - old multi-family dwellings with close lateral separation; generally <2 story; garages no driveways - limited lawn sizes, old established shade trees; <35% vegetation.

Therefore, the land use within 3km of the facility was determined to be rural.

5.0 SOURCE INPUT PARAMETERS AND MODELED EMISSIONS

The modeled point source stack parameter data (e.g., stack height, diameter, velocity and temperature) were obtained from Sunrock and are presented in Table 1. The modeled emission rates are presented in Table 2. The potential emissions were modeled initially and then the model was iterated to determine the maximum emissions that could occur and allow the facility to comply with the AALs.

Sunrock requests that these AAL compliant emission rates shown in Table 2 be incorporated as permit conditions so that the facility can maintain maximum operational flexibility.

Table 1. Sunrock TAP Model Input Data

Model Source No.	Source ID	Source Description	UTM East (m)	UTM North (m)	Base Elevation (m)	Stack Height (ft)	Gas Temperature (F)	Exit Velocity (ft/sec)	Stack Diameter (ft)
Point Sources									
1	CD_1	Hot Mix Asphalt	650207.90	4013086.92	201.32	30.2	240.0	96.5	3.1
2	CD_2	Concrete Batch Plant and Silo Filling	650220.86	4013028.42	203.17	35.0	77.0	80.0	1.5
3	ESH_2	Asphalt Cement Heater	650203.84	4013069.45	201.50	9.0	325.0	0.03	1.0
4	ESH_1	Heater for Liquid Asphalt Tank	650190.21	4013088.27	200.30	15.0	325.0	0.03	0.2
Volume Sources									
Model Source No.	**Source ID**	**Source Description**	**UTM East (m)**	**UTM North (m)**	**Base Elevation (m)**	**Height (ft)**	**Initial Horizontal Dimension (ft)**	**Initial Vertical Dimension (ft)**	
5	F1	Asphalt Silo Loadout	650185.20	4013059.18	200.90	40.00	5.81	18.60	
6	F2	Cement Silo Loadout	650231.19	4013023.90	203.91	32.50	5.81	15.12	

Table 2. Sunrock Modeled TAP Emissions (lb/hr)

Model Source No.	Source ID	Source Description	Modeled Emissions (lb/hr)					
			Arsenic (As)	Benzene (Bz)	Nickel (Ni)	Mercury (Hg)	Formaldehyde (Form)	Cadmium (Cd)
1	CD_1	Hot Mix Asphalt	1.64E-03	8.85E-01	2.46E-01	2.42E-02	4.05E+01	7.08E-03
2	CD_2	Concrete Batch Plant and Silo Filling	7.73E-04	0.00E+00	2.99E-03	0.00E+00	0.00E+00	3.44E-05
3	ESH_2	Asphalt Cement Heater	5.63E-05	2.21E-05	5.60E-05	1.34E-04	1.44E-02	2.48E-04
4	ESH_1	Heater for Liquid Asphalt Tank	5.16E-05	2.02E-05	5.14E-05	1.23E-04	1.32E-02	2.27E-04
5	F1	Asphalt Silo Loadout	0.00E+00	4.80E-03	0.00E+00	0.00E+00	4.48E-02	0.00E+00
6	F2	Cement Silo Loadout	3.94E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

5.1 *Good Engineering Practice (GEP) Stack Height*

A good engineering practice ("GEP") stack height evaluation was conducted to determine if inclusion of building wake effects would be required in the modeling analysis. Procedures used in this analysis were in accordance with those described in the EPA document Guideline for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations - Revised).[4]

GEP formula stack height, as defined in 40 CFR 51, is expressed as GEP = Hb + 1.5L, where Hb is the building height and L is the lesser of the building height or maximum projected width. Nearby is defined as the distance up to five times the lesser of the height or width of a structure, but not greater than one-half mile. Both the height and width of the structure are determined from the frontal area of the structure projected onto a plane perpendicular to the wind. Since the stack heights at the GSC facility were determined to be affected by building downwash, AERMOD was run considering building wake effects. Direction-specific building dimensions were calculated using the EPA's BPIP-PRIME computer program (Version 04274). Figure 4 provides a plot plan showing the buildings and sources modeled.

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[4] Guideline for Determination of Good Engineering Practice Stack Height (Technical Support Document for Stack Height Regulations (Revised). EPA-450/4-80-023R, U.S. Environmental Protection Agency. June 1985.

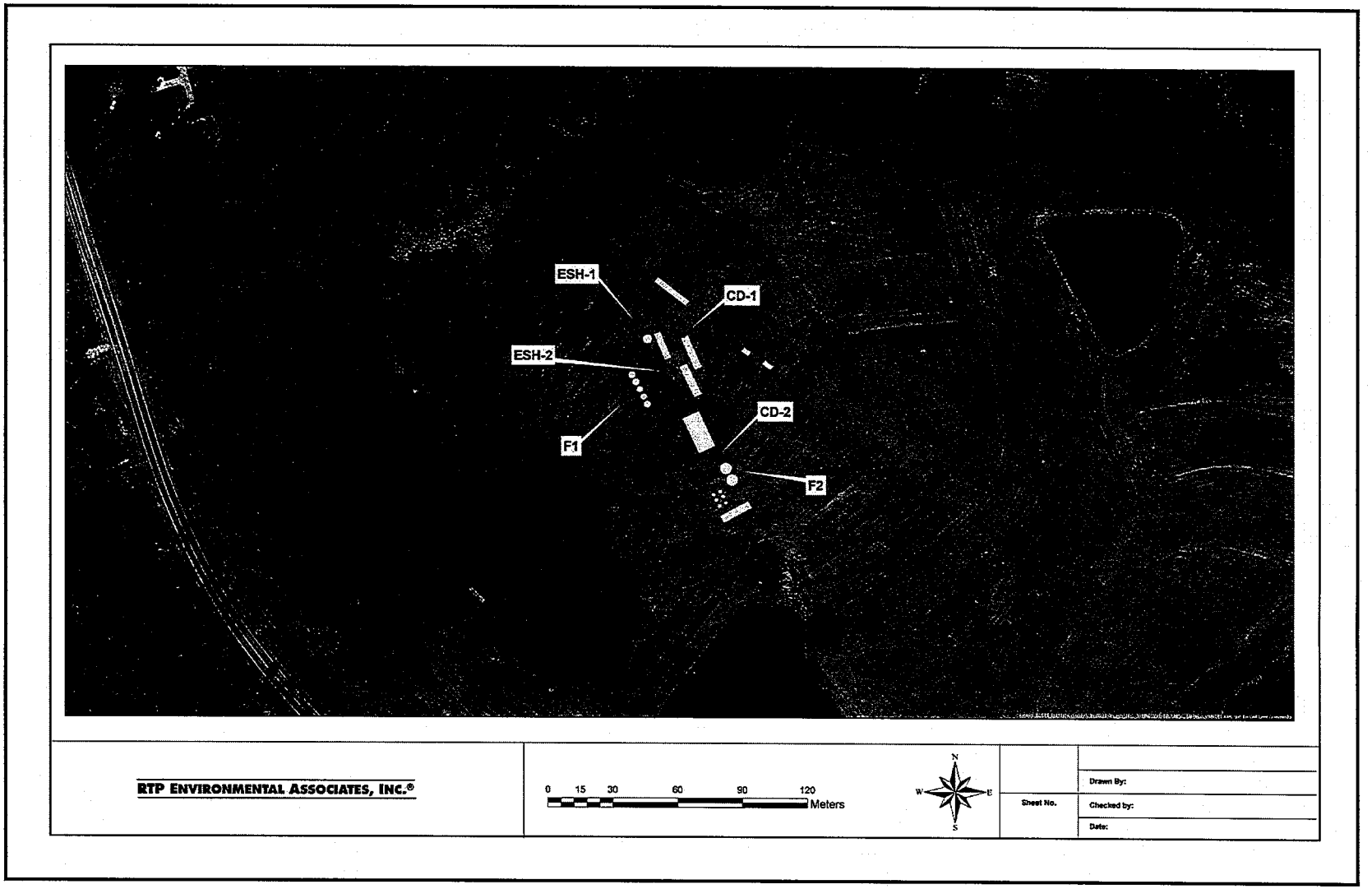

Figure 4. Sunrock Plot Plan

6.0 MODELING METHODOLOGY

Impacts resulting from AERMOD using hourly meteorological data are considered to be part of a refined analysis by the DEQ. A five- year meteorological dataset was modeled. The maximum concentrations for the five-year period were calculated and compared to the applicable AAL(s) for each pollutant.

7.0 RESULTS

The AERMOD analysis results are presented in Table 3. The maximum combined impacts from all sources are presented. As shown, the impacts for each TAP are compliant with the AALs. Attachment A provides the model protocol checklist and tax map (as obtained from the Caswell County GIS server). Attachment B contains the model summary output. Actual model input and output files, including the BPIP-PRIME and AERMAP files, are included on the enclosed diskette.

Table 3. AERMOD Model Summary Results

Pollutant	Averaging Period	Maximum Modeled Impact ($\mu g/m^3$)	Acceptable Ambient Level (AAL) ($\mu g/m^3$)	Percent of AAL
Arsenic	Annual	0.0020	0.0021	94.8%
Benzene	Annual	0.11	0.12	95.0%
Cadmium	Annual	0.0052	0.0055	95.1%
Formaldehyde	1-hour	143	150	95.0%
Mercury	24-hour	0.057	0.060	95.2%
Nickel	24-hour	0.57	0.60	95.1%

7.1 Summary and Conclusions

Emissions of NC regulated toxic air pollutants are emitted from the Sunrock facility. These pollutants were evaluated in an air quality modeling analysis. The calculated potential emissions from each source result in ambient concentrations less than the AALs. Emissions were therefore maximized such that total facility impacts were just below the AALs. Maximizing emissions in this manner allows maximum facility operational flexibility while ensuring that ground level impacts do not exceed levels designed to protect human health and welfare. Sunrock requests that the maximized emissions be incorporated as permit conditions.

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ATTACHMENT A

Model Supporting Data

- Model Input Data
- Volume Source Calculations
- Model Protocol Checklist
- Tax Parcel Map

Carolina Sunrock - Burlington North Model Input (NAD83, Z17)- 9/9/2019

Source ID	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (ft)	Temp. (°F)	Exit Velocity (ft/sec)	Stack Diameter (ft)	As (lb/hr)	Bz (lb/hr)	Ni (lb/hr)	Hg (lb/hr)	Form (lb/hr)	Cd (lb/hr)
CD_1	Hot Mix Asphalt	650207.90	4013086.92	201.32	30.2	240.0	96.5	3.1	1.64E-03	8.85E-01	2.46E-01	2.42E-02	4.05E+01	7.08E-03
CD_2	Concrete Batch Plant and Silo Filling	650220.86	4013028.42	203.17	35.0	77.0	80.0	1.5	7.73E-04	0.00E+00	2.99E-03	0.00E+00	0.00E+00	3.44E-05
ESH_2	Asphalt Cement Heater	650203.84	4013069.45	201.50	9.0	325.0	0.03	1.0	5.63E-05	2.21E-05	5.60E-05	1.34E-04	1.44E-02	2.48E-04
ESH_1	Heater for Liquid Asphalt Tank	650190.21	4013088.27	200.30	15.0	325.0	0.03	0.2	5.16E-05	2.02E-05	5.14E-05	1.23E-04	1.32E-02	2.27E-04

Volume Source Input

Source ID	Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Release Height (ft)	Initial Horizontal Dimension s_y (ft)	Initial Vertical Dimension s_z (ft)	As (lb/hr)	Bz (lb/hr)	Ni (lb/hr)	Hg (lb/hr)	Form (lb/hr)	Cd (lb/hr)
F1	Asphalt Silo Loadout	650185.20	4013059.18	200.90	40.00	5.81	18.60	0.00E+00	4.86E-03	0.00E+00	0.00E+00	4.66E-02	0.00E+00
F2	Cement Silo Loadout	650231.19	4013023.90	203.91	32.50	5.81	15.12	1.04E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Carolina Sunrock Burlington North Volume Source Parameter Calculation

		Source Dimensions						Initial Dispersion Coefficients		
Model ID	Source Description	Length (ft)	Width (ft)	Square Root of Area (ft)	Structure Height/Vertical Dimension (ft)	Source Adjacent to Building?	Release Height (ft)	Initial Horizontal Dimension s_y (ft)	Initial Vertical Dimension s_z (ft)	Reference
F1	Asphalt Silo Loadout	25.0	25.0	25.0	80.0	Yes	40.0	5.81	18.60	Notes 1, 2, & 3
F2	Cement Silo Loadout	25.0	25.0	25.0	65.0	Yes	32.5	5.81	15.12	Notes 1, 2, & 3

Note 1: Release height of elevated source if not on or adjacent to building. One half structure height for source located on or adjacent to building
Note 2: Sigma Y value calculated as the square root of the area of release (length of side) divided by 4.3 (Table 3-1 of AERMOD Manual for single volume source).
Note 3. Sigma Z value for elevated source on or adjacent (within 5L) to a building calculated based on the building/structure height divided by 2.15.
Note 4: Sigma Z value for elevated source not on or adjacent to a building calculated as the vertical dimension of source divided by 4.3.

Characteristics calculated based on Table 3-1 of AERMOD Manual.

North Carolina Modeling Protocol Checklist

The North Carolina Modeling Protocol Checklist may be used in lieu of developing the traditional written modeling plan for North Carolina toxics and criteria pollutant modeling. The protocol checklist is designed to provide the same level of information as requested in a modeling protocol as discussed in Chapter 2 of the ***Guideline for Evaluating the Air Quality Impacts of Toxic Pollutants in North Carolina.*** The modeling protocol checklist is submitted with the modeling analysis.

Although most of the information requested in the modeling protocol checklist is self explanatory, additional comments are provided, where applicable, and are discussed in greater detail in the toxics modeling guidelines referenced above. References to sections, tables, figures, appendices, etc., in the protocol checklist are found in the toxics modeling guidelines.

INSTRUCTIONS: The modeling report supporting the compliance demonstration should include most of the information listed below. As appropriate, answer the following questions or indicate by check mark the information provided or action taken is reflected in your report.

FACILITY INFORMATION

Name: Carolina Sunrock Corp **Facility ID:** 9100111 **Address:** 200 Horizon Drive Raleigh, NC 27615	**Consultant (if applicable):** RTP Environmental
Contact Name: Scott Martino	**Contact Name:** David Keen
Phone Number: (919) 747-6336 **Email:** smartino@thesunrockgroup.com	**Phone Number:** (919) 845-1422 x41 **Email:** keen@rtpenv.com

GENERAL

Description of New Source or Source / Process Modification: provide a short description of the new or modified source(s) and a brief discussion of how this change affects facility production or process operation.	Sec 2
Source / Pollutant Identification: provide a table of the affected pollutants, by source, which identifies the source type (point, area, or volume), maximum pollutant emission rates over the applicable averaging period(s), and, for point sources, indicate if the stack is capped or non-vertical (C/N).	Tables 1&2
Pollutant Emission Rate Calculations: indicate how the pollutant emission rates were derived (e.g., AP-42, mass balance, etc.) and where applicable, provide the calculations.	Scaled to AAL
Site / Facility Diagram: provide a diagram or drawing showing the location of all existing and proposed emission sources, buildings or structures, public right-of-ways, and the facility property (toxics) / fence line (criteria pollutants) boundaries. The diagram should also include a scale, true north indicator, and the UTM or latitude/longitude of at least one point.	Figs 3&4
Certified Plat or Signed Survey: a certified plat (map) from the County Register of Deeds or a signed survey must be submitted to validate property boundaries modeled.	Atch A
Topographic Map: A topographic map covering approximately 5km around the facility must be submitted. The facility boundaries should be annotated on the map as accurately as possible.	Fig. 1
Cavity Impact Analysis: If using SCREEN3, a cavity impact analysis must be conducted for all structures with a region of influence extending to one or more sources modeled to determine if cavity regions extend off property (toxics) or beyond the fence line (criteria pollutants). No separate cavity analysis is required if using AERMOD. *See Section 4.2*	NA - AERMOD used

GENERAL (continued)	
Background Concentrations (criteria pollutant analyses only): Background concentrations must be determined for each pollutant for each averaging period evaluated. The averaged background value used (e.g., high, high-second-high, high-third-high, etc.) is based on the pollutant and averaging period evaluated. The background concentrations are added to the modeled concentrations, which are then compared to the applicable air quality standard to determine compliance.	NA
Offsite Source Inventories (criteria pollutant analyses only): Offsite source inventories must be developed and modeled for all pollutants for which onsite sources emissions are modeled in excess of the specific pollutant significant impact levels (SILs) as defined in the PSD New Source Review Workshop Manual. The DAQ AQAB must approve the inventories. An initial working inventory can be requested from the AQAB.	NA

SCREEN LEVEL MODELING NA - Refined Modeling	
Model: The latest version of the SCREEN3 model must be used until AERSCREEN is developed and approved. The use of other screening models should be approved by NCDAQ prior to submitting the modeling report.	
Source / Source emission parameters: Provide a table listing the sources modeled and the applicable source emission parameters. *See NC Form 3 – Appendix A.*	
Merged Sources: Identify merged sources and show all appropriate calculations. *See Section 3.3*	
GEP Analysis: SCREEN3 – for each source modeled, show all calculations identifying the critical structure used in the model run. *See section 3.2 and NC Form 1 - Appendix A.*	
Cavity Impact Analysis: A cavity impact analysis using SCREEN3 must be conducted for all structures with a region of influence extending to one or more sources modeled to determine if cavity regions extend off property (toxics) or beyond the fence line (criteria pollutants). *See Section 4.2*	
Terrain: Indicate the terrain modeled: simple *(Section 4.4)*, and complex *(Section 4.5 and NC Form 4 – Appendix A).* If complex terrain is within 5 kilometers of the facility, complex terrain must be evaluated. Simple terrain must include terrain elevations if any terrain is greater than the stack base of any source modeled. Simple: _____ Complex: _____	
Meteorology: In SCREEN3, select full meteorology.	
Receptors: SCREEN3 – use shortest distance to property boundary for each source modeled and use sufficient range to find maximum (*See Section 4.1 (i) and (j)*). Terrain above stack base must be evaluated.	
Modeling Results: For each affected pollutant, modeling results should be summarized, converted to the applicable averaging period *(See Table 3)*, and presented in tabular format indicating compliance status with the applicable AAL, SIL or NAAQS. *See NC Form S5 – Appendix A.*	
Modeling Files: Either electronic or hard copies of SCREEN3 output must be submitted.	

REFINED LEVEL MODELING

Model: The latest version of AERMOD should be used, and may be found at http://www.epa.gov/scram001/dispersion_prefrec.htm. The use of other refined models must be approved by NCDAQ prior to submitting the modeling report.	Section 4
Source / Source emission parameters: Provide a table listing the sources modeled and the applicable source emission parameters. *See NC Form 3 - Appendix A.*	Tables 1 & 2
GEP Analysis: Use BPIP-Prime with AERMOD.	Sect5.1
Cavity Impact Analysis: No separate cavity analysis is required when using AERMOD as long as receptors are placed in cavity susceptible areas. *See Section 4.2 and 5.2.*	NA-AERMOD used
Terrain: Use digital elevation data from the USGS NED database (http://seamless.usgs.gov/index.php). Use of other sources of terrain elevations or the non-regulatory Flat Terrain option will require prior approval from DAQ AQAB.	Section 4.1
Coordinate System: Specify the coordinate system used (e.g., NAD27, NAD83, etc.) to identify the source, building, and receptor locations. Note: Be sure to specify in the AERMAP input file the correct base datum (NADA) to be used for identifying source input data locations. Clearly note in both the protocol checklist and the modeling report which datum was used.	NAD83
Receptors: The receptor grid should be of sufficient size and resolution to identify the maximum pollutant impact. *See Section 5.3.*	Section 4.1
Meteorology: Indicate the AQAB, pre-processed, 5-year data set used in the modeling demonstration: *(See Section 5.5 and Appendix B)* AERMOD See Section 4.2 If processing your own raw meteorology, then pre-approval from AQAB is required. Additional documentation files (e.g. AERMET stage processing files) will also be necessary. For NC toxics, the modeling demonstration requires only the last year of the standard 5 year data set (e.g., 2005) provided the maximum impacts are less than 50% of the applicable AAL(s).	
Modeling Results: For each affected pollutant and averaging period, modeling results should be summarized and presented in tabular format indicating compliance status with the applicable AAL, SIL or NAAQS. *See NC Form R5 - Appendix A.*	Sect 7
Modeling Files: Submit input and output files for AERMOD. Also include BPIP-Prime files, AERMAP files, DEM files, and any AERMET input and output files, including raw meteorological data.	on disc

Details hide

Identify Adjoining Parcels

Select Features by Buffer

Parcels

Zoom To | Hide | Highlight | Clear

Map and Parcel: 0090 027
Tax Number: 0090.00.00.0027.0000
Owner: JAMES BRADFORD
425 E PILOT ST
DURHAM NC 27707
Parcel Address: 12971 NC 62 HWY
Parcel City: BURLINGTON
District Code: 100
Deed Book: 579 Pg: 1231
Taxed Acreage: 85.72
2nd Deed Book: 538 Pg: 927
3rd Deed Book: 17 Pg: 274
Property Card

Mailable Link (right-click to copy)
View in GoogleEarth/Download KML
View in GoogleMaps

Attributes at point: N: 910639, E: 1903757
Fire Districts
Name: Anderson
Townships
Name: ANDERSON
Board of Commissioners Districts
Option_B: 5
Board of Education Districts
Voting_dis: 5
Voting Precincts
ENR_DESC: ANDE_ANDERSON
Elementary School Districts
Descr: SOUTH ELEMENTARY

12571
37
12671
12971
13001
452
446
531
493
198
192
188
118
150
148
146
166
100m
400ft

Results
N: 912004, E: 1904530
Lat: 36°15' 19.2", Lng: -79°19' 25.6"

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ATTACHMENT B

Model Summary Output

9-10-19 Carolina Sunrock Burlington North TAP Analysis - First Pass Results (Initial Emissions)

Model	File	Pollutant	Average	Group	Rank	Conc/Dep	East (X)	North (Y)	Elev	Hill	Flag	Time	Met File	Sources	Groups	Receptors
AERMOD 18081	Sunrock Burlington North_2018_AS.SUM	AS	ANNUAL	ALL	1ST	0.00017	650055.4	4012903	199.17	199.17	0	1 YEARS	DAN2018_WET.SFC	5	1	7335
AERMOD 18081	Sunrock Burlington North_2017_AS.SUM	AS	ANNUAL	ALL	1ST	0.00016	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2017_AVG.SFC	5	1	7335
AERMOD 18081	Sunrock Burlington North_2015_AS.SUM	AS	ANNUAL	ALL	1ST	0.00015	650055.4	4012903	199.17	199.17	0	1 YEARS	DAN2015_WET.SFC	5	1	7335
AERMOD 18081	Sunrock Burlington North_2016_AS.SUM	AS	ANNUAL	ALL	1ST	0.00015	650055.4	4012903	199.17	199.17	0	1 YEARS	DAN2016_AVG.SFC	5	1	7335
AERMOD 18081	Sunrock Burlington North_2014_AS.SUM	AS	ANNUAL	ALL	1ST	0.00014	650055.4	4012903	199.17	199.17	0	1 YEARS	DAN2014_AVG.SFC	5	1	7335
AERMOD 18081	Sunrock Burlington North_2017_BZ.SUM	BZ	ANNUAL	ALL	1ST	0.01269	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2017_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2014_BZ.SUM	BZ	ANNUAL	ALL	1ST	0.01111	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2014_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2016_BZ.SUM	BZ	ANNUAL	ALL	1ST	0.01099	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2016_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2018_BZ.SUM	BZ	ANNUAL	ALL	1ST	0.01099	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2018_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2015_BZ.SUM	BZ	ANNUAL	ALL	1ST	0.01023	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2015_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2017_CD.SUM	CD	ANNUAL	ALL	1ST	0.00008	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2017_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2014_CD.SUM	CD	ANNUAL	ALL	1ST	0.00007	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2014_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2016_CD.SUM	CD	ANNUAL	ALL	1ST	0.00007	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2016_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2018_CD.SUM	CD	ANNUAL	ALL	1ST	0.00007	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2018_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2015_CD.SUM	CD	ANNUAL	ALL	1ST	0.00006	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2015_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2014_FORM.SUM	FORM	1-HR	ALL	1ST	2.80099	650677.6	4013317	208.75	208.75	0	14052803	DAN2014_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2015_FORM.SUM	FORM	1-HR	ALL	1ST	2.73004	650677.6	4013317	208.75	208.75	0	15011901	DAN2015_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2018_FORM.SUM	FORM	1-HR	ALL	1ST	2.64264	650420.9	4012871	206.22	206.22	0	18033019	DAN2018_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2016_FORM.SUM	FORM	1-HR	ALL	1ST	2.63599	650388.9	4012841	204.24	204.24	0	16051420	DAN2016_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2017_FORM.SUM	FORM	1-HR	ALL	1ST	2.63138	650677.6	4013317	208.75	208.75	0	17012905	DAN2017_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2015_HG.SUM	HG	24-HR	ALL	1ST	0.00153	650055.4	4012903	199.17	199.17	0	15100424	DAN2015_WET.SFC	3	1	7335
AERMOD 18081	Sunrock Burlington North_2018_HG.SUM	HG	24-HR	ALL	1ST	0.00151	650086.2	4012872	201.06	201.06	0	18091424	DAN2018_WET.SFC	3	1	7335
AERMOD 18081	Sunrock Burlington North_2017_HG.SUM	HG	24-HR	ALL	1ST	0.00107	650055.4	4012903	199.17	199.17	0	17042424	DAN2017_AVG.SFC	3	1	7335
AERMOD 18081	Sunrock Burlington North_2016_HG.SUM	HG	24-HR	ALL	1ST	0.00086	650388.9	4012841	204.24	204.24	0	16012324	DAN2016_AVG.SFC	3	1	7335
AERMOD 18081	Sunrock Burlington North_2014_HG.SUM	HG	24-HR	ALL	1ST	0.00075	650388.9	4012841	204.24	204.24	0	14110224	DAN2014_AVG.SFC	3	1	7335
AERMOD 18081	Sunrock Burlington North_2018_NI.SUM	NI	24-HR	ALL	1ST	0.03663	650086.2	4012872	201.06	201.06	0	18091424	DAN2018_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2015_NI.SUM	NI	24-HR	ALL	1ST	0.03646	650055.4	4012903	199.17	199.17	0	15100424	DAN2015_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2017_NI.SUM	NI	24-HR	ALL	1ST	0.02468	650055.4	4012903	199.17	199.17	0	17042424	DAN2017_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2016_NI.SUM	NI	24-HR	ALL	1ST	0.02117	650388.9	4012841	204.24	204.24	0	16012324	DAN2016_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2014_NI.SUM	NI	24-HR	ALL	1ST	0.01821	650388.9	4012841	204.24	204.24	0	14110224	DAN2014_AVG.SFC	4	1	7335

9-10-19 Carolina Sunrock Burlington North TAP Analysis - First Pass Results (Initial Emissions)

Pollutant	Average	Group	Rank	Conc/Dep	AAL	%AAL
AS	ANNUAL	ALL	1ST	0.00017	0.0021	8.1%
BZ	ANNUAL	ALL	1ST	0.01269	0.12	0.1%
CD	ANNUAL	ALL	1ST	0.00008	0.0055	1.5%
FORM	1-HR	ALL	1ST	2.80099	150	1.9%
HG	24-HR	ALL	1ST	0.00153	0.06	2.6%
NI	24-HR	ALL	1ST	0.03663	0.6	6.1%

9-10-19 Carolina Sunrock Burlington North TAP Analysis - Second Pass Results (Emissions Scaled to AAL)

Model	File	Pollutant	Average	Group	Rank	Conc/Dep	East (X)	North (Y)	Elev	Hill	Flag	Time	Met File	Sources	Groups	Receptors
AERMOD 18081	Sunrock Burlington North_2018_AS.SUM	AS	ANNUAL	ALL	1ST	0.00199	650055.4	4012903	199.17	199.17	0	1 YEARS	DAN2018_WET.SFC	5	1	7335
AERMOD 18081	Sunrock Burlington North_2017_AS.SUM	AS	ANNUAL	ALL	1ST	0.00188	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2017_AVG.SFC	5	1	7335
AERMOD 18081	Sunrock Burlington North_2015_AS.SUM	AS	ANNUAL	ALL	1ST	0.0018	650055.4	4012903	199.17	199.17	0	1 YEARS	DAN2015_WET.SFC	5	1	7335
AERMOD 18081	Sunrock Burlington North_2016_AS.SUM	AS	ANNUAL	ALL	1ST	0.00171	650055.4	4012903	199.17	199.17	0	1 YEARS	DAN2016_AVG.SFC	5	1	7335
AERMOD 18081	Sunrock Burlington North_2014_AS.SUM	AS	ANNUAL	ALL	1ST	0.0017	650055.4	4012903	199.17	199.17	0	1 YEARS	DAN2014_AVG.SFC	5	1	7335
AERMOD 18081	Sunrock Burlington North_2017_BZ.SUM	BZ	ANNUAL	ALL	1ST	0.11403	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2017_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2014_BZ.SUM	BZ	ANNUAL	ALL	1ST	0.09984	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2014_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2016_BZ.SUM	BZ	ANNUAL	ALL	1ST	0.09875	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2016_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2018_BZ.SUM	BZ	ANNUAL	ALL	1ST	0.09873	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2018_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2015_BZ.SUM	BZ	ANNUAL	ALL	1ST	0.09193	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2015_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2017_CD.SUM	CD	ANNUAL	ALL	1ST	0.00523	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2017_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2018_CD.SUM	CD	ANNUAL	ALL	1ST	0.00476	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2018_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2014_CD.SUM	CD	ANNUAL	ALL	1ST	0.00472	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2014_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2016_CD.SUM	CD	ANNUAL	ALL	1ST	0.00449	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2016_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2015_CD.SUM	CD	ANNUAL	ALL	1ST	0.00437	650362.6	4013375	191.87	191.87	0	1 YEARS	DAN2015_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2014_FORM.SUM	FORM	1-HR	ALL	1ST	142.5149	650677.6	4013317	208.75	208.75	0	14052803	DAN2014_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2015_FORM.SUM	FORM	1-HR	ALL	1ST	138.9051	650677.6	4013317	208.75	208.75	0	15011901	DAN2015_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2018_FORM.SUM	FORM	1-HR	ALL	1ST	134.4562	650420.9	4012871	206.22	206.22	0	18033019	DAN2018_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2016_FORM.SUM	FORM	1-HR	ALL	1ST	134.1177	650388.9	4012841	204.24	204.24	0	16051420	DAN2016_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2017_FORM.SUM	FORM	1-HR	ALL	1ST	133.8854	650677.6	4013317	208.75	208.75	0	17012905	DAN2017_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2015_HG.SUM	HG	24-HR	ALL	1ST	0.05712	650055.4	4012903	199.17	199.17	0	15100424	DAN2015_WET.SFC	3	1	7335
AERMOD 18081	Sunrock Burlington North_2018_HG.SUM	HG	24-HR	ALL	1ST	0.05637	650086.2	4012872	201.06	201.06	0	18091424	DAN2018_WET.SFC	3	1	7335
AERMOD 18081	Sunrock Burlington North_2017_HG.SUM	HG	24-HR	ALL	1ST	0.03984	650055.4	4012903	199.17	199.17	0	17042424	DAN2017_AVG.SFC	3	1	7335
AERMOD 18081	Sunrock Burlington North_2016_HG.SUM	HG	24-HR	ALL	1ST	0.03217	650388.9	4012841	204.24	204.24	0	16012324	DAN2016_AVG.SFC	3	1	7335
AERMOD 18081	Sunrock Burlington North_2014_HG.SUM	HG	24-HR	ALL	1ST	0.02781	650388.9	4012841	204.24	204.24	0	14110224	DAN2014_AVG.SFC	3	1	7335
AERMOD 18081	Sunrock Burlington North_2018_NI.SUM	NI	24-HR	ALL	1ST	0.57037	650086.2	4012872	201.06	201.06	0	18091424	DAN2018_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2015_NI.SUM	NI	24-HR	ALL	1ST	0.5676	650055.4	4012903	199.17	199.17	0	15100424	DAN2015_WET.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2017_NI.SUM	NI	24-HR	ALL	1ST	0.38426	650055.4	4012903	199.17	199.17	0	17042424	DAN2017_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2016_NI.SUM	NI	24-HR	ALL	1ST	0.32959	650388.9	4012841	204.24	204.24	0	16012324	DAN2016_AVG.SFC	4	1	7335
AERMOD 18081	Sunrock Burlington North_2014_NI.SUM	NI	24-HR	ALL	1ST	0.28359	650388.9	4012841	204.24	204.24	0	14110224	DAN2014_AVG.SFC	4	1	7335

9-10-19 Carolina Sunrock Burlington North TAP Analysis - Second Pass Results (Emissions Scaled to AAL)

Pollutant	Average	Group	Rank	Conc/Dep	AAL	%AAL
AS	ANNUAL	ALL	1ST	0.00199	0.0021	94.8%
BZ	ANNUAL	ALL	1ST	0.11403	0.12	95.0%
CD	ANNUAL	ALL	1ST	0.00523	0.0055	95.1%
FORM	1-HR	ALL	1ST	142.5149	150	95.0%
HG	24-HR	ALL	1ST	0.05712	0.06	95.2%
NI	24-HR	ALL	1ST	0.57037	0.6	95.1%

APPENDIX D

ZONING CONSISTENCY DETERMINATION

RTP ENVIRONMENTAL ASSOCIATES, INC.®

September 4, 2019

Mr. Matthew Hoagland
Planning Director
Caswell County Planning Department
144 Main Street
Yanceyville, NC 27379

RECEIVED
SEP 05 2019
CASWELL COUNTY
PLANNING DEPARTMENT

Subject: Zoning Consistency Determination for the Planned Construction of a Hot Mix Asphalt and Truck Mix Concrete Plant in Caswell County

Dear Mr. Hoagland,

RTP Environmental has been retained by Carolina Sunrock LLC to prepare an air permit application for the planned construction of a hot mix asphalt and truck mix concrete plant in Caswell County. The facility will be located at 12971 NC Highway 62 in Burlington (Map and Parcel: 0090 027). An air permit application is required as a result of planned modifications.

We request a Determination of Compliance with the Caswell County zoning ordinance regarding the location's zoning status. This determination is required per 15A North Carolina Administrative Code 2Q.0304(b)(1). Several new buildings and silos will be constructed as part of the modification. Attached is a copy of the draft air permit application for your review.

Upon receipt of this letter, please fax a copy of this letter back to me at (919) 845-1424 acknowledging its receipt by your office.

If you have any questions, please call me at (919) 845-1422 x41.

Sincerely,

David Keen

David Keen
RTP Environmental

☐ APPROVED

cc: Brigette Tinsley, NEG

304-A West Millbrook Road,
Raleigh, North Carolina 27609
Tel: (919) 845-1422 x41 Fax: (919) 845-1424

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Monday, September 30, 2019 3:25 PM
To: Governale, Leo; Gary Saini (saini@rtpenv.com)
Cc: Murphy, Davis
Subject: [External] RE: Carolina Sunrock LLC - Caswell County -1700016

[redacted]

Hi Leo,

No Problem Sir, Ill round up the data, and get it over to you as soon as I can.

Thanks

Scott

From: Governale, Leo [mailto:Leo.Governale@ncdenr.gov]
Sent: Monday, September 30, 2019 3:03 PM
To: Gary Saini (saini@rtpenv.com) <saini@rtpenv.com>; Scott Martino <smartino@thesunrockgroup.com>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>
Subject: Carolina Sunrock LLC - Caswell County -1700016

Gary/Scott:

During an initial review of the application for an Air Permit for the referenced proposed facility, it was determined that the following information is required to continue processing the application:

1. Please provide the particle size distribution values for Bagfilter HMA-CD1 on Form C1. The form submitted indicates these values as "TBD."
2. Please provide a completed Form C1 for Bagfilter RMC-CD2. The form submitted is missing a substantial amount of required information.

Until the above information is received, your application will be considered incomplete and inactive. Your response to this request will become part of your initial permit application
received September 17, 2019. Please provide the requested information by October 13, 2019, otherwise the application may be returned.

Should you have any questions, please contact me at your convenience. Thanks for your attention to this matter.

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
336.776.9638 (Direct)
336.776.9797 (Fax)

450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105
leo.governale@ncdenr.gov

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Wednesday, October 2, 2019 12:06 PM
To: Governale, Leo; Gary Saini (saini@rtpenv.com)
Cc: Murphy, Davis
Subject: [External] RE: Carolina Sunrock LLC - Caswell County -1700016
Attachments: C1 Sent.xlsx

[redacted]

Hi Leo,

Hope all is well, attached is the updated C-1s you requested, I just put each in a separate tab for you.

Let me know if you need anything else and I'll get it to you.

Thanks

Scott

From: Governale, Leo [mailto:Leo.Governale@ncdenr.gov]
Sent: Monday, September 30, 2019 3:03 PM
To: Gary Saini (saini@rtpenv.com) <saini@rtpenv.com>; Scott Martino <smartino@thesunrockgroup.com>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>
Subject: Carolina Sunrock LLC - Caswell County -1700016

Gary/Scott:

During an initial review of the application for an Air Permit for the referenced proposed facility, it was determined that the following information is required to continue processing the application:

1. Please provide the particle size distribution values for Bagfilter HMA-CD1 on Form C1. The form submitted indicates these values as "TBD."
2. Please provide a completed Form C1 for Bagfilter RMC-CD2. The form submitted is missing a substantial amount of required information.

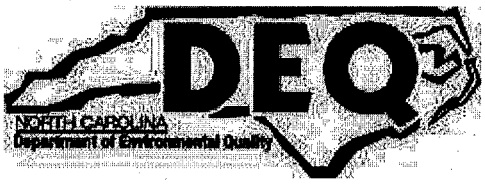
Until the above information is received, your application will be considered incomplete and inactive. Your response to this request will become part of your initial permit application
received September 17, 2019. Please provide the requested information by October 13, 2019, otherwise the application may be returned.

Should you have any questions, please contact me at your convenience. Thanks for your attention to this matter.

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
336.776.9638 (Direct)
450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105

336.776.9797 (Fax) leo.governale@ncdenr.gov



FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | C1

CONTROL DEVICE ID NO: **HMA-CD1**	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): **See Form A2&A3**
EMISSION POINT (STACK) ID NO(S): **EP-1**	POSITION IN SERIES OF CONTROLS NO. **1** OF **1** UNITS
	P.E. SEAL REQUIRED (PER 2q .0112)? ☐ YES ☑ NO

DESCRIBE CONTROL SYSTEM: **Hot Mix Asphalt Plant Bag House Model RBH 51-12 Ser No 03-201-3001,**

- **o 51,111 ACFM**
- **o (768) 4-5/8" Ø x 10' long 14oz aramid bags**
- **o 9,299 ft2 cloth area; 5.5 fpm filtering velocity (Air/Cloth Ratio)**
- **o 41-5/8" ID stack; 31'-0" discharge height above grade**
- **o Integral 9' Ø x 10' long horizontal cyclone primary collector**

POLLUTANTS COLLECTED:	**PM**	**PM10**		
BEFORE CONTROL EMISSION RATE (LB/HR):	**See Appendix A**			
CAPTURE EFFICIENCY:	**99.99** %	**99.99** %	%	%
CONTROL DEVICE EFFICIENCY:	**90** %	**90** %	%	%
CORRESPONDING OVERALL EFFICIENCY:	**93** %	**90** %	%	%
EFFICIENCY DETERMINATION CODE:	**1**	**1**		
TOTAL AFTER CONTROL EMISSION RATE (LB/HR):	**See Appendix A**			

PRESSURE DROP (IN H_2O): MIN: MAX: GAUGE? ☑ YES ☐ NO	
BULK PARTICLE DENSITY (LB/FT^3):	INLET TEMPERATURE (^oF): MIN MAX
POLLUTANT LOADING RATE: ☐ LB/HR ☐ GR/FT^3	OUTLET TEMPERATURE (^oF) MIN MAX
INLET AIR FLOW RATE (ACFM): **51,111**	FILTER OPERATING TEMP (^oF):

NO. OF COMPARTMENTS: **3**	NO. OF BAGS PER COMPARTMENT: **256**	LENGTH OF BAG (IN.): **120.5**
NO. OF CARTRIDGES: **768**	FILTER SURFACE AREA PER CARTRIDGE (FT^2): **12.11**	DIAMETER OF BAG (IN.): **4 5/8**
TOTAL FILTER SURFACE AREA (FT^2): **9,299**	AIR TO CLOTH RATIO: **5.5:1**	

DRAFT TYPE: ☑ INDUCED/NEGATIVE ☐ FORCED/POSITIVE FILTER MATERIAL: ☐ WOVEN ☑ FELTED

DESCRIBE CLEANING PROCEDURES:

- ☐ AIR PULSE
- ☑ REVERSE FLOW
- ☐ MECHANICAL/SHAKER
- ☐ OTHER:
- ☐ SONIC
- ☐ SIMPLE BAG COLLAPSE
- ☐ RING BAG COLLAPSE

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1	**40**	**40.2**
1-10	**60**	**100**
10-25		
25-50		
50-100		
>100		
	TOTAL = 100	

DESCRIBE INCOMING AIR STREAM: **Hot Air from Drying and Mixing Drums in HMA Plant**

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

COMMENTS:

Attach Additional Sheets As Necessary

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | C1

CONTROL DEVICE ID NO: **RMS-CD2**	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): **See Form A2&A3**
EMISSION POINT (STACK) ID NO(S): **EP-2**	POSITION IN SERIES OF CONTROLS NO. **1** OF **1** UNITS
	P.E. SEAL REQUIRED (PER 2q .0112)? ☐ YES ☑ NO

DESCRIBE CONTROL SYSTEM: **C&W Manufacturing - RA-140 - 6500 CFM to control emissions from cement/fly ash silos and aggregate and truck loading.**

	PM	PM10		
POLLUTANTS COLLECTED:				
BEFORE CONTROL EMISSION RATE (LB/HR):				
CAPTURE EFFICIENCY:	%	%	%	%
CONTROL DEVICE EFFICIENCY:	%	%	%	%
CORRESPONDING OVERALL EFFICIENCY:	%	%	%	%
EFFICIENCY DETERMINATION CODE:				
TOTAL AFTER CONTROL EMISSION RATE (LB/HR):				

PRESSURE DROP (IN H_20): MIN: MAX: GAUGE? ☑ YES ☐ NO	
BULK PARTICLE DENSITY (LB/FT^3):	INLET TEMPERATURE (^{0}f): MIN MAX
POLLUTANT LOADING RATE: ☐ LB/HR ☐ GR/FT^3	OUTLET TEMPERATURE (^{0}f) MIN MAX
INLET AIR FLOW RATE (ACFM): **6,500 cfm**	FILTER OPERATING TEMP (^{0}f): **Ambient**

NO. OF COMPARTMENTS: **2**	NO. OF BAGS PER COMPARTMENT: **36**	LENGTH OF BAG (IN.): **114**
NO. OF CARTRIDGES: **72**	FILTER SURFACE AREA PER CARTRIDGE (FT^2): **9.83**	DIAMETER OF BAG (IN.): **4**
TOTAL FILTER SURFACE AREA (FT^2): **1,433**	AIR TO CLOTH RATIO: **4.54:1**	

DRAFT TYPE: ☑ INDUCED/NEGATIVE ☐ FORCED/POSITIVE FILTER MATERIAL: ☐ WOVEN ☑ FELTED

DESCRIBE CLEANING PROCEDURES:

☐ AIR PULSE ☐ SONIC
☑ REVERSE FLOW ☐ SIMPLE BAG COLLAPSE
☐ MECHANICAL/SHAKER ☐ RING BAG COLLAPSE
☐ OTHER:

DESCRIBE INCOMING AIR STREAM: **Weighing and Truck Loading of aggregate, fly ash, and Cement**

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1	**40**	**40.2**
1-10	**60**	**100**
10-25		
25-50		
50-100		
>100		
	TOTAL = 100	

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

COMMENTS:

Attach Additional Sheets As Necessary

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Friday, October 4, 2019 1:15 PM
To: Governale, Leo
Cc: Murphy, Davis
Subject: [External] RE: Carolina Sunrock LLC - Caswell County -1700016
Attachments: Prospect Hill Air Permit 10529R00 eff. 09-21-2017 thru. 08-31-25.pdf

[redacted]

Hi Leo,

I left you a message give me a call whenever I'll be mostly free today and all next week. I attached our current permit for what was to be our Prospect Hill facility, but that is no longer going to be the case, as we have shifted to the current property which is the application you are currently reviewing.

All the files for the prospect hill facility are identical to what we are currently permitting to the attached facility other than the location of course.

Feel free to give me a call. I also wanted to talk to you about another project I am working on in Caswell County, which I am about done with, which you all will see here in about 3 weeks as our consultant is not quite done with the modeling just yet.

Thanks for the help and I hope you have a good weekend

Scott

From: Governale, Leo [mailto:Leo.Governale@ncdenr.gov]
Sent: Monday, September 30, 2019 3:03 PM
To: Gary Saini (saini@rtpenv.com) <saini@rtpenv.com>; Scott Martino <smartino@thesunrockgroup.com>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>
Subject: Carolina Sunrock LLC - Caswell County -1700016

Gary/Scott:

During an initial review of the application for an Air Permit for the referenced proposed facility, it was determined that the following information is required to continue processing the application:

1. Please provide the particle size distribution values for Bagfilter HMA-CD1 on Form C1. The form submitted indicates these values as "TBD."
2. Please provide a completed Form C1 for Bagfilter RMC-CD2. The form submitted is missing a substantial amount of required information.

Until the above information is received, your application will be considered incomplete and inactive. Your response to this request will become part of your initial permit application
received September 17, 2019. Please provide the requested information by October 13, 2019, otherwise the application may be returned.

Should you have any questions, please contact me at your convenience. Thanks for your attention to this matter.

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
336.776.9638 (Direct)
336.776.9797 (Fax)

450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105
leo.governale@ncdenr.gov

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Thursday, October 10, 2019 10:47 AM
To: Governale, Leo
Subject: [External] RE: Carolina Sunrock LLC - Caswell County -1700016
Attachments: MP0090_027 Zoning Approval.pdf

[redacted]

Here is the signed zoinging form for you.

From: Governale, Leo [mailto:Leo.Governale@ncdenr.gov]
Sent: Monday, September 30, 2019 3:03 PM
To: Gary Saini (saini@rtpenv.com) <saini@rtpenv.com>; Scott Martino <smartino@thesunrockgroup.com>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>
Subject: Carolina Sunrock LLC - Caswell County -1700016

Gary/Scott:

During an initial review of the application for an Air Permit for the referenced proposed facility, it was determined that the following information is required to continue processing the application:

1. Please provide the particle size distribution values for Bagfilter HMA-CD1 on Form C1. The form submitted indicates these values as "TBD."
2. Please provide a completed Form C1 for Bagfilter RMC-CD2. The form submitted is missing a substantial amount of required information.

Until the above information is received, your application will be considered incomplete and inactive. Your response to this request will become part of your initial permit application
received September 17, 2019. Please provide the requested information by October 13, 2019, otherwise the application may be returned.

Should you have any questions, please contact me at your convenience. Thanks for your attention to this matter.

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
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450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105
leo.governale@ncdenr.gov

RTP ENVIRONMENTAL ASSOCIATES, INC.®

September 4, 2019

Mr. Matthew Hoagland
Planning Director
Caswell County Planning Department
144 Main Street
Yanceyville, NC 27379

RECEIVED
SEP 05 2019
CASWELL COUNTY
PLANNING DEPARTMENT

Subject: Zoning Consistency Determination for the Planned Construction of a Hot Mix Asphalt and Truck Mix Concrete Plant in Caswell County

Dear Mr. Hoagland,

RTP Environmental has been retained by Carolina Sunrock LLC to prepare an air permit application for the planned construction of a hot mix asphalt and truck mix concrete plant in Caswell County. The facility will be located at 12971 NC Highway 62 in Burlington (Map and Parcel: 0090 027). An air permit application is required as a result of planned modifications.

We request a Determination of Compliance with the Caswell County zoning ordinance regarding the location's zoning status. This determination is required per 15A North Carolina Administrative Code 2Q.0304(b)(1). Several new buildings and silos will be constructed as part of the modification. Attached is a copy of the draft air permit application for your review.

Upon receipt of this letter, please fax a copy of this letter back to me at (919) 845-1424 acknowledging its receipt by your office.

If you have any questions, please call me at (919) 845-1422 x41.

Sincerely,

David Keen

David Keen
RTP Environmental

APPROVED

cc: Brigette Tinsley, NEG

304-A West Millbrook Road,
Raleigh, North Carolina 27609
Tel: (919) 845-1422 x41 Fax: (919) 845-1424

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Friday, November 8, 2019 9:25 AM
To: Governale, Leo
Subject: [External] Sunrock Burlington North facility

[redacted]

Hi Leo,

Thanks for the call. As we discussed everything in the report summarized in section 2.2 is connected to the bag house. The ending statement is where is states the aggregate weigh batcher is not controlled is incorrect. It is controlled by the bag house like everything else.

Let me know if you need anything else and I'll be happy to round it up for you.

Thanks

Scott

Scott Martino

Environmental Compliance Manager/Mine Engineer
Carolina Sunrock
200 Horizon Drive Suite 100
Raleigh, NC 27615
Office Phone:(919) 7476336 Cell (984) 202-4761

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Monday, November 18, 2019 12:16 PM
To: Gurinder (Gary) Saini; Governale, Leo
Cc: Murphy, Davis; David Keen
Subject: [External] Re: Carolina Sunrock LLC - Caswell County -1700016

[redacted]

thank you all.

Scott

From: Gurinder (Gary) Saini <saini@rtpenv.com>
Sent: Monday, November 18, 2019 11:52 AM
To: Governale, Leo <Leo.Governale@ncdenr.gov>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>; Scott Martino <smartino@thesunrockgroup.com>; David Keen <keen@rtpenv.com>
Subject: RE: Carolina Sunrock LLC - Caswell County -1700016

As follow-up to our call this morning, I confirmed that the modeled TPER emission rates account for the maximum plant capacity rate of 250 tons per hour. We actually scaled up the emission rates shown in Table 3-1 to provide even more flexibility in terms of using higher emission rates than calculated using the maximum capacity rate.

Regards

GS
919-845-1422 Ext. 42
919-533-4558

From: Governale, Leo [mailto:Leo.Governale@ncdenr.gov]
Sent: Monday, September 30, 2019 15:03
To: Gurinder (Gary) Saini <saini@rtpenv.com>; Scott Martino (smartino@thesunrockgroup.com) <smartino@thesunrockgroup.com>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>
Subject: Carolina Sunrock LLC - Caswell County -1700016

Gary/Scott:

During an initial review of the application for an Air Permit for the referenced proposed facility, it was determined that the following information is required to continue processing the application:

1. Please provide the particle size distribution values for Bagfilter HMA-CD1 on Form C1. The form submitted indicates these values as "TBD."
2. Please provide a completed Form C1 for Bagfilter RMC-CD2. The form submitted is missing a substantial amount of required information.

Until the above information is received, your application will be considered incomplete and inactive. Your response to this request will become part of your initial permit application

received September 17, 2019. Please provide the requested information by October 13, 2019, otherwise the application may be returned.

Should you have any questions, please contact me at your convenience. Thanks for your attention to this matter.

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
336.776.9638 (Direct)
336.776.9797 (Fax)

450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105
leo.governale@ncdenr.gov

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Monday, November 25, 2019 10:00 AM
To: Governale, Leo
Subject: [External] Carolina Sunrock - Burlington North Air Permit

[redacted]

Hi Leo,

As we talked the 20,000-gallon gasoline tank should have been a 20,000-gallong Diesel fuel for all our Mobil equipment and over the road haulage fleet.

If you could make that change would be great, we do not have gasoline tanks on any of our facilities other than maybe a small 5 gallon container for odds and end type stuff.

Let me know if you need anything else and Ill be happy to help

Thanks

Scott

Scott Martino

Environmental Compliance Manager/Mine Engineer
Carolina Sunrock
200 Horizon Drive Suite 100
Raleigh, NC 27615
Office Phone:(919) 7476336 Cell (984) 202-4761

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Tuesday, November 26, 2019 10:30 AM
To: Murphy, Davis
Cc: Governale, Leo; Edwards, Lisa; Gregg Bowler
Subject: [External] RE: Carolina Sunrock LLC Burlington North Application # 1700016.19A - Completeness Determination

[redacted]

Hello, Mr. Murphy,

Thanks for the information, we take care of our obligations and get you the necessary information.

Thanks

Scott

From: Murphy, Davis [mailto:davis.murphy@ncdenr.gov]
Sent: Tuesday, November 26, 2019 9:56 AM
To: Scott Martino <smartino@thesunrockgroup.com>
Cc: Governale, Leo <Leo.Governale@ncdenr.gov>; Edwards, Lisa <lisa.edwards@ncdenr.gov>; Gregg Bowler <gbowler@thesunrockgroup.com>
Subject: Carolina Sunrock LLC Burlington North Application # 1700016.19A - Completeness Determination

Scott,

The application for the referenced facility is in an area without zoning, therefore it is required to comply with 15A NCAC 2Q .0113. The application, as submitted, does not fulfill the requirements of 2Q .0113, therefore the application is considered incomplete. A summary of the requirements from this regulation is shown below.

A person covered under this Rule shall publish a legal notice and post a sign as specified below.

(a) The permit applicant shall publish a legal notice in a newspaper of general circulation in the area where the source is or will be located at least two weeks before submitting the permit application for the source. The notice shall identify:

(1) the name of the affected facility;
(2) the name and address of the permit applicant; and
(3) the activity or activities involved in the permit action.

(b) The permit applicant shall submit with the permit application an affidavit and proof of publication (an affidavit is acceptable for proof of publication) that the legal notice was published.

(c) The permit application shall post a sign on the property where the new or expanded source is or will be located. The sign shall meet the following specifications:

(1) It shall be at least six square feet in area;
(2) It shall be set off the road right of way, but no more than 10 feet from the road right of way;
(3) The bottom of the sign shall be at least six feet above the ground;
(4) It shall contain the following information:

(A) the name of the affected facility;
(B) the name and address of the permit applicant; and
(C) the activity or activities involved in the permit action;

(5) Lettering shall be a size that the sign can be ready by a person with 20/20 vision standing in the center in the center of the road; and

(6) The side with the lettering shall face the road, and sign shall be parallel to the road.

The sign shall be posted at least 10 days before the permit application is submitted and shall remain posted for at least 30 days after the application is submitted. The applicant should include in the permit application the date the sign was posted and a statement that all of the above requirements were met.

Until the above requirements are fulfilled, your application will be considered incomplete and inactive. Please keep this office informed of your intentions and progress regarding these requirements. Let me know if you have any questions.

Thanks,
Davis

Davis Murphy, EIT
Environmental Engineer II/Permits Coordinator
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main) 450 West Hanes Mill Road, Suite 300
336.776.9644 (Direct) Winston-Salem, NC 27105
336.776.9797 (Fax) davis.murphy@ncdenr.gov

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Thursday, December 12, 2019 11:17 AM
To: Murphy, Davis; Governale, Leo
Cc: Edwards, Lisa; Alexander Culpepper
Subject: [External] Carolina Sunrock - Prospect Hill Distribution Center and Burlington North 15A NCAC 2Q .0113
Attachments: Prospect HIll Quarry and Distribution Center fullfilment of Rule 15A NCA....pdf; Burlington North Full filling Rule 15A NCAC 02Q.0113 12-12-2019.pdf

[redacted]

Hello all,

Please find the attached documenting the fulfillment of 15A NCAC 2Q .0113. Please let me know if you need anything else or have any additional questions.

I will have two hard copies of each in the mail today.

Thank you for the help

Scott

Scott Martino

Environmental Compliance Manager/Mine Engineer
Carolina Sunrock
200 Horizon Drive Suite 100
Raleigh, NC 27615
Office Phone:(919) 7476336 Cell (984) 202-4761

SUNROCK®
CAROLINA SUNROCK LLC

Scott Martino
Environmental Compliance Manager
200 Horizon Drive, Suite 100
Raleigh, NC 27615

Certified Mail
Return Receipt # 7015 0640 0007 8085 1239

December 12, 2019

Ms. Lisa Edwards, P.E.
Air Quality Regional Supervisor
Winston-Salem Regional Office
450 West Hanes Mill Road, Suite 300
Winston-Salem, North Carolina 27105

Re: Fulfillment of 15A NCAC 02Q.0113 (Notification in Areas without Zoning)
Carolina Sunrock LLC – Prospect Hill Quarry and Distribution Center
Permit Application No. 1700017.19A
Facility Number: 1700017
Prospect Hill, Caswell County, North Carolina

Dear Ms. Edwards:

This letter is intended to notify your office of Carolina Sunrock, LLC completion of the proper public notifications as governed by 15A NCAC 02Q.0113 (Notifications in Areas without Zoning) for the above referenced facility. It should be noted that on December 4, 2019 a public notice was published in The Caswell Messenger, which services the area of the facility. In addition, a sign was posted as set for by the governing regulations on December 2, 2019.

Attached to this document are the Affidavit of Publication and Photo Graph Log depicting sign placement, and applicable scales per the guidance document. It is our understanding that this documentation fulfills all applicable guidelines and the processing of our air permit application shall commence. Please contact me if additional information is required or if this does not meet your requirements.

Sincerely
Carolina Sunrock LLC

Scott Martino,
Manager Environmental Compliance

Enclosures
Affidavit of Publication
Photograph Log

smartino@thesunrockgroup.com
Phone: 919.747.6336
Fax: 919.747.6305

Public Notice Carolina Sunrock LLC 200 Horizon Drive Raleigh NC, 27615 NCDEQ Air Permit Application for the construction and operation of a Quarry, Hot Mix Asphalt, and Ready Mix Concrete facility located at: **Prospect Hill Quarry and Distribution Center 1238 Wrenn Road, Prospect Hill, Caswell County, NC, 27314 12/04/2019**

NORTH CAROLINA
CASWELL COUNTY

AFFIDAVIT OF PUBLICATION

Before the undersigned, a Notary Public of said County and State, duly commissioned, qualified, and authorized by law to administer oaths, personally appeared **Davin Wilson** who being first duly sworn, deposes and says: that he is an authorized employee of The Caswell Messenger, engaged in the publication of a newspaper known as The Caswell Messenger published, issued, and entered as second class mail in the City of Yanceyville in said County and State; that he is authorized to make this affidavit and sworn statement; that the notice or other legal advertisement, a true copy of which is attached hereto, was published in The Caswell Messenger on the following date, ***December 4, 2019*** that the said newspaper in which such notice, paper, document, or legal advertisement was published was, at the time of each and every such publication, a newspaper meeting all of the requirements and qualifications of Section 8-597 of the General Statutes of North Carolina and was qualified newspaper within the meaning of Section 1-597 of the General Statutes of North Carolina.

This 11th day of December, 2019

(Signature of person making affidavit)

Sworn to and subscribed before me, this 11th day of December, 2019

Anita B. Smith

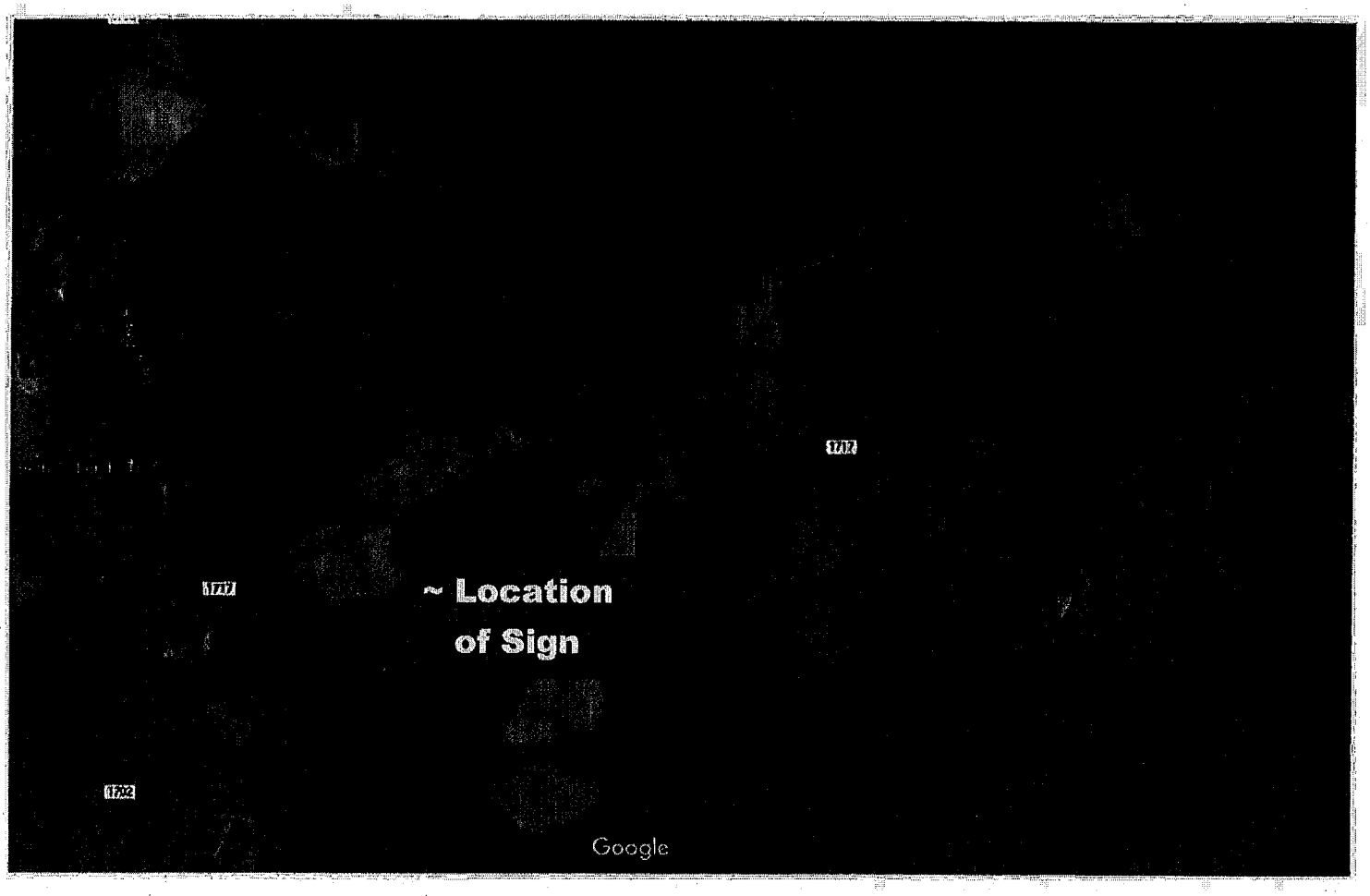
Notary Public

ANITA B. SMITH
Notary Public, North Carolina
Caswell County
My Commission Expires
9/29/22

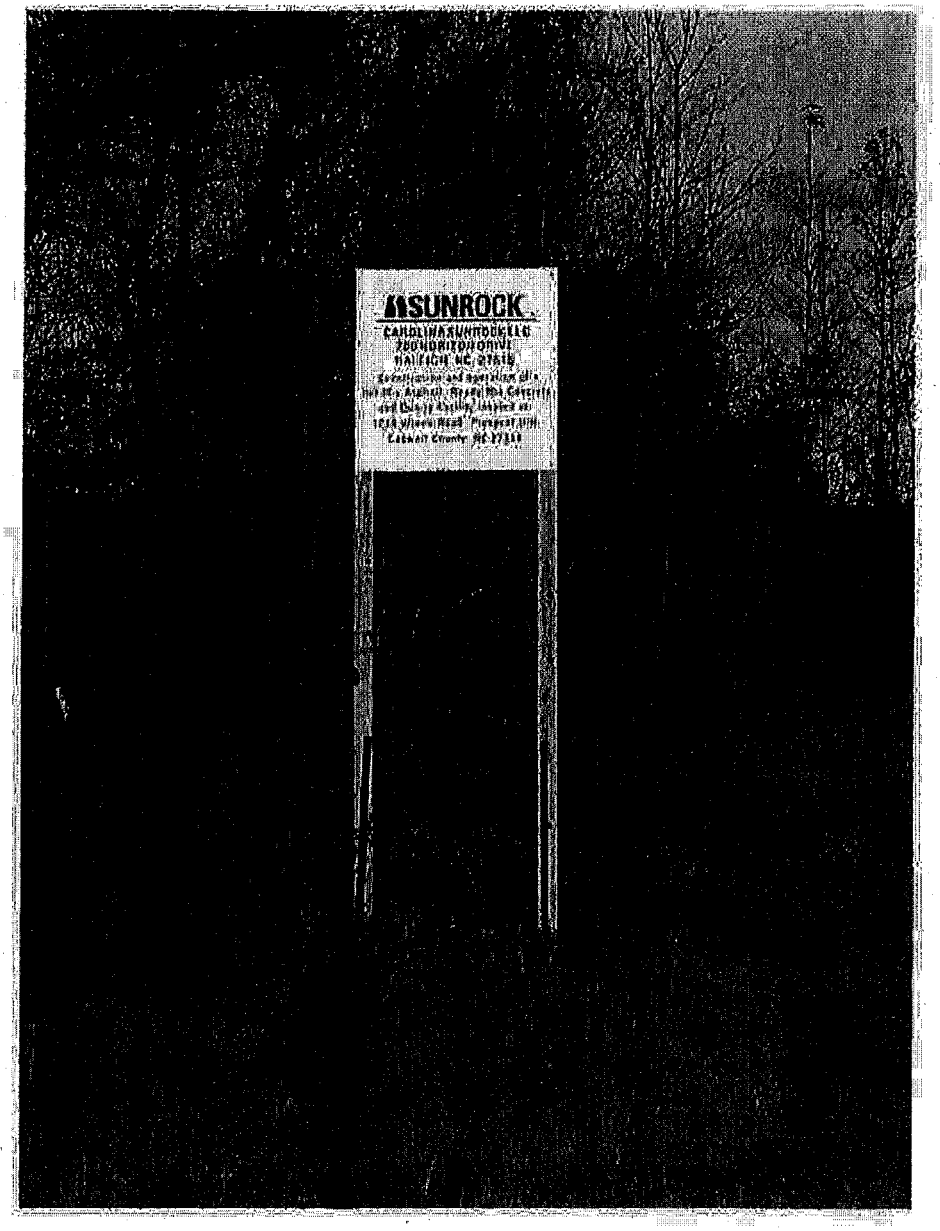
SUNROCK®

CAROLINA SUNROCK LLC

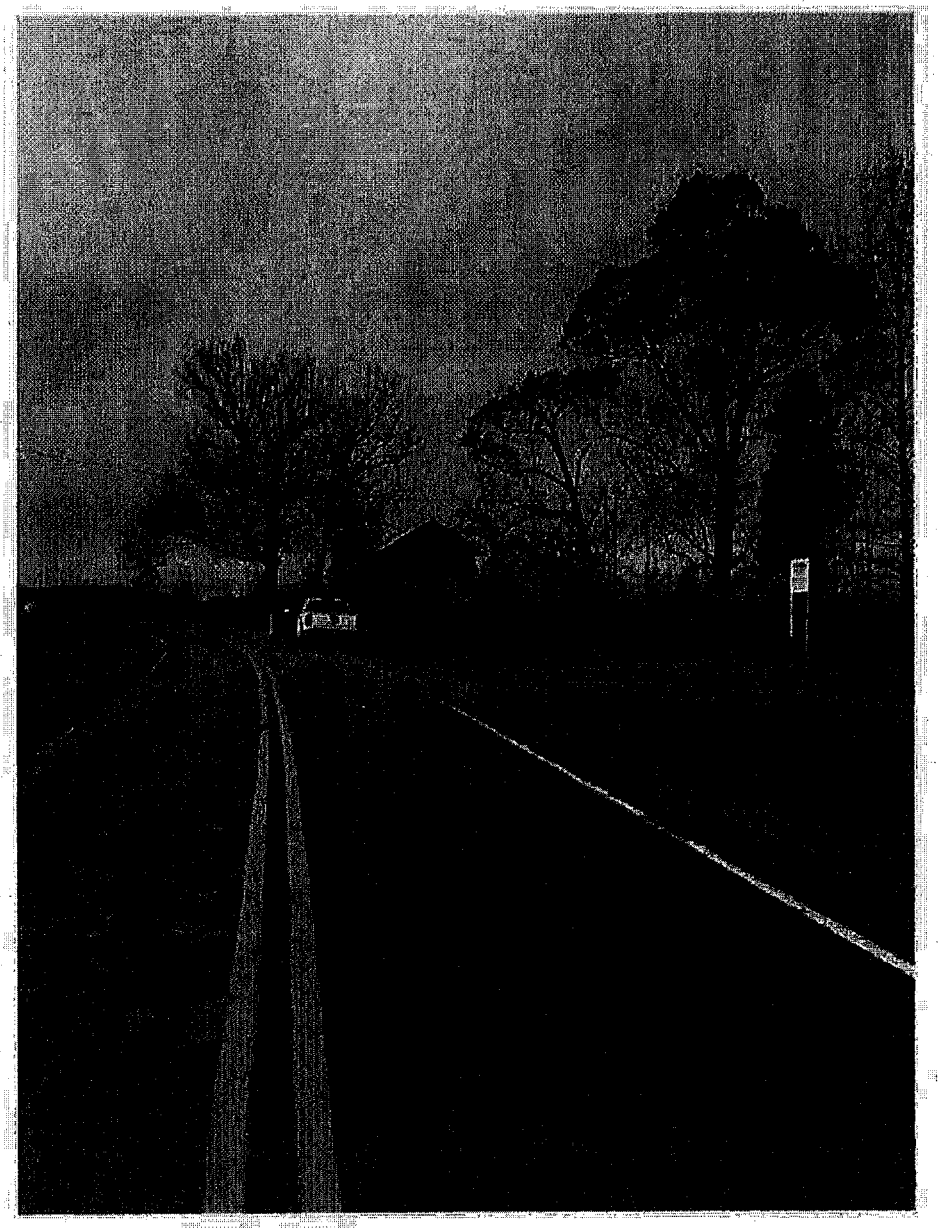
Prospect Quarry and Distribution Center



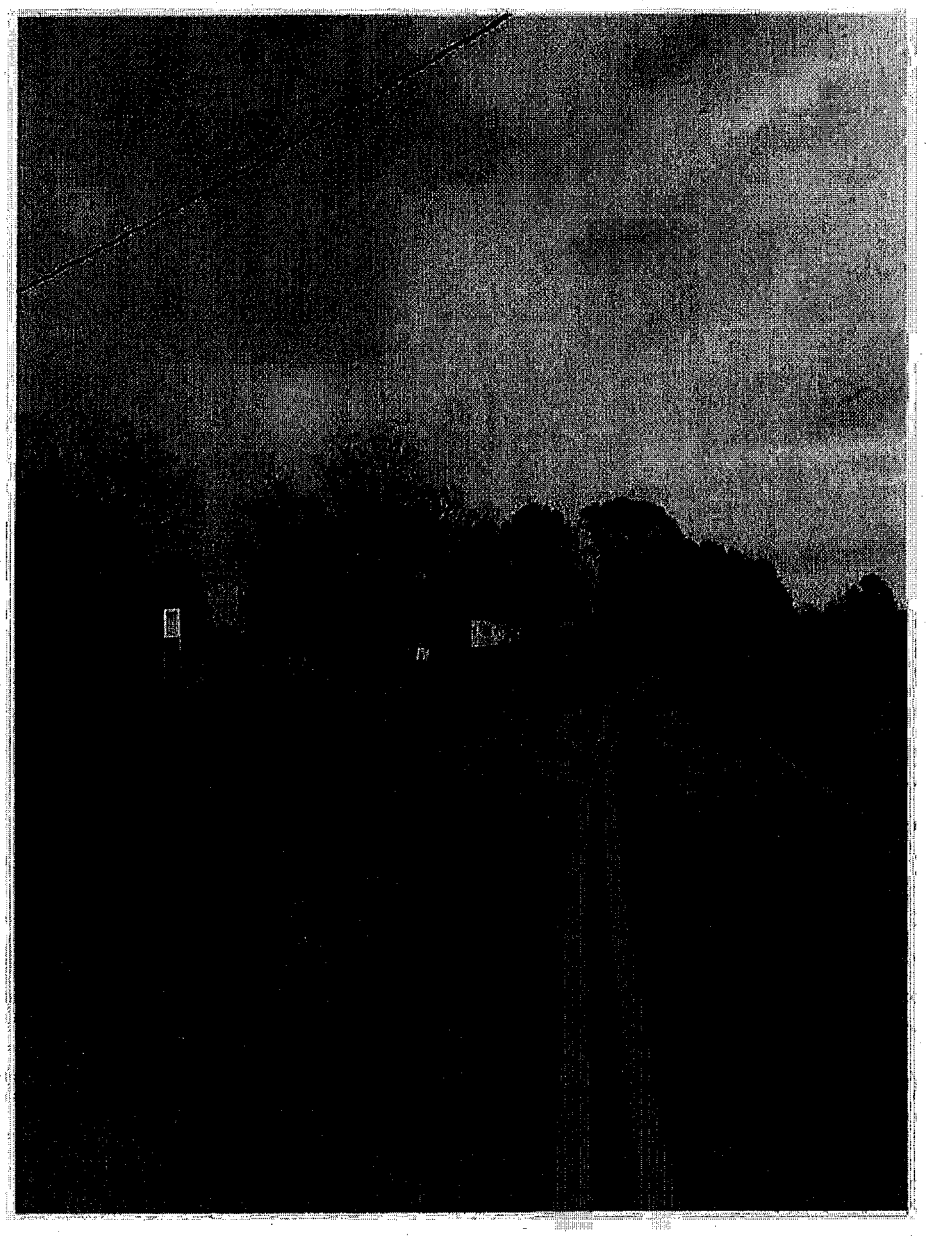
View of approximate sign location, located less than 10' off of Road Right-of-Way



View of Posted sign looking north from center line of Wrenn Road.



View looking west along centerline of Wrenn Road.



View looking east along centerline of Wrenn Road.

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Wednesday, December 18, 2019 12:28 PM
To: Governale, Leo
Subject: [External] Carolina Sunrock - Burlington North Air Permit
Attachments: A2-A3 Burlington North Revised.xlsx

[redacted]

Hi Leo,

Attached is an updated AA2 for you with all the proper labeling for the facility. let me know if you have any further questions and I'll be happy to help out.

Happy Holidays

Thanks

Scott

Scott Martino

Environmental Compliance Manager/Mine Engineer
Carolina Sunrock
200 Horizon Drive Suite 100
Raleigh, NC 27615
Office Phone:(919) 7476336 Cell (984) 202-4761

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
Drum Mix Asphalt Plant (250 tons per hour capacity) Consisting of the Following			
HMA-1	**Propane/Natural Gas/No. 2 Fuel Oil/Recycled No. 2 Fuel Oil/Recycled No.4 Fuel Oil-fired drum type hot asphalt plant (80 MMBtu/hr maximum heat input capacity)**	**HMA-CD1**	**Bagfilter (7,778 square feet of filter area)**
HMA Silo1	**Hot mix asphalt storage silo (150 tons maximum capacity)**	**NA**	**NA**
HMA Silo2	**Hot mix asphalt storage silo (150 tons maximum capacity)**	**NA**	**NA**
HMA Silo3	**Hot mix asphalt storage silo (200 tons maximum capacity)**	**NA**	**NA**
HMA Silo4	**Hot mix asphalt storage silo (200 tons maximum capacity)**	**NA**	**NA**
HMA Silo5	**Hot mix asphalt storage silo (200 tons maximum capacity)**	**NA**	**NA**
HMA-LO1	**Asphalt Loadout Operation Silo 1**	**NA**	**NA**
HMA-LO2	**Asphalt Loadout Operation Silo 2**	**NA**	**NA**
HMA-LO3	**Asphalt Loadout Operation Silo 3**	**NA**	**NA**
HMA-LO4	**Asphalt Loadout Operation Silo 4**	**NA**	**NA**
HMA-LO5	**Asphalt Loadout Operation Silo 5**	**NA**	**NA**
RAP Crushing System Consisting of the Following			
RAP-BF1	**RAP bin and feeder**	**NA**	**NA**
RAP-CR1	**RAP impact Crusher (65 tons per hour maximum rated capacity)**	**NA**	**NA**
RAP-SC1	**8' X 20' Double Deck Screen**	**NA**	**NA**
RAP-C1	**RAP 36" Conveyor (C-1) Feeder to Crusher (RAP-CR1)**	**NA**	**NA**
RAP-C2	**RAP 36" Conveyor (C-2) Cursher to Screen**	**NA**	**NA**
RAP-C3	**RAP 36" Conveyor (C-3) Screen to Plant**	**NA**	**NA**
RAP-C4	**RAP 36" Conveyor (C-4) Screen to Conveyor (C-5)**	**NA**	**NA**
RAP-C5	**RAP 36" Conveyor (C-5) Conveyor (C-5) to Conveyor (C-6)**	**NA**	**NA**
RAP-C5	**RAP 36" Conveyor (C-6) Conveyor (C-6) to Crusher (RAP-CR1)**	**NA**	**NA**
EXISTING EMISSION SOURCES MODIFIED BY THIS APPLICATION			
EMISSION SOURCES TO BE REMOVED BY THIS APPLICATION			

112(r) APPLICABILITY INFORMATION **A3**

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? ☐ Yes ☐ No

If No, please specify in detail how your facility avoided applicability: _____

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

☐ Yes ☐ No Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

☐ ☐

Yes No If yes, please specify: _____

C. List the processes subject to 112(r) at your facility:

PROCESS DESCRIPTION	PROCESS LEVEL (1, 2, or 3)	HAZARDOUS CHEMICAL	INVENTORY (LBS)

Attach Additional Sheets As Necessary

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
New Equipment to be ADDED by this Application			
Truck Mix Concrete Batch Plant (120 cubic yards per hour capacity) Consisting of the Following			
RMC-Silo1	**Cement Storage Silo (200-ton capacity)**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
RMC-Silo2	**Flyash Storage Silo (150-ton Capacity)**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
RMC-LO1	**Truck Loadout point**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
RMC-WB1	**Cement/Flyash Weigh Batcher (5-ton max Capacity)**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
RMC-WB2	**Aggregate Weigh Batcher (20-ton max Capacity)**	**NA**	**NA**
Existing Permitted Equipment To Be MODIFIED by this Application			
Equipment To Be DELETED by this Application			

112(r) APPLICABILITY INFORMATION — **A 3**

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? ☐ Yes ☐ No

If No, please specify in detail how your facility avoided applicability: _____

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

☐ Yes ☐ No Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

☐ Yes ☐ No If yes, please specify: _____

C. List the processes subject to 112(r) at your facility:

PROCESS DESCRIPTION	PROCESS LEVEL (1, 2, or 3)	HAZARDOUS CHEMICAL	MAXIMUM INTENDED INVENTORY (LBS)

Attach Additional Sheets As Necessary

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Thursday, December 19, 2019 8:40 AM
To: Governale, Leo
Subject: [External] RE: Carolina Sunrock - Burlington North Air Permit
Attachments: A2-A3 Burlington North Revised.xlsx

[redacted]

Hi Leo,

I fixed up the table to match everything as we discussed. If you want to use these labels in the permit that will be fine or you can keep what you have.

As far as staying within the synthetic minor world, that's exactly what we would like to do. We can accept a annually total production limit of 500K – tons per year.

Let me know if you need anything else and I'll be happy to help.

Thanks

Scott

From: Scott Martino
Sent: Wednesday, December 18, 2019 12:28 PM
To: Governale, Leo <Leo.Governale@ncdenr.gov>
Subject: Carolina Sunrock - Burlington North Air Permit

Hi Leo,

Attached is an updated AA2 for you with all the proper labeling for the facility. let me know if you have any further questions and I'll be happy to help out.

Happy Holidays

Thanks

Scott

Scott Martino

Environmental Compliance Manager/Mine Engineer
Carolina Sunrock
200 Horizon Drive Suite 100
Raleigh, NC 27615
Office Phone:(919) 7476336 Cell (984) 202-4761

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
Drum Mix Asphalt Plant (250 tons per hour capacity) Consisting of the Following			
HMA-1	Propane/Natural Gas/No. 2 Fuel Oil/Recycled No. 2 Fuel Oil/Recycled No.4 Fuel Oil-fired drum type hot asphalt plant (80 MMBtu/hr maximum heat input capacity)	HMA-CD1	Bagfilter (7,778 square feet of filter area)
HMA Silo1	Hot mix asphalt storage silo (150 tons maximum capacity)	NA	NA
HMA Silo2	Hot mix asphalt storage silo (150 tons maximum capacity)	NA	NA
HMA Silo3	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA Silo4	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA Silo5	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA-LO1	Asphalt Loadout Operation Silo 1	NA	NA
HMA-LO2	Asphalt Loadout Operation Silo 2	NA	NA
HMA-LO3	Asphalt Loadout Operation Silo 3	NA	NA
HMA-LO4	Asphalt Loadout Operation Silo 4	NA	NA
HMA-LO5	Asphalt Loadout Operation Silo 5	NA	NA
RAP Crushing System Consisting of the Following			
RAP-BF1	RAP bin and feeder	NA	NA
RAP-CR1	RAP impact Crusher (65 tons per hour maximum rated capacity)	NA	NA
RAP-SC1	8' X 20' Double Deck Screen	NA	NA
RAP-C1	RAP 36" Conveyor (C-1) Feeder to Crusher (RAP-CR1)	NA	NA
RAP-C2	RAP 36" Conveyor (C-2) Cursher to Screen	NA	NA
RAP-C3	RAP 36" Conveyor (C-3) Screen to Plant	NA	NA
RAP-C4	RAP 36" Conveyor (C-4) Screen to Conveyor (C-5)	NA	NA
RAP-C5	RAP 36" Conveyor (C-5) Conveyor (C-5) to Conveyor (C-6)	NA	NA
RAP-C5	RAP 36" Conveyor (C-6) Conveyor (C-6) to Crusher (RAP-CR1)	NA	NA
Existing Permitted Equipment to be MODIFIED in this Application			
Equipment to be DELETED by this Application			

112(r) APPLICABILITY INFORMATION — **A 3**

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? ☐ Yes ☐ No

If No, please specify in detail how your facility avoided applicability: _____

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

☐ Yes ☐ No Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

☐ Yes ☐ No If yes, please specify: _____

C. List the processes subject to 112(r) at your facility:

PROCESS DESCRIPTION	PROCESS LEVEL (1, 2, or 3)	HAZARDOUS CHEMICAL	INVENTORY (LBS)

Attach Additional Sheets As Necessary

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
Truck Mix Concrete Batch Plant (120 cubic yards per hour capacity) Consisting of the Following			
RMC-Silo1	**Cement Storage Silo (200-ton capacity)**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
RMC-Silo2	**Flyash Storage Silo (150-ton Capacity)**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
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RMC-WB1	**Cement/Flyash Weigh Batcher (5-ton max Capacity)**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
RMC-WB2	**Aggregate Weigh Batcher (20-ton max Capacity)**	**NA**	**NA**
Existing Permitted Equipment To Be MODIFIED By This Application			
Equipment To Be DELETED By This Application			

112(r) APPLICABILITY INFORMATION — **A 3**

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? ☐ Yes ☐ No

If No, please specify in detail how your facility avoided applicability: _____

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

☐ Yes ☐ No Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

☐ Yes ☐ No If yes, please specify: _____

C. List the processes subject to 112(r) at your facility:

PROCESS DESCRIPTION	PROCESS LEVEL (1, 2, or 3)	HAZARDOUS CHEMICAL	MAXIMUM INTENDED INVENTORY (LBS)

Attach Additional Sheets As Necessary

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Wednesday, January 8, 2020 1:50 PM
To: Governale, Leo
Subject: [External] Carolina Sunrock - Burlington North
Attachments: B9.xlsx; B Forms.xlsx

[redacted]

Hi Leo,

Attached are the two forms you requested with the corrections we discussed.

Also as for the cyclone on the baghouse for the asphalt plant. It is physically part of the baghouse itself. The air from the drum first passes through the cyclone protecting the bags from the larger size fractions. This large size fraction drop to the internal screw in the baghouse and is returned to the drum. Essentially the cyclone and baghouse is all one unit, the cyclone just pretreats the exhaust from the drum to help protect the bags as an internal function of the baghouse.

Keep me posted as to if you need anything else and I'll be happy to round it up for you.

Thanks

Scott

Scott Martino

Environmental Compliance Manager/Mine Engineer
Carolina Sunrock
200 Horizon Drive Suite 100
Raleigh, NC 27615
Office Phone:(919) 7476336 Cell (984) 202-4761

FORM B

SPECIFIC EMISSION SOURCE INFORMATION (REQUIRED FOR ALL SOURCES)

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **B**

EMISSION SOURCE DESCRIPTION: **Truck Mix Concrete Batch Plant (120 cubic yards per hour)**	EMISSION SOURCE ID NO: **RMC-Silo1, RMC-Silo2, RMC-LO1, RMC-WB2**
	CONTROL DEVICE ID NO(S): **RMC-CD2**
OPERATING SCENARIO **1** OF **1**	EMISSION POINT (STACK) ID NO(S): **RMC-CD2**

DESCRIBE IN DETAILTHE EMISSION SOURCE PROCESS (ATTACH FLOW DIAGRAM):

Truck Mix Concrete Batch Plant (120 cubic yards per hour) Consiting of: One (1) 185-ton Cement Silo, One (1) 135-ton Flyash Silo, Truck Loadout point, 25-ton Cement/Flyash Weight Batcher, and One (1) 50-ton Aggregate Weight Batcher.

TYPE OF EMISSION SOURCE (CHECK AND COMPLETE APPROPRIATE FORM B1-B9 ON THE FOLLOWING PAGES):

☐ Coal,wood,oil, gas, other burner (Form B1)	☐ Woodworking (Form B4)	☐ Manuf. of chemicals/coatings/inks (Form B7)
☐ Int.combustion engine/generator (Form B2)	☐ Coating/finishing/printing (Form B5)	☐ Incineration (Form B8)
☐ Liquid storage tanks (Form B3)	☑ Storage silos/bins (Form B6)	☑ Other (Form B9)

START CONSTRUCTION DATE: — DATE MANUFACTURED:

MANUFACTURER / MODEL NO.: — EXPECTED OP. SCHEDULE: **12** HR/DAY **6** DAY/WK **50** WK/YR

IS THIS SOURCE SUBJECT TO? ☑ NSPS (SUBPARTS?): ☐ NESHAP (SUBPARTS?):

PERCENTAGE ANNUAL THROUGHPUT (%): DEC-FEB **15** MAR-MAY **30** JUN-AUG **30** SEP-NOV **25**

CRITERIA AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

AIR POLLUTANT EMITTED	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) tons/yr
PARTICULATE MATTER (PM)	**See Appendix A**						
PARTICULATE MATTER<10 MICRONS (PM_{10})							
PARTICULATE MATTER<2.5 MICRONS ($PM_{2.5}$)							
SULFUR DIOXIDE (SO2)							
NITROGEN OXIDES (NOx)							
CARBON MONOXIDE (CO)							
VOLATILE ORGANIC COMPOUNDS (VOC)							
LEAD							
OTHER							

HAZARDOUS AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

HAZARDOUS AIR POLLUTANT	CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) lb/hr	EXPECTED ACTUAL (AFTER CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (BEFORE CONTROLS / LIMITS) tons/yr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) lb/hr	POTENTIAL EMISSIONS (AFTER CONTROLS / LIMITS) tons/yr
		See Appendix A						

TOXIC AIR POLLUTANT EMISSIONS INFORMATION FOR THIS SOURCE

TOXIC AIR POLLUTANT	CAS NO.	SOURCE OF EMISSION FACTOR	EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS lb/hr	lb/day	lb/yr
		See Appendix A			

Attachments: (1) emissions calculations and supporting documentation; (2) indicate all requested state and federal enforceable permit limits (e.g. hours of operation, emission rates) and describe how these are monitored and with what frequency; and (3) describe any monitoring devices, gauges, or test ports for this source.

COMPLETE THIS FORM AND COMPLETE AND ATTACH APPROPRIATE B1 THROUGH B9 FORM FOR EACH SOURCE

Attach Additional Sheets As Necessary

FORM B9

EMISSION SOURCE (OTHER)

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | **B9**

EMISSION SOURCE DESCRIPTION: **Truck Mix Concrete Batch Plant (120 cubic yards per hour)**	EMISSION SOURCE ID NO: **RM-1 through RM-5**
	CONTROL DEVICE ID NO(S): **RMC-CD2**
OPERATING SCENARIO: 1 OF 1	EMISSION POINT (STACK) ID NO(S): **EP-2**

DESCRIBE IN DETAIL THE PROCESS (ATTACH FLOW DIAGRAM): **Truck Mix Concrete Batch Plant (120 Cubic yards Per hour) consisitng of: Cemebt Silo (185 tons maximum capacity), Fly as silo (135 tons maximum capacity), truck loasdout point, Cement/flyash weigh batcher (25 ton maximum capacity), Aggregate wiegh batcher (50 tons maximum capacity).**

MATERIALS ENTERING PROCESS - CONTINUOUS OPERATION		MAX. DESIGN CAPACITY (UNIT/HR)	REQUESTED CAPACITY LIMITATION(UNIT/HR)
TYPE	UNITS		
Cement	**lb**	**448**	**448**
Supplement	**lb**	**148**	**148**
Coarse Aggregate	**lb**	**1980**	**1980**
Sand	**lb**	**1440**	**1440**
Water	**lb**	**140**	**140**

MATERIALS ENTERING PROCESS - BATCH OPERATION		MAX. DESIGN CAPACITY (UNIT/BATCH)	REQUESTED CAPACITY LIMITATION (UNIT/BATCH)
TYPE	UNITS		

MAXIMUM DESIGN (BATCHES / HOUR):	
REQUESTED LIMITATION (BATCHES / HOUR):	(BATCHES/YR):
FUEL USED:	TOTAL MAXIMUM FIRING RATE (MILLION BTU/HR):
MAX. CAPACITY HOURLY FUEL USE:	REQUESTED CAPACITY ANNUAL FUEL USE:

COMMENTS:

Attach Additional Sheets as Necessary

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Wednesday, January 15, 2020 1:12 PM
To: Governale, Leo
Subject: RE: [External] Carolina Sunrock - Burlington North Air Permit

[redacted]

Hi Leo,

Hope all is well

I was just touching base with you to see if you needed anything and get an update on when you will be finished.

Thanks for all the help

Scott

From: Governale, Leo [mailto:Leo.Governale@ncdenr.gov]
Sent: Monday, November 25, 2019 10:06 AM
To: Scott Martino <smartino@thesunrockgroup.com>
Subject: RE: [External] Carolina Sunrock - Burlington North Air Permit

Thanks Scott.
Leo

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
336.776.9638 (Direct)
336.776.9797 (Fax)

450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105
leo.governale@ncdenr.gov

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Monday, November 25, 2019 10:00 AM
To: Governale, Leo <Leo.Governale@ncdenr.gov>
Subject: [External] Carolina Sunrock - Burlington North Air Permit

[redacted]

Hi Leo,

As we talked the 20,000-gallon gasoline tank should have been a 20,000-gallong Diesel fuel for all our Mobil equipment and over the road haulage fleet.

If you could make that change would be great, we do not have gasoline tanks on any of our facilities other than maybe a small 5 gallon container for odds and end type stuff.

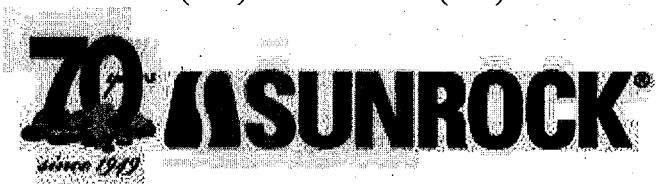
Let me know if you need anything else and Ill be happy to help

Thanks

Scott

Scott Martino

Environmental Compliance Manager/Mine Engineer
Carolina Sunrock
200 Horizon Drive Suite 100
Raleigh, NC 27615
Office Phone:(919) 7476336 Cell (984) 202-4761



Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Friday, January 17, 2020 3:45 PM
To: Governale, Leo
Cc: Murphy, Davis; Edwards, Lisa
Subject: RE: [External] RE: Carolina Sunrock, LLC - Burlington North - Facility ID No. 1700016
Attachments: C1 Sent.xlsx

[redacted]

Sorry Leo, for the confusion the baghouse for the asphalt plant is the 9,299 (see attached).

It was my error on the A2 form for the 7700 number. Thus you should have everything you need. I can fix the A2 forms for you if you would like.

But the attached is the proper control devise for both facilities.

Thanks

Scott

From: Governale, Leo [mailto:Leo.Governale@ncdenr.gov]
Sent: Friday, January 17, 2020 3:29 PM
To: Scott Martino <smartino@thesunrockgroup.com>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>; Edwards, Lisa <lisa.edwards@ncdenr.gov>
Subject: RE: [External] RE: Carolina Sunrock, LLC - Burlington North - Facility ID No. 1700016

Hi Scott,
Because the size of bagfilter HMA-CD1 has been changed from 9,299 sf to 7,778 sf, could you please provide an updated Form C along with the required PE certification?
Thanks,

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
336.776.9638 (Direct)
336.776.9797 (Fax)

450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105
leo.governale@ncdenr.gov

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Thursday, January 16, 2020 1:06 PM
To: Governale, Leo <Leo.Governale@ncdenr.gov>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>; Edwards, Lisa <lisa.edwards@ncdenr.gov>
Subject: [External] RE: Carolina Sunrock, LLC - Burlington North - Facility ID No. 1700016

[redacted]

Hi Leo,

Below See our responses to your questions. The modeling questions were answered by our consultant whom prepared the submittal for us. Let me know if you need anything further and I'll be happy to help.

Thanks
Scott

From: Governale, Leo [mailto:Leo.Governale@ncdenr.gov]
Sent: Wednesday, January 15, 2020 3:27 PM
To: Scott Martino <smartino@thesunrockgroup.com>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>; Edwards, Lisa <lisa.edwards@ncdenr.gov>
Subject: Carolina Sunrock, LLC - Burlington North - Facility ID No. 1700016

Scott,

The following additional information is needed to complete our review of the referenced air permit application:

1. Based on your email dated 12/19/2019, you mentioned that a total annual asphalt production limit of 500,000 tons would be acceptable. However, the application lists a requested limit of 1,488,581 tons per year and a fuel sulfur content of 0.5%. Either limit will be sufficient to retain Synthetic Minor permit status. What is the requested production limit?

   An annual asphalt production limit of 500,000-tons would be fine for Sunrock

2. The above email also provided updated emission source listings (Forms A2 & A3) that indicate re-labeling/identification changes for certain sources, as follows:
   - A different bagfilter size is shown for the asphalt plant than that shown on the original submittal (9,299 sf vs. 7,778 sf). If so, please provide an updated Form C.
   - Some HMA Silos differ in size (2 @ 150 tons, 2 @ 100 tons and 1 @ 200 tons vs. 2 @ 150 tons and 3 @ 200 tons).
   - Originally, two Loadout Operations were listed as Truck Loadout Operation (HMA-LO1) and Truck Loadout Operation as (HMA-LO2). The updated forms list 5 (five) Asphalt Loadout Operations (HMA-LO1 through HMA-LO5).
   - Several differences appear in the listings of the RAP Crushing System.
   - The labeling of the Concrete Batch Plant items has been updated. Please indicate the preferred labeling.
   - The updated forms do not indicate that the Aggregate Weigh Batcher is controlled by the bagfilter.

   Attached are each of the above forms for comparison. Please confirm the re-submission is correct.

   You can use the updated one as you felt more comfortable with its nomenclature than the original.

3. With regard to the air toxics modeling, please provide the following information/clarification:

- It appears that area source F1 is the Asphalt Silo Loadout (ID No.HMA-LO1). Per the updated equipment list each silo is equipped with its own loadout. Does this source represent the emissions from both the silo and loadout? Is it meant to represent all five silos/loadouts or just one?
  F1 is a single volume source that was used in the model to represent the fugitive emissions from all asphalt silos (Emission sources HMA Silos 1-5) and asphalt loading (Emission sources MMA LO1-5).
- For F2, "Cement Silo Loadout" what source is this meant to represent? The batch plant bagfitler exhaust? Or fugitive emissions from the truck loadout? Why is Arsenic only being modeled at F2? Shouldn't Cadmium and Nickel also be included?
  All emissions from the batch plant and truck loadout (Emission sources RMC-Silo1 & 2, RMC-LO1 and RMC-WB1) occur from the concrete batch plant bagfilter (Modeled emission point CD_2). F2 was erroneously included in the model as an artifact of an earlier plant design and model run. All As, Cd, and Ni emissions from the concrete batch plant will occur from CD_2.
- It appears that the modeling was optimized to maximize the emission limits while maintaining compliance. This is normal permitting practice, however in this particular case, some of the modeled emissions rates (formaldehyde for example) are over the Synthetic Minor permitting thresholds. As this is a Synthetic Minor permit, we cannot issue a permit with such high emission rates. Please advise how you wish for this issue to be resolved.
  There is no single TAP with an annual emission rate that exceeds 100 TPY. In addition, the sum of the modeled hourly emissions, assuming 8,760 hr/yr operation, from all TAPs is only 4.4 TPY, well below the 10 TPY synthetic minor threshold for HAPs. The TAP with the highest modeled annual emission rate is benzene. The modeled annual benzene emission rate is 7,792 lb/hr or 3.9 TPY. However, Sunrock contends that the limits imposed due to the air toxics regulation and the requirement to maintain total facility emissions less than the synthetic minor thresholds are two separate requirements. Sunrock will comply with both. Had the TAP permit allowed for emissions of a single TAP to exceed synthetic minor rates it would not have negated Sunrock's requirement to maintain total facility emissions to less than synthetic minor rates. In addition, the pollutant cited in the example (formaldehyde) only has a 1-hr averaging period per the TAP regulation. A 1-hr limit imposed by the TAP regulation cannot be expressed on an annual basis and used to compare to an annual standard imposed by another regulation. Otherwise, the agency would only need a single air quality regulation for every pollutant.

Until the above information is received, your application will be considered incomplete and inactive. Your response to this request will become part of your initial permit application received September 17, 2019. Please provide the requested information by October 13, 2019, otherwise the application may be returned.

Should you have any questions, please contact me at your convenience. Thanks for your attention to this matter.

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
336.776.9638 (Direct)
336.776.9797 (Fax)

450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105
leo.governale@ncdenr.gov

North Carolina Public Records Law and may be disclosed to third parties.

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 09/22/16 | NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate | C1

CONTROL DEVICE ID NO: **RMS-CD2**	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): **See Form A2&A3**
EMISSION POINT (STACK) ID NO(S): **EP-2**	POSITION IN SERIES OF CONTROLS NO. **1** OF **1** UNITS
	P.E. SEAL REQUIRED (PER 2q .0112)? ☐ YES ☑ NO

DESCRIBE CONTROL SYSTEM: **C&W Manufacturing - RA-140 - 6500 CFM to control emissions from cement/fly ash silos and aggregate and truck loading.**

	PM	PM10		
POLLUTANTS COLLECTED:				
BEFORE CONTROL EMISSION RATE (LB/HR):				
CAPTURE EFFICIENCY:	%	%	%	%
CONTROL DEVICE EFFICIENCY:	%	%	%	%
CORRESPONDING OVERALL EFFICIENCY:	%	%	%	%
EFFICIENCY DETERMINATION CODE:				
TOTAL AFTER CONTROL EMISSION RATE (LB/HR):				

PRESSURE DROP (IN H_2O): MIN: MAX: GAUGE? ☑ YES ☐ NO		
BULK PARTICLE DENSITY (LB/FT^3):	INLET TEMPERATURE (^oF): MIN	MAX
POLLUTANT LOADING RATE: ☐ LB/HR ☐ GR/FT^3	OUTLET TEMPERATURE (^oF) MIN	MAX
INLET AIR FLOW RATE (ACFM): **6,500 cfm**	FILTER OPERATING TEMP (^oF): **Ambient**	
NO. OF COMPARTMENTS: **2**	NO. OF BAGS PER COMPARTMENT: **36**	LENGTH OF BAG (IN.): **114**
NO. OF CARTRIDGES: **72**	FILTER SURFACE AREA PER CARTRIDGE (FT^2): **9.83**	DIAMETER OF BAG (IN.): **4**
TOTAL FILTER SURFACE AREA (FT^2): **1,433**	AIR TO CLOTH RATIO: **4.54:1**	
DRAFT TYPE: ☑ INDUCED/NEGATIVE ☐ FORCED/POSITIVE	FILTER MATERIAL: ☐ WOVEN ☑ FELTED	

DESCRIBE CLEANING PROCEDURES:

☐ AIR PULSE ☐ SONIC
☑ REVERSE FLOW ☐ SIMPLE BAG COLLAPSE
☐ MECHANICAL/SHAKER ☐ RING BAG COLLAPSE
☐ OTHER:

DESCRIBE INCOMING AIR STREAM: **Weighing and Truck Loading of aggregate, fly ash, and Cement**

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1	**40**	**40.2**
1-10	**60**	**100**
10-25		
25-50		
50-100		
>100		
	TOTAL = 100	

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

COMMENTS:

Attach Additional Sheets As Necessary

FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — C1

CONTROL DEVICE ID NO: **HMA-CD1**	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): **See Form A2&A3**
EMISSION POINT (STACK) ID NO(S): **EP-1**	POSITION IN SERIES OF CONTROLS NO. **1** OF **1** UNITS
	P.E. SEAL REQUIRED (PER 2q .0112)? ☐ YES ☑ NO

DESCRIBE CONTROL SYSTEM: **Hot Mix Asphalt Plant Bag House Model RBH 51-12 Ser No 03-201-3001,**

- **o 51,111 ACFM**
- **o (768) 4-5/8" Ø x 10' long 14oz aramid bags**
- **o 9,299 ft2 cloth area; 5.5 fpm filtering velocity (Air/Cloth Ratio)**
- **o 41-5/8" ID stack; 31'-0" discharge height above grade**
- **o Integral 9' Ø x 10' long horizontal cyclone primary collector**

POLLUTANTS COLLECTED:	**PM**	**PM10**		
BEFORE CONTROL EMISSION RATE (LB/HR):	**See Appendix A**			
CAPTURE EFFICIENCY:	**99.99** %	**99.99** %	%	%
CONTROL DEVICE EFFICIENCY:	**90** %	**90** %	%	%
CORRESPONDING OVERALL EFFICIENCY:	**93** %	**90** %	%	%
EFFICIENCY DETERMINATION CODE:	**1**	**1**		
TOTAL AFTER CONTROL EMISSION RATE (LB/HR):	**See Appendix A**			

PRESSURE DROP (IN H_2O): MIN: MAX: GAUGE? ☑ YES ☐ NO	
BULK PARTICLE DENSITY (LB/FT^3):	INLET TEMPERATURE (^oF): MIN MAX
POLLUTANT LOADING RATE: ☐ LB/HR ☐ GR/FT^3	OUTLET TEMPERATURE (^oF) MIN MAX
INLET AIR FLOW RATE (ACFM): **51,111**	FILTER OPERATING TEMP (^oF):

NO. OF COMPARTMENTS: **3**	NO. OF BAGS PER COMPARTMENT: **256**	LENGTH OF BAG (IN.): **120.5**
NO. OF CARTRIDGES: **768**	FILTER SURFACE AREA PER CARTRIDGE (FT^2): **12.11**	DIAMETER OF BAG (IN.): **4 5/8**
TOTAL FILTER SURFACE AREA (FT^2): **9,299**	AIR TO CLOTH RATIO: **5.5:1**	

DRAFT TYPE: ☑ INDUCED/NEGATIVE ☐ FORCED/POSITIVE FILTER MATERIAL: ☐ WOVEN ☑ FELTED

DESCRIBE CLEANING PROCEDURES:

- ☐ AIR PULSE
- ☑ REVERSE FLOW
- ☐ MECHANICAL/SHAKER
- ☐ OTHER:
- ☐ SONIC
- ☐ SIMPLE BAG COLLAPSE
- ☐ RING BAG COLLAPSE

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1	**40**	**40.2**
1-10	**60**	**100**
10-25		
25-50		
50-100		
>100		
	TOTAL = 100	

DESCRIBE INCOMING AIR STREAM: **Hot Air from Drying and Mixing Drums in HMA Plant**

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

COMMENTS:

Attach Additional Sheets As Necessary

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Friday, January 17, 2020 3:49 PM
To: Governale, Leo
Cc: Murphy, Davis; Edwards, Lisa
Subject: RE: [External] RE: Carolina Sunrock, LLC - Burlington North - Facility ID No. 1700016
Attachments: A2-A3 Burlington North Revised.xlsx

[redacted]

Leo here is the fixed a2 form.

Sorry that was my fault I did not notice that part on the form.

Again Sorry

Scott

From: Governale, Leo [mailto:Leo.Governale@ncdenr.gov]
Sent: Friday, January 17, 2020 3:29 PM
To: Scott Martino <smartino@thesunrockgroup.com>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>; Edwards, Lisa <lisa.edwards@ncdenr.gov>
Subject: RE: [External] RE: Carolina Sunrock, LLC - Burlington North - Facility ID No. 1700016

Hi Scott,
Because the size of bagfilter HMA-CD1 has been changed from 9,299 sf to 7,778 sf, could you please provide an updated Form C along with the required PE certification?
Thanks,

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
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450 West Hanes Mill Road, Suite 300
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Sent: Thursday, January 16, 2020 1:06 PM
To: Governale, Leo <Leo.Governale@ncdenr.gov>

Cc: Murphy, Davis <davis.murphy@ncdenr.gov>; Edwards, Lisa <lisa.edwards@ncdenr.gov>
Subject: [External] RE: Carolina Sunrock, LLC - Burlington North - Facility ID No. 1700016

[redacted]

Hi Leo,

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Thanks
Scott

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Sent: Wednesday, January 15, 2020 3:27 PM
To: Scott Martino <smartino@thesunrockgroup.com>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>; Edwards, Lisa <lisa.edwards@ncdenr.gov>
Subject: Carolina Sunrock, LLC - Burlington North - Facility ID No. 1700016

Scott,

The following additional information is needed to complete our review of the referenced air permit application:

1. Based on your email dated 12/19/2019, you mentioned that a total annual asphalt production limit of 500,000 tons would be acceptable. However, the application lists a requested limit of 1,488,581 tons per year and a fuel sulfur content of 0.5%. Either limit will be sufficient to retain Synthetic Minor permit status. What is the requested production limit?

   An annual asphalt production limit of 500,000-tons would be fine for Sunrock

2. The above email also provided updated emission source listings (Forms A2 & A3) that indicate re-labeling/identification changes for certain sources, as follows:
   - A different bagfilter size is shown for the asphalt plant than that shown on the original submittal (9,299 sf vs. 7,778 sf). If so, please provide an updated Form C.
   - Some HMA Silos differ in size (2 @ 150 tons, 2 @ 100 tons and 1 @ 200 tons vs. 2 @ 150 tons and 3 @ 200 tons).
   - Originally, two Loadout Operations were listed as Truck Loadout Operation (HMA-LO1) and Truck Loadout Operation as (HMA-LO2). The updated forms list 5 (five) Asphalt Loadout Operations (HMA-LO1 through HMA-LO5).
   - Several differences appear in the listings of the RAP Crushing System.
   - The labeling of the Concrete Batch Plant items has been updated. Please indicate the preferred labeling.
   - The updated forms do not indicate that the Aggregate Weigh Batcher is controlled by the bagfilter.

   Attached are each of the above forms for comparison. Please confirm the re-submission is correct.

   You can use the updated one as you felt more comfortable with its nomenclature than the original.

3. With regard to the air toxics modeling, please provide the following information/clarification:
   - It appears that area source F1 is the Asphalt Silo Loadout (ID No.HMA-LO1). Per the updated equipment list each silo is equipped with its own loadout. Does this source represent the emissions from both the silo and loadout? Is it meant to represent all five silos/loadouts or just one?

F1 is a single volume source that was used in the model to represent the fugitive emissions from all asphalt silos (Emission sources HMA Silos 1-5) and asphalt loading (Emission sources MMA LO1-5).

- For F2, "Cement Silo Loadout" what source is this meant to represent? The batch plant bagfitler exhaust? Or fugitive emissions from the truck loadout? Why is Arsenic only being modeled at F2? Shouldn't Cadmium and Nickel also be included?

  All emissions from the batch plant and truck loadout (Emission sources RMC-Silo1 & 2, RMC-LO1 and RMC-WB1) occur from the concrete batch plant bagfilter (Modeled emission point CD_2). F2 was erroneously included in the model as an artifact of an earlier plant design and model run. All As, Cd, and Ni emissions from the concrete batch plant will occur from CD_2.

- It appears that the modeling was optimized to maximize the emission limits while maintaining compliance. This is normal permitting practice, however in this particular case, some of the modeled emissions rates (formaldehyde for example) are over the Synthetic Minor permitting thresholds. As this is a Synthetic Minor permit, we cannot issue a permit with such high emission rates. Please advise how you wish for this issue to be resolved.

  There is no single TAP with an annual emission rate that exceeds 100 TPY. In addition, the sum of the modeled hourly emissions, assuming 8,760 hr/yr operation, from all TAPs is only 4.4 TPY, well below the 10 TPY synthetic minor threshold for HAPs. The TAP with the highest modeled annual emission rate is benzene. The modeled annual benzene emission rate is 7,792 lb/hr or 3.9 TPY. However, Sunrock contends that the limits imposed due to the air toxics regulation and the requirement to maintain total facility emissions less than the synthetic minor thresholds are two separate requirements. Sunrock will comply with both. Had the TAP permit allowed for emissions of a single TAP to exceed synthetic minor rates it would not have negated Sunrock's requirement to maintain total facility emissions to less than synthetic minor rates. In addition, the pollutant cited in the example (formaldehyde) only has a 1-hr averaging period per the TAP regulation. A 1-hr limit imposed by the TAP regulation cannot be expressed on an annual basis and used to compare to an annual standard imposed by another regulation. Otherwise, the agency would only need a single air quality regulation for every pollutant.

Until the above information is received, your application will be considered incomplete and inactive. Your response to this request will become part of your initial permit application received September 17, 2019. Please provide the requested information by October 13, 2019, otherwise the application may be returned.

Should you have any questions, please contact me at your convenience. Thanks for your attention to this matter.

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
336.776.9638 (Direct)
336.776.9797 (Fax)

450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105
leo.governale@ncdenr.gov

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
Drum Mix Asphalt Plant (250 tons per hour capacity) Consisting of the Following			
HMA-1	Propane/Natural Gas/No. 2 Fuel Oil/Recycled No. 2 Fuel Oil/Recycled No.4 Fuel Oil-fired drum type hot asphalt plant (80 MMBtu/hr maximum heat input capacity)	HMA-CD1	Bagfilter (9,299 square feet of filter area)
HMA Silo1	Hot mix asphalt storage silo (150 tons maximum capacity)	NA	NA
HMA Silo2	Hot mix asphalt storage silo (150 tons maximum capacity)	NA	NA
HMA Silo3	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA Silo4	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA Silo5	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA-LO1	Asphalt Loadout Operation Silo 1	NA	NA
HMA-LO2	Asphalt Loadout Operation Silo 2	NA	NA
HMA-LO3	Asphalt Loadout Operation Silo 3	NA	NA
HMA-LO4	Asphalt Loadout Operation Silo 4	NA	NA
HMA-LO5	Asphalt Loadout Operation Silo 5	NA	NA
RAP Crushing System Consisting of the Following			
RAP-BF1	RAP bin and feeder	NA	NA
RAP-CR1	RAP impact Crusher (65 tons per hour maximum rated capacity)	NA	NA
RAP-SC1	8' X 20' Double Deck Screen	NA	NA
RAP-C1	RAP 36" Conveyor (C-1) Feeder to Crusher (RAP-CR1)	NA	NA
RAP-C2	RAP 36" Conveyor (C-2) Cursher to Screen	NA	NA
RAP-C3	RAP 36" Conveyor (C-3) Screen to Plant	NA	NA
RAP-C4	RAP 36" Conveyor (C-4) Screen to Conveyor (C-5)	NA	NA
RAP-C5	RAP 36" Conveyor (C-5) Conveyor (C-5) to Conveyor (C-6)	NA	NA
RAP-C5	RAP 36" Conveyor (C-6) Conveyor (C-6) to Crusher (RAP-CR1)	NA	NA
Existing Permitted Equipment to be MODIFIED by this Application			
Equipment to be DELETED by this Application			

112(r) APPLICABILITY INFORMATION — A3

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? ☐ Yes ☐ No

If No, please specify in detail how your facility avoided applicability: _____

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

☐ Yes ☐ No Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

☐ Yes ☐ No If yes, please specify: _____

C. List the processes subject to 112(r) at your facility:

PROCESS DESCRIPTION	PROCESS LEVEL (1, 2, or 3)	HAZARDOUS CHEMICAL	INVENTORY (LBS)

Attach Additional Sheets As Necessary

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
Truck Mix Concrete Batch Plant (120 cubic yards per hour capacity) Consisting of the Following			
RMC-Silo1	**Cement Storage Silo (200-ton capacity)**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
RMC-Silo2	**Flyash Storage Silo (150-ton Capacity)**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
RMC-LO1	**Truck Loadout point**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
RMC-WB1	**Cement/Flyash Weigh Batcher (5-ton max Capacity)**	**RMC-CD2**	**Bagfilter (1,433 square feet of filter area)**
RMC-WB2	**Aggregate Weigh Batcher (20-ton max Capacity)**	**NA**	**NA**
Existing Permitted Equipment to Be MODIFIED by This Application			
Equipment to Be DELETED by This Application			

112(r) APPLICABILITY INFORMATION — **A 3**

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? ☐ Yes ☐ No

If No, please specify in detail how your facility avoided applicability: _____

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

☐ Yes ☐ No Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

☐ Yes ☐ No If yes, please specify: _____

C. List the processes subject to 112(r) at your facility:

PROCESS DESCRIPTION	PROCESS LEVEL (1, 2, or 3)	HAZARDOUS CHEMICAL	MAXIMUM INTENDED INVENTORY (LBS)

Attach Additional Sheets As Necessary

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Tuesday, January 21, 2020 1:44 PM
To: Governale, Leo
Subject: [External] revised forms
Attachments: A2-A3 prospect hill quarry-Final.xlsx; C1 Sent.xlsx

[redacted]

Hi Leo,

Check the attached to see if these work for you. I kind of merged the two A2 forms a little bit and updated the C1s for both baghouses.

Either way let me know and I'll do whatever is needed.

Thanks

Scott

Scott Martino

Environmental Compliance Manager/Mine Engineer
Carolina Sunrock
200 Horizon Drive Suite 100
Raleigh, NC 27615
Office Phone:(919) 7476336 Cell (984) 202-4761

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
Drum Mix Asphalt Plant (250 tons per hour capacity) Consisting of the Following			
HMA-1	Propane/Natural Gas/No. 2 Fuel Oil/Recycled No. 2 Fuel Oil/Recycled No.4 Fuel Oil-fired drum type hot asphalt plant (80 MMBtu/hr maximum heat input capacity)	HMA-CD1	Bagfilter (9,299 square feet of filter area)
HMA Silo1	Hot mix asphalt storage silo (150 tons maximum capacity)	NA	NA
HMA Silo2	Hot mix asphalt storage silo (150 tons maximum capacity)	NA	NA
HMA Silo3	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA Silo4	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA Silo5	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA-LO1	Asphalt Loadout Operation Silo 1	NA	NA
HMA-LO2	Asphalt Loadout Operation Silo 2	NA	NA
HMA-LO3	Asphalt Loadout Operation Silo 3	NA	NA
HMA-LO4	Asphalt Loadout Operation Silo 4	NA	NA
HMA-LO5	Asphalt Loadout Operation Silo 5	NA	NA
RAP Crushing System Consisting of the Following			
RAP-CRSH	RAP impact Crusher (65 tons per hour maximum rated capacity)	NA	NA
RAP-CNV	(4) Conveyors	NA	NA
RAP-SCN	8' X 20' Double Deck Screen	NA	NA
Truck Mix Concrete Batch Plant (120 cubic yards per hour capacity) Consisting of the Following			
RM-1	Cement Storage Silo (200-ton capacity)	RMC-CD2	Bagfilter (1,433 square feet of filter area)
RM-2	Flyash Storage Silo (150-ton Capacity)	RMC-CD2	Bagfilter (1,433 square feet of filter area)
RM-3	Truck Loadout point	RMC-CD2	Bagfilter (1,433 square feet of filter area)
RM-4	Cement/Flyash Weigh Batcher (25-ton max Capacity)	RMC-CD2	Bagfilter (1,433 square feet of filter area)
RM-5	Aggregate Weigh Batcher (50-ton max Capacity)	NA	NA
Existing Permitted Equipment to be MODIFIED by This Application			
Equipment to be REMOVED from This Application			

112(r) APPLICABILITY INFORMATION — **A3**

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? ☐ Yes ☐ No

If No, please specify in detail how your facility avoided applicability: _____

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

☐ Yes ☐ No Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

☐ Yes ☐ No If yes, please specify: _____

C. List the processes subject to 112(r) at your facility:

PROCESS DESCRIPTION	PROCESS LEVEL (1, 2, or 3)	HAZARDOUS CHEMICAL	INVENTORY (LBS)

Attach Additional Sheets As Necessary

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Wednesday, January 22, 2020 8:18 PM
To: Governale, Leo
Cc: Murphy, Davis; Edwards, Lisa
Subject: [External] RE: Carolina Sunrock - Burlington North - Caswell County - Facility ID No. 1700016
Attachments: A2-A3 Burlington North final 01-22-2020.xlsx

[redacted]

Hi Leo,

See attached, all I did was add the two heaters as you stated straight from our existing permit as they are the same units.

Let me know if you have any questions or need anything else and I'll be happy to help.

Thanks

Scott

From: Governale, Leo [mailto:Leo.Governale@ncdenr.gov]
Sent: Wednesday, January 22, 2020 3:17 PM
To: Scott Martino <smartino@thesunrockgroup.com>
Cc: Murphy, Davis <davis.murphy@ncdenr.gov>; Edwards, Lisa <lisa.edwards@ncdenr.gov>
Subject: Carolina Sunrock - Burlington North - Caswell County - Facility ID No. 1700016

Hi Scott,
Just to clarify – based on our conversation, you will be providing a revised Form A2/A3 showing the updated nomenclature/ID Nos. for the various emission sources.
Thanks,
Leo

Leo L. Governale, P.E.
Environmental Engineer
Division of Air Quality, Winston-Salem Regional Office

336.776.9800 (Main)
336.776.9638 (Direct)
336.776.9797 (Fax)

450 West Hanes Mill Road, Suite 300
Winston-Salem, NC 27105
leo.governale@ncdenr.gov

North Carolina Public Records Law and may be disclosed to third parties.

FORMs A2, A3

EMISSION SOURCE LISTING FOR THIS APPLICATION - A2

112r APPLICABILITY INFORMATION - A3

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — **A2**

EMISSION SOURCE LISTING: New, Modified, Previously Unpermitted, Replaced, Deleted

EMISSION SOURCE ID NO.	EMISSION SOURCE DESCRIPTION	CONTROL DEVICE ID NO.	CONTROL DEVICE DESCRIPTION
Drum Mix Asphalt Plant (250 tons per hour capacity) Consisting of the Following			
HMA-1	Propane/Natural Gas/No. 2 Fuel Oil/Recycled No. 2 Fuel Oil/Recycled No.4 Fuel Oil-fired drum type hot asphalt plant (80 MMBtu/hr maximum heat input capacity)	HMA-CD1	Bagfilter (9,299 square feet of filter area)
HMA Silo1	Hot mix asphalt storage silo (150 tons maximum capacity)	NA	NA
HMA Silo2	Hot mix asphalt storage silo (150 tons maximum capacity)	NA	NA
HMA Silo3	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA Silo4	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA Silo5	Hot mix asphalt storage silo (200 tons maximum capacity)	NA	NA
HMA-LO1	Asphalt Loadout Operation Silo 1	NA	NA
HMA-LO2	Asphalt Loadout Operation Silo 2	NA	NA
HMA-LO3	Asphalt Loadout Operation Silo 3	NA	NA
HMA-LO4	Asphalt Loadout Operation Silo 4	NA	NA
HMA-LO5	Asphalt Loadout Operation Silo 5	NA	NA
ES-H1	Natural gas/no.2 fuel oil-fired liquid asphalt cement heater (1.2 million btu per hour maximum heat input)	NA	NA
ES-H2	Natural gas/no.2 fuel oil-fired liquid asphalt cement heater (1.1 million btu per hour maximum heat input)	NA	NA
RAP Crushing System Consisting of the Following			
RAP-CRSH	RAP Impact Crusher (65 tons per hour maximum rated capacity)	NA	NA
RAP-CNV	(4) Conveyors	NA	NA
RAP-SCN	8' X 20' Double Deck Screen	NA	NA
Truck Mix Concrete Batch Plant (120 cubic yards per hour capacity) Consisting of the Following			
RM-1	Cement Storage Silo (200-ton capacity)	RMC-CD2	Bagfilter (1,433 square feet of filter area)
RM-2	Flyash Storage Silo (150-ton Capacity)	RMC-CD2	Bagfilter (1,433 square feet of filter area)
RM-3	Truck Loadout point	RMC-CD2	Bagfilter (1,433 square feet of filter area)
RM-4	Cement/Flyash Weigh Batcher (25-ton max Capacity)	RMC-CD2	Bagfilter (1,433 square feet of filter area)
RM-5	Aggregate Weigh Batcher (50-ton max Capacity)	NA	NA
Existing Permitted Emissions to be MODIFIED by this Application			
Equipment to be DELETED by this Application			

112(r) APPLICABILITY INFORMATION — **A3**

Is your facility subject to 40 CFR Part 68 "Prevention of Accidental Releases" - Section 112(r) of the Federal Clean Air Act? ☐ Yes ☐ No

If No, please specify in detail how your facility avoided applicability: _____

If your facility is Subject to 112(r), please complete the following:

A. Have you already submitted a Risk Management Plan (RMP) to EPA Pursuant to 40 CFR Part 68.10 or Part 68.150?

☐ Yes ☐ No Specify required RMP submittal date: _____ If submitted, RMP submittal date: _____

B. Are you using administrative controls to subject your facility to a lesser 112(r) program standard?

☐ Yes ☐ No If yes, please specify: _____

C. List the processes subject to 112(r) at your facility:

PROCESS DESCRIPTION	PROCESS LEVEL (1, 2, or 3)	HAZARDOUS CHEMICAL	INVENTORY (LBS)

Attach Additional Sheets As Necessary

Governale, Leo

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Thursday, January 23, 2020 3:13 PM
To: Governale, Leo
Subject: [External] follow up

[redacted]

Hi Leo,

I followed up with the modelers. The F2 is nothing it was left over from an initial runs and they forgot to take it out. As for the heaters. I spoke with the modelers they modeled ESH-2 as the bigger unit 1.2-btu and ESH-1 is the 1.1 btu unit. On my a2 form I gave you it would look like this:

ESH-1 (1.1 btu) = ES-H2

ESH-2 (1.2 btu) = ES-H1

Let me know if that makes sense and if you need anything else.

Thanks

Scott

Scott Martino

Environmental Compliance Manager/Mine Engineer
Carolina Sunrock
200 Horizon Drive Suite 100
Raleigh, NC 27615
Office Phone:(919) 7476336 Cell (984) 202-4761

Wright, Dylan A

From: Scott Martino <smartino@thesunrockgroup.com>
Sent: Thursday, January 30, 2020 9:11 AM
To: Wright, Dylan A; Governale, Leo
Subject: [External] C1
Attachments: ASTEC RBH 51-12.pdf; C1 Sent.xlsx

CAUTION:

Hi Guys,

Sorry I am in meeting and tied up most of today. the only things I notice from what I sent Leo earlier in the month is I hit a 6 instead of a 3 on number of cartages, thus messing up the calculations. I fixed up the form and attached is the vender drawling for the baghouse with specs and below is what they provided me on the ratios.

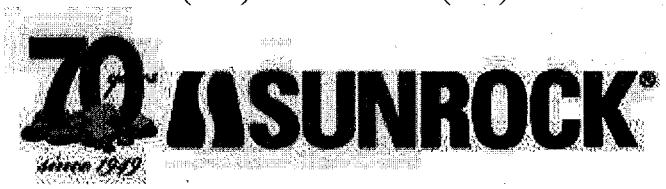
BURLINGTON NORTH SER NO 03-201-3001
RBH 51-12 IS A 51000 CFM BAGHOUSE WITH 738 4-5/8" X 120.5"BAGS
8968 SF OF CLOTH 5.68 AIR TO CLOTH

Let me know if you need anything else

Thanks
Scott

Scott Martino

Environmental Compliance Manager/Mine Engineer
Carolina Sunrock
200 Horizon Drive Suite 100
Raleigh, NC 27615
Office Phone:(919) 7476336 Cell (984) 202-4761



FORM C1

CONTROL DEVICE (FABRIC FILTER)

REVISED 09/22/16 — NCDEQ/Division of Air Quality - Application for Air Permit to Construct/Operate — C1

CONTROL DEVICE ID NO: **HMA-CD1**	CONTROLS EMISSIONS FROM WHICH EMISSION SOURCE ID NO(S): **See Form A2&A3**
EMISSION POINT (STACK) ID NO(S): **EP-1**	POSITION IN SERIES OF CONTROLS NO. **1** OF **1** UNITS
	P.E. SEAL REQUIRED (PER 2q .0112)? ☐ YES ☑ NO

DESCRIBE CONTROL SYSTEM: **Hot Mix Asphalt Plant Bag House Model RBH 51-12 Ser No 03-201-3001,**

- **51,111 ACFM**
- **(768) 4-5/8" Ø x 10' long 14oz aramid bags**
- **8,968 ft2 cloth area; 5.68 fpm filtering velocity (Air/Cloth Ratio)**
- **41-5/8" ID stack; 31'-0" discharge height above grade**
- **Integral 9' Ø x 10' long horizontal cyclone primary collector**

POLLUTANTS COLLECTED:	**PM**	**PM10**		
BEFORE CONTROL EMISSION RATE (LB/HR):	**See Appendix A**			
CAPTURE EFFICIENCY:	**99.99** %	**99.99** %	%	%
CONTROL DEVICE EFFICIENCY:	**90** %	**90** %	%	%
CORRESPONDING OVERALL EFFICIENCY:	**93** %	**90** %	%	%
EFFICIENCY DETERMINATION CODE:	**1**	**1**		
TOTAL AFTER CONTROL EMISSION RATE (LB/HR):	**8.25**	**5.75**		

PRESSURE DROP (IN H_2O): MIN: MAX: GAUGE? ☑ YES ☐ NO	
BULK PARTICLE DENSITY (LB/FT^3): ~~51,111~~	INLET TEMPERATURE (°f): MIN **Ambient** MAX **325**
POLLUTANT LOADING RATE: ☑ LB/HR ☐ GR/FT^3	OUTLET TEMPERATURE (°f) MIN **Ambient** MAX **325**
INLET AIR FLOW RATE (ACFM): **51,111**	FILTER OPERATING TEMP (°f): **325**

NO. OF COMPARTMENTS: **3**	NO. OF BAGS PER COMPARTMENT: **246**	LENGTH OF BAG (IN.): **120.5**
NO. OF CARTRIDGES: **738**	FILTER SURFACE AREA PER CARTRIDGE (FT^2): **12.11**	DIAMETER OF BAG (IN.): **4 5/8**
TOTAL FILTER SURFACE AREA (FT^2): **8,968**	AIR TO CLOTH RATIO: **5.68**	

DRAFT TYPE: ☑ INDUCED/NEGATIVE ☐ FORCED/POSITIVE FILTER MATERIAL: ☑ WOVEN ☐ FELTED

DESCRIBE CLEANING PROCEDURES:

- ☑ AIR PULSE
- ☐ REVERSE FLOW
- ☐ MECHANICAL/SHAKER
- ☐ OTHER:
- ☐ SONIC
- ☐ SIMPLE BAG COLLAPSE
- ☐ RING BAG COLLAPSE

SIZE (MICRONS)	WEIGHT % OF TOTAL	CUMULATIVE %
0-1	**40**	**40.2**
1-10	**60**	**100**
10-25		
25-50		
50-100		
>100		
	TOTAL = 100	

DESCRIBE INCOMING AIR STREAM: **Hot Air from Drying and Mixing Drums in HMA Plant**

ON A SEPARATE PAGE, ATTACH A DIAGRAM SHOWING THE RELATIONSHIP OF THE CONTROL DEVICE TO ITS EMISSION SOURCE(S):

COMMENTS:

NC Department of Environmental Quality
Received
JAN 30 2020
Winston-Salem Regional Office

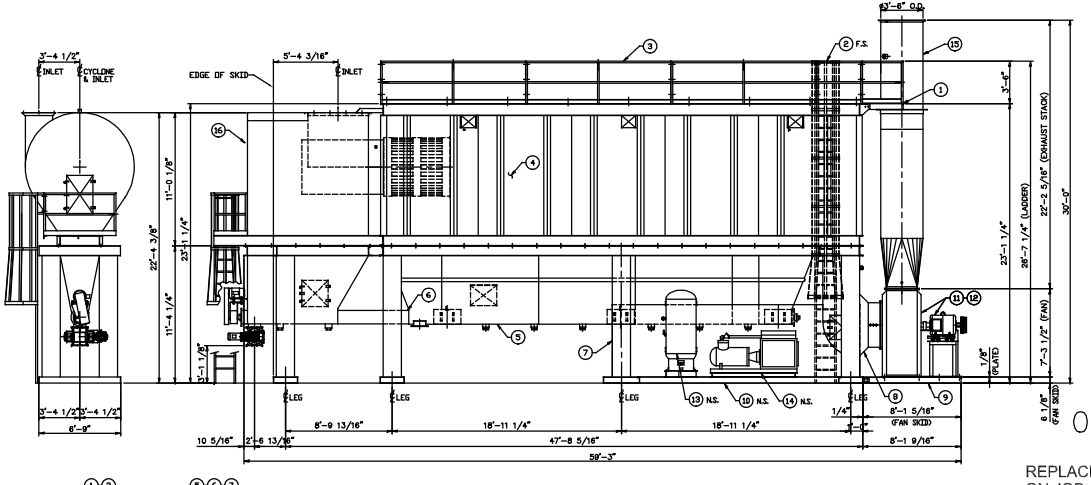
Attach Additional Sheets As Necessary

REVISED

Item	Qty	Part No.	Description	Weight
XXXX	XXX	BH00340A01	BREAKDOWN 3001	33542.8
1	1	BH00188A01	STACK SAMPLING PLATFORM	379.9
2	1	ES00011A01	CAGED LADDER WELDMENT	509.4
3	1	BH00103A04	HANDRAIL ASS'Y (12-MOD.)	1041.8
4	1	BH00181A02	BAGHOUSE MAIN WELDMENT	31611.7
XXXX	XXX	BH00340A02	BREAKDOWN 3002	19446.6
5	1	BH00105A07	BAGHOUSE HOPPER WELDMENT	6382.1
6	1	BH00107A02	B/H HOPPER SCREW ASS'Y	134.9
7	1	BH00106A02	SUPPORT FRAME WELDMENT	8475.7
8	1	BH00052A01	FAN INLET DUCT WELDMENT	1682.5
9	1	FA00055A01	EXHAUST FAN SKID	511.9
10	1	BH00104A03	DUST SHIELD & SKID ASS'Y	2319.5

Item	Qty	Part No.	Description	Weight
XXXX	XXX	BH00340A03	BREAKDOWN 3003	4174.1
11	1	FA00069A04	49" SERIES 40C FAN ASS'Y	4174.1
XXXX	XXX	BH00340A04	BREAKDOWN 3004	3406.0
12	1	FA00056A01	250 HP EXHAUST FAN DRIVE	3406.0
XXXX	XXX	BH00340A05	BREAKDOWN 3005	1747.3
13	1	BH00021A02	AIR SCHEMATIC (60 H.P.)	1635.1
14	1	BH00022A01	50&60 HP COMPRESSOR SKID	112.2
XXXX	XXX	BH00340A06	BREAKDOWN 3025	2039.7
15	1	FA00054A01	EXHAUST STACK (3'-6" DIA)	2039.7
XXXX	XXX	BH00340A07	BREAKDOWN 3201	14147.5
16	1	CY00078A52	CYCLONE SIDE ELEVATION	14147.5

Item	Qty	Part No.	Description	Weight
XXXX	XXX	BH00340A50	BAGHOUSE SIDE ELEVATION	7650.4.0
51	1	BH00340A01	BREAKDOWN 3001	33542.8
52	1	BH00340A02	BREAKDOWN 3002	19446.6
53	1	BH00340A03	BREAKDOWN 3003	4174.1
54	1	BH00340A04	BREAKDOWN 3004	3406.0
55	1	BH00340A05	BREAKDOWN 3005	1747.3
56	1	BH00340A06	BREAKDOWN 3025	2039.7
57	1	BH00340A07	BREAKDOWN 3201	14147.5



A01 (1,2,3,4) BREAKDOWN 3001
A02 (5,6,7,8,9,10) BREAKDOWN 3002
A03 (11) BREAKDOWN 3003
A04 (12) BREAKDOWN 3004
A05 (13,14) BREAKDOWN 3005
A06 (15) BREAKDOWN 3025
A07 (16) BREAKDOWN 3201
A50 (51,52,53,54,55,56,57) BAGHOUSE SIDE ELEVATION

for BURLINGTON

03-201-3001 / /04

REPLACED BY BH008770A ON JOB #17-170

NO	REVISION	APPR	BY	DATE

ASTEC INDUSTRIES, INC.
P.O. BOX 72787 • 4101 JEROME AVENUE • CHATTANOOGA, TN 37407

CUSTOMER: HIGHLAND PAVING COMPANY

PART NAME: BAGHOUSE SIDE ELEVATION

MODEL: RBH-51-12 W/69' x 10' LG. HORIZ. CYCLONE

DRN: SCOTT FUNDERBURK | ISSUED | APPR | DATE: 12/23/2003

JOB NO: 03-201 | SHEET | SCALE: 1/4"=1'-0" | DRAWING NO: BH00340 | REV: 00

FIELD PRINT

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BAGHOUSE GROUP - FOR APPROVAL

Ronny L. Funderburk	10:15 am	1/7/2003
SUBMITTED BY	DATE	DATE SUBMITTED
	/ /	/ /
APPROVED BY	DATE	DATE SUBMITTED