NORTH CAROLINA DIVISION OF AIR QUALITY

Air Permit Review

Region: Winston-Salem Regional Office

County: Caswell

NC Facility ID: 1700016

Inspector's Name: To be assigned Date of Last Inspection: N/A Compliance Code: N/A

Issue Date: XX/XX/XXXX

Facility Data

Applicant (Facility's Name): Carolina Sunrock LLC - Burlington North

Facility Address: 12971 S NC Highway 62

Burlington, NC 27127

SIC: 2951 / Paving Mixtures and Blocks

NAICS: 324121 / Asphalt Paving Mixture and Block Manufacturing

Facility Classification: Before: Permit Pending After: Synthetic Minor

Fee Classification: Before: N/A After: Synthetic Minor

Permit Applicability (this application only)

SIP: Yes

NSPS: Yes (40 CFR 60, Subparts I and OOO)

NESHAP: No PSD: No

PSD Avoidance: Yes (SO₂)

NC Toxics: Yes (2D .1100 and 2Q .0711)

112(r): No

Other: Recycled Fuel Oil

| ree Classification: De | ciore: N/A Aiter: | Synthetic Millior | | |
|------------------------|--------------------|--------------------|---------------------------------------|--|
| Contact Data | | Application Data | | |
| Facility Contact | Authorized Contact | Technical Contact | | |
| - | | | Application Number: 1700016.19A | |
| Scott Martino | Gregg Bowler | Scott Martino | Date Received: 09/17/2019 | |
| Compliance Manager | CFO | Compliance Manager | Application Type: Greenfield Facility | |
| (984) 202-4761 | (919) 747-6400 | (984) 202-4761 | Application Schedule: State | |
| 200 Horizon Drive | 200 Horizon Drive | 200 Horizon Drive | Existing Permit Data | |
| Suite 100 | Suite 100 | Suite 100 | Existing Permit Number: N/A | |
| Raleigh, NC 27615 | Raleigh, NC 27615 | Raleigh, NC 27615 | Existing Permit Issue Date: N/A | |
| | | | Existing Permit Expiration Date: N/A | |
| | | | | |

Review Engineer: Leo L. Governale, P.E.

Review Engineer's Signature:

Date:

Comments / Recommendations:

Issue Permit Number: 10628R00
Permit Issue Date: XX/XX/XXXX
Permit Expiration Date: XX/XX/XXXX

I. PURPOSE OF APPLICATION

On September 17, 2019, WSRO-DAQ received an application package from Carolina Sunrock LLC, requesting an Air Permit for a new facility located at 12971 S NC Highway 62, Burlington, NC. Included in the submittal were the appropriate A, B, C and D forms along with supporting documentation and a check in the amount \$400, the application fee required for a Synthetic Minor facility. The initial submittal also included a copy of a transmittal letter to the Caswell County Planning Department (date-stamped received by the County on September 5, 2019) requesting a "Determination of Compliance with the Caswell County zoning ordinance regarding the location's zoning status." It is noted that the site is located in an area without zoning and DAQ did not receive a determination from the Caswell County Planning Department; therefore, the applicant is required to publish a legal notice in accordance with 2Q .0113. The Applicant was notified of this requirement via email from Davis Murphy of the WSRO to Scott Martino, Compliance Manager, on November 26, 2019.

The contact information provided in the application was created in the IBEAM database. Carolina Sunrock LLC is duly registered under this name with the North Carolina Secretary of State (NCSOS) – Division of Corporations and holds a current-active status, as verified by this reviewer via online search of the NCSOS database.

Application Chronology

| Date | Event | Comment | |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--|
| September 17, 2019 | Application received | Application deemed complete; Clock started | |
| September 30, 2019 | Request for additional information; need completed C1 forms for Bagfilters | Clock stopped | |
| October 4, 2019 | Completed C1 forms received | Clock restarted | |
| November 26, 2019 | Applicant notified via email that a legal notice is required per 2Q .0113 because facility is located in an area without zoning | Clock stopped | |
| January 11, 2019 | Legal notice compliance in accordance with 2Q .0113 fulfilled* | Clock restarted | |
| January 15, 2020 | Request for additional information re: revised equipment listing | Clock stopped | |
| January 22, 2020 | Additional information received | Clock restarted | |
| February 13, 2020 | Facility notified that the draft permit will be noticed to the public and posted for a public comment period | d Clock stopped | |
| XX/XX/XXXX | Permit issued | | |

^{*} The requisite sign was posted on the property on December 2, 2019 and the legal notice was published in The Caswell Messenger on December 4, 2019. Chris Bryant of the WSRO verified that the sign was posted, via site visit on December 18, 2019.

II. DESCRIPTION OF BUSINESS

Information contained in the application states that this facility will include a Drum Mix Asphalt Plant (250 tons per hour maximum capacity), RAP Crushing System and a Truck Mix Concrete Batch Plant (120 cubic yards per hour). Expected operating schedule is 10 hr/day, 6 days/wk and 50 wk/yr (3,000 hr/yr). The Permitted Emission Sources and Insignificant/Exempt Activities are listed in the following tables:

Permitted Emission Sources

| | Termitted Emission Sources | | | |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------|--|
| Emission Source ID | Emission Source Description | Control System ID | Control System Description | |
| | One Drum Mix Asphalt Plant (250 tons per hour maximum | capacity), consis | ting of: | |
| HMA-1 (NSPS-I) | Propane/Natural Gas/No. 2 Fuel Oil/Recycled No. 2 Fuel Oil/Recycled No. 4 Fuel Oil-fired Drum-type Hot Asphalt Plant (80 million Btu per hour maximum heat input capacity) | HMA-CD1 | Cyclone in series with Bagfilter* (8,968 square feet of filter area) | |
| HMA-Silo1 | Hot Mix Asphalt Storage Silo (150 ton capacity) | N/A | N/A | |
| HMA-Silo2 | Hot Mix Asphalt Storage Silo (150 ton capacity) | N/A | N/A | |
| HMA-Silo3 | Hot Mix Asphalt Storage Silo (200 ton capacity) | N/A | N/A | |
| HMA-Silo4 | Hot Mix Asphalt Storage Silo (200 ton capacity) | N/A | N/A | |
| HMA-Silo5 | Hot Mix Asphalt Storage Silo (200 ton capacity) | N/A | N/A | |
| HMA-LO1 | Asphalt Loadout Operation Silo 1 | N/A | N/A | |
| HMA-LO2 | Asphalt Loadout Operation Silo 2 | N/A | N/A | |
| HMA-LO3 | Asphalt Loadout Operation Silo 3 | N/A | N/A | |
| HMA-LO4 | Asphalt Loadout Operation Silo 4 | N/A | N/A | |
| HMA-LO5 | Asphalt Loadout Operation Silo 5 | N/A | N/A | |
| HMA-H1 | Natural Gas/No. 2 Fuel Oil-fired Liquid Asphalt Cement Heater (1.2 million Btu per hour maximum heat input) | N/A | N/A | |
| НМА-Н2 | Natural Gas/No. 2 Fuel Oil-fired Liquid Asphalt Cement Heater (1.1 million Btu per hour maximum heat input) | N/A | N/A | |

^{*} This control device a "packaged" unit that consists of a Bagfilter preceded by a Cyclone. According to information provided via email dated January 8, 2020 from Scott Martino, Environmental Compliance Manager, the Cyclone "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[s] 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." See Attachment A1.

Permitted Emission Sources (continued)

| Emission Source ID | Emission Source Description | Control System ID | Control System Description |
|----------------------------------|---------------------------------------------------------------|----------------------|------------------------------------|
| RAP Crushing System consisting o | | : | |
| RAP-CRSH [NSPS-OOO] | RAP Impact Crusher (65 tons per hour maximum rated capacity) | N/A | N/A |
| RAP-CNV [NSPS-OOO] | Four (4) Conveyors | N/A | N/A |
| RAP-SCN [NSPS-OOO] | 8' x 20' Double Deck Screen | N/A | N/A |
| | Truck Mix Concrete Batch Plant (120 cubic yards per hour maxi | imum capacity), cons | isting of: |
| RM-1 | Cement Storage Silo (200-ton capacity) | | |
| RM-2 | Flyash Storage Silo (150-ton capacity) | DMC CD2 | Bagfilter |
| RM-3 | Truck Loadout Point | RMC-CD2 | (1,433 square feet of filter area) |
| RM-4 | Cement/Flyash Weigh Batcher (25-ton maximum capacity) | | |
| RM-5 | Aggregate Weigh Batcher (50-ton maximum capacity) | N/A | N/A |

Insignificant/Exempt Sources

| Source | Exemption Regulation | Source of TAPs? | Source of Title V Pollutants? |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------|
| IES-1, IES-2 – Two (2) No. 4 Fuel Oil or Used Oil Storage Tanks (20,000 gallon capacity, each) | | | |
| IES-3 – Diesel Fuel Storage Tank (20,000 gallon capacity)* | 2Q .0102 (g)(4) "storage tanks with no applicable requirements other than Stage I controls pursuant to 15A NCAC 02D .0928, | Yes | Yes |
| IES-4 - Liquid Asphalt Storage Tank (30,000 gallon capacity) | Gasoline Service Stations Stage I" | | |
| IES-5 - Liquid Asphalt Storage Tank (20,000 gallon capacity) | | | |

^{*} This tank was inadvertently described as a "Gasoline" Storage Tank in the original application; however, it will actually be used to store "Diesel" Fuel per email dated November 25, 2019 from Scott Martino. See Attachment A2.

III. REVIEW OF REGULATIONS

The following North Carolina Administrative Code Title 15A regulations were evaluated under this review:

- 2D .0202 Registration of Air Pollution Sources
- 2D .0503 Particulates from Fuel Burning Indirect Heat Exchangers
- 2D .0506 Particulates from Hot Mix Asphalt (HMA) Plants
- 2D .0510 Particulates from Sand, Gravel, or Crushed Stone Operations
- 2D .0515 Particulates from Miscellaneous Industrial Processes
- 2D .0516 Sulfur Dioxide (SO₂) Emissions from Combustion Sources
- 2D .0521 Control of Visible Emissions (VE)
- 2D .0524 New Source Performance Standards (NSPS)
- 2D .0535 Excess Emissions Reporting and Malfunctions
- 2D .0540 Particulates from Fugitive Dust Emission Sources
- 2D .0605 General Recordkeeping and Reporting Requirements
- 2D .0611 Monitoring Emissions from Other Sources
- 2D .1100 Control of Toxic Air Pollutants (TAPs)
- 2D .1806 Control and Prohibition of Odorous Emissions
- 2Q .0304 Zoning Specific Condition
- 2Q .0315 Synthetic Minor Facilities
- 2Q .0317 Avoidance Condition (PSD and Toxics)
- 2Q .0711 Emission Rates Requiring a Permit

CONTROL DEVICE EVALUATION

Bagfilter HMA-CD1

The proposed Bagfilter, associated with the Hot Mix Asphalt Plant (HMA-1), was evaluated using the NCDENR Bagfilter Evaluation Spreadsheet - Version 3.3, September 23, 1999 (see Attachment B1). The following table lists the characteristics based on the data provided on Form C1.

| Material Controlled | Abrasive Dust |
|-----------------------------|--------------------------------|
| No. of Compartments | 3 |
| No. of Bags per Compartment | 246 |
| Bag Length / Bag Diameter | 120.5 in. / 4 5/8 in. |
| Filter Surface Area | 8,968 ft ² |
| Inlet Air Flow Rate: | 51,111 ACFM |
| Air to Cloth Ratio | 5.70:1 |
| Filter Material | Aramid (Nomex) |
| Max. Operation Temperature | 325 °F |
| Cleaning Procedure | Air Pulse |
| Claimed Capture Efficiency | 99.99% for PM/PM ₁₀ |

According to the spreadsheet, the filtering velocity of 5.7 fpm does not exceed the typical filtering velocity of 10.0 fpm and the filter fabric is appropriate for both the maximum operating temperature and chemical resistance to acids, alkalis and organics. Also, the control efficiency as stated in the application seems reasonable, so the Bagfilter was assessed as an adequate control device. It is noted that, because the air flow rate exceeds 10,000 ACFM, a P.E. seal is required. This was provided on Application Form D5, bearing the seal and signature of Ted S. White, P.E., NC Professional Engineer No. 016884.

Bagfilter RMC-CD2

The proposed Bagfilter, associated with the Concrete Batch Plant, was evaluated using the NCDENR Bagfilter Evaluation Spreadsheet - Version 3.3, September 23, 1999 (see Attachment B2). The following table lists the characteristics based on the data provided on Form C1.

| Material Controlled | Cement/Fly Ash |
|-----------------------------|-----------------------|
| No. of Compartments | 2 |
| No. of Bags per Compartment | 36 |
| Bag Length / Bag Diameter | 114 in. / 8 in. |
| Filter Surface Area | 1,433 ft ² |
| Inlet Air Flow Rate: | 6,500 ACFM |
| Air to Cloth Ratio | 4.54:1 |
| Filter Material | Dacron |
| Max. Operation Temperature | 70 °F |
| Cleaning Procedure | Reverse Flow |
| Claimed Capture Efficiency | 99.9% for PM |

According to the spreadsheet, the filtering velocity of 4.5 fpm does not exceed the typical filtering velocity of 8.0 fpm and the filter fabric is appropriate for both the maximum operating temperature and chemical resistance to acids, alkalis and organics. Also, the control efficiency as stated in the application seems reasonable, so the Bagfilter was assessed as an adequate control device. It is noted that, because the air flow rate does not exceed 10,000 ACFM, a P.E. seal is not required.

2D .0202 - Registration of Air Pollution Sources

This regulation allows the Director to require a facility to report, as in this case, total weights and kinds of air pollution released as well as any other information considered essential in evaluating the potential of the source to cause air pollution. In accordance with this regulation, the facility will be required to submit a CY 20XX Emissions Inventory at least ninety (90) days prior to [DATE to be determined], which is the expiration date of this Air Permit.

It is reasonable to anticipate compliance.

2D .0503 - Particulates from Fuel Burning Indirect Heat Exchangers

This regulation applies to the two (2) Natural Gas/No. 2 Fuel Oil-fired Asphalt Cement Heaters (HMA-H1 and HMA-H2), and it limits particulate emissions according to the following equation:

$$E = 1.09 \times Q^{-0.2594}$$

where: \mathbf{E} = allowable emission limit for particulate matter in lb/MMBtu

Q = maximum total heat input of all fuel burning indirect heat exchangers in MMBtu/hr,

except where the maximum total heat input is ≤ 10 MMBtu/hr, as in this case, then E = 0.60 lb/MMBtu

Using the AP-42 emission factor for Fuel Oil – Tables 1.3-1 and 1.3-2, rev 5/10, and Natural Gas – Table 1.4-2, rev 7/98, the actual emissions rates are calculated as follows:

 $E_{actual-Natural~Gas} = 7.6~lb~PM_{total}/10^6~scf \div 1,020~MMBtu/10^6~scf = \underline{0.007~lb~PM/MMBtu}$ $E_{actual-No.~2~Fuel~Oil} = (2~lb~PM_{filterable} + 1.3~lb~PM_{condensable})/10^3~gallons \div 140~MMBtu/10^3~gallons = \underline{0.024~lb~PM/MMBtu}$

0.007; 0.024 lb PM/MMBtu < 0.60 lb PM/MMBtu \rightarrow O.K.

Based on the foregoing, actual emissions for combustion of No. 2 Fuel Oil and Natural Gas are less than the allowable emissions limit; therefore, compliance is demonstrated.

2D .0506 - "Particulates from Hot Mix Asphalt Plants"

This regulation is applicable to both filterable and condensable particulate emissions from the plant. It limits the allowable particulate matter emissions from Hot Mix Asphalt Plants as calculated by the following equations:

E = 4.9445(P)^{0.4376} if P < 300 tons/hr E = 60.00 if P \ge 300 tons/hr

where: P = the process rate in tons/hr

E = the maximum allowable emission rate for PM in lb/hr

Since the permitted process rate is 250 tons per hour, this plant's allowable PM emission rate is calculated as follows:

$$E = 4.9445(250)^{0.4376} = 55.4 \text{ lb PM/hr}$$

Using AP-42 emission factor for Drum Mix Asphalt Plants (Table 11.1-3, 3/04), the emission factor total PM for a Drum Mix HMA plant controlled by a fabric filter is 0.033 lb PM/ton of asphalt; therefore, the actual expected PM emission rate is calculated as follows:

PM = 0.033 lb PM/ton x 250 ton/hr = 8.25 lb PM/hr

8.25 lb PM/hr < 55.4 lb PM/hr → O.K.

Also, this regulation requires requires that visible emissions from stacks or vents at a HMA plant shall be less than 20% opacity when averaged over a six-minute period and that fugitive dust shall be controlled as required by 2D .0540 (discussed below). A source test on the Drum-type Hot Asphalt Plant (HMA-1) controlled by a Bagfilter (HMA-CD1) will need to be conducted to determine the HMA plant's particulate matter emission rate. See 2D .0605 of this review for more details regarding testing. Per the Memorandum "Hot Mix Asphalt Plant Performance Testing/Emission Testing Frequency" issued August 13, 2013, by Sheila Holman, former DAQ Director, the facility must test for compliance at least once every ten (10) years. If the emission sources operate according to manufacturer specifications and with the permitted bagfilter, the sources should be in compliance with this regulation.

2D .0510 – Particulates from Sand, Gravel, or Crushed Stone Operations

This facility, engaging in sand, gravel, recycled asphalt pavement (RAP), or crushed stone operations, must 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. This is in order to prevent exceeding the ambient air quality standards beyond the property line for particulate matter. Fugitive dust shall be controlled as required by 2D .0540 as discussed below. Process generated emissions from crushers, conveyors, screens, and transfer points shall be controlled so that opacity standards required by 2D .0521 and 2D. 0524, as applicable, are not exceeded. It seems reasonable to anticipate compliance.

2D .0515 - Particulates from Miscellaneous Industrial Processes

This regulation is applicable to particulate matter (PM) emissions from all Concrete Batch Plant sources at this facility and it limits the allowable PM emissions as derived by the following equations:

 $E = 4.10 (P)^{0.67}$ if $P \le 30$ tons per hour

 $E = 55.0 (P)^{0.11}-40$ if P > 30 tons per hour

where: P = the process rate in tons per hour, and

E = maximum allowable emission rate of PM in pounds per hour

The NCDENR Concrete Batch Plant Emissions Calculator Spreadsheet, using emission factors from AP-42 Table 11.12-2 and DAQ Memorandum for Ready-Mix Concrete Facilities, dated June 5, 2005 (as indicated in the table footnote⁴) were used to calculate the uncontrolled and controlled emissions rates and the following table indicates that the facility can comply with this regulation when the Bagfilter (RMC-CD2) is installed and properly operated and maintained on the respective emission sources. Note that the process weight rates for the Cement Silo, Flyash Silo, Truck Loadout Point and Aggregate Weigh Batcher were taken from information provided with the application and presented on the aforementioned NCDENR Spreadsheet. Process weight rate for the Cement/Fly Ash Weigh Batcher was calculated by this reviewer as indicated in the table footnotes.

| Emission Source | Process Weight Rate (P) [tons/hr] | Allowable Emissions Rate (E) 2D .0515 Limit [lb PM/hr] | Expected Controlled Actual Emissions Rate ³ [lb PM/hr] | Expected Uncontrolled Actual Emissions Rate ³ [lb PM/hr] |
|------------------------------------|-----------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Cement Silo (RM-1) | 25.001 | 35.43 | 0.027 | 27.00 ⁴ |
| Fly Ash Silo (RM-2) | 25.00 ¹ | 35.43 | 0.079 | 79.04 |
| Truck Loadout Operation (RM-3) | 240.961 | 60.55 | 1.0015 | 1,001.04 |
| Cement/Flyash Weigh Batcher (RM-4) | 35.76 ² | 41.51 | 1.0015 | 1,001.04 |
| Aggregate Weigh Batcher (RM-5) | 205.201 | 58.79 | N/A | 0.985^{6} |

¹ Taken from information provided with the application as shown on the NCDENR Spreadsheet. See Attachment C.

2D .0516 - Sulfur Dioxide Emissions from Combustion Sources

This regulation applies to the Propane/Natural Gas/No. 2 Fuel Oil/Recycled No. 2 Fuel Oil/Recycled No. 4 Fuel Oil-fired Drum-type Asphalt Plant (HMA-1) and the two (2) Natural Gas/No. 2 Fuel Oil-fired Asphalt Heaters (HMA-H1 and HMA-H2), and it limits the emissions of sulfur dioxide (SO₂) from any source of combustion that is discharged from any vent, stack, or chimney to 2.3 lb SO₂/MMBtu input.

For the drum dryer/mixer associated with the Asphalt Plant (HMA-1), the SO₂ emission rate is equal to 0.011 lb/MMBtu when combusting Natural Gas, 0.28 lb/MMBtu when combusting No. 2 Fuel Oil, and 0.262 lb/MMBtu when combusting No. 4 Fuel Oil, as demonstrated below. It is assumed that No. 4 Fuel Oil has the same emission factor as Waste Oil and the emission factor for Propane is similar to that for Natural Gas.

 $^{^{2}}$ 120 yd 3 /hr × (448 lb Cement/yd 3 + 148 lb Flyash/yd 3) ÷ 2,000 lb/ton = 35.76 ton/hr.

³ Emission factors for Cement Silo and Flyash Silo are from AP-42 Table 11.12-2. Emission factors for Truck Loadout Operation and Cement/Flyash Weigh Batcher are from DAQ Memorandum for Ready-Mix Concrete Facilities, dated June 5, 2005. Aggregate Weigh Batcher emissions are uncontrolled.

⁴ Expected Uncontrolled Emissions Rate = Expected Controlled Emissions Rate ÷ (1 – 0.999 Bagfilter Control Efficiency)

⁵ As noted in the spreadsheet "Truck/Central Mix emission factors include emissions from cement and supplement weigh hoppers," and so, to be conservative, the Cement/Flyash Weigh Batcher emission rate is shown as the same as the Truck Loadout emission rate.

⁶ 205.20 tons/hr x 0.0048 lb PM/ton (uncontrolled PM emission factor from AP-42 Table 11.12-2) = 0.98 lb PM/hr

Natural Gas (AP-42, Table 11.1-7)

 $SO_2 = 0.0034$ lb/ton of asphalt produced \times 250 ton/hr \div 80 MMBtu/hr = 0.011 lb/MMBtu < 2.3 lb/MMBtu \rightarrow O.K.

No. 2 Fuel Oil (NCDENR Asphalt Emissions Calculator Spreadsheet Revision G, 08/30/2019)

 $SO_2 = 0.0897$ lb/ton of asphalt produced \times 250 ton/hr \div 80 MMBtu/hr = 0.28 lb/MMBtu \prec 2.3 lb/MMBtu \rightarrow O.K.

No. 4 Fuel Oil (NCDENR Asphalt Emissions Calculator Spreadsheet Revision G, 08/30/2019)

 $SO_2 = 0.0837$ lb/ton of asphalt produced \times 250 ton/hr \div 80 MMBtu/hr = 0.262 lb/MMBtu < 2.3 lb/MMBtu \rightarrow O.K.

For the two (2) Natural Gas/No. 2 Fuel Oil-fired Asphalt Heaters (HMA-H1 and HMA-H2), the SO₂ emission rate is equal to 0.00059 lb/MMBtu when combusting Natural Gas and 0.51 lb/MMBtu when combusting No. 2 Fuel Oil as demonstrated below. The first equation assumes the sulfur content of Natural Gas is 2,000 grains/10⁶ scf, and the average heating value of Natural Gas is 1,020 Btu/scf. The second equation assumes a Fuel Oil sulfur content (S) of 0.5% by weight, and the average heating value of No. 2 Fuel Oil is 140,000 Btu/gal. Compliance is demonstrated.

Natural Gas (AP-42, Table 1.4-2)

 $SO_2 = 0.6 \text{ lb/}10^6 \text{ scf} \times (10^6 \text{ scf/}1,020 \text{ MMBtu}) = 0.00059 \text{ lb/MMBtu} < 2.3 \text{ lb/MMBtu} \rightarrow \text{O.K.}$

No. 2 Fuel Oil (AP-42, Table 1.3-1)

 $SO_2 = 142 \times S \text{ (S} = 0.5) \text{ lb/}10^3 \text{ gal} \times (10^3 \text{ gal/}140 \text{ MMBtu}) = 0.51 \text{ lb/MMBtu} < 2.3 \text{ lb/MMBtu} \rightarrow \text{O.K.}$

2D .0521 - Control of Visible Emissions

This regulation applies to all fuel burning operations and industrial processes where visible emissions can reasonably be expected to occur and limits visible emissions to 40% opacity for sources manufactured as of July 1, 1971 and to 20% opacity for sources manufactured after July 1, 1971, when averaged over a six minute period. The visible emissions from the HMA Plant (HMA-1) is subject to both 2D .0506 and 2D .0524, and the RAP Operations are subject to 2D .0524. Therefore, this rule regulates visible emissions from the rest of the emission sources. Because all sources are new, it is reasonable to assume that they were manufactured after July 1, 1971, and so the 20% opacity limit applies. Compliance is expected with proper operation and maintenance of the subject equipment and associated control devices, where applicable.

2D .0524 – New Source Performance Standards (NSPS)

This facility is subject to 40 CFR Part 60, Subpart I – "Standards of Performance for Hot Mix Asphalt Plants," and it applies to particulate emissions from hot mix asphalt facilities that commence construction or modification after June 11, 1973, as in this case. Within 15 days after start-up of the HMA plant, the Permittee is required to notify the DAQ of the start-up date in writing. The facility shall not discharge into the atmosphere from the affected source any gases which contain particulate matter in excess of 90 mg/dscm (0.04 gr/dscf) or exhibit 20% opacity or greater. A source test on the HMA plant (HMA-1), controlled by a Bagfilter (HMA-CD1) will need to be conducted to determine the HMA plant's particulate matter and visible emissions. See 2D .0605 below for additional details regarding testing. It is reasonable to anticipate compliance.

The facility is also subject to 40 CFR 60, Subpart OOO for "Nonmetallic Mineral Processing Plants." This rule applies to each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck, or railcar loading station (sources) at fixed or portable nonmetallic mineral processing plants that commenced construction, reconstruction, or modification after August 31, 1983, except, in part, to fixed plants with capacities of 25 tons per hour or less or portable plants with capacities of 150 tons per hour or less. Also, crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this Subpart. Therefore, the RAP Crushing System, comprising of the Crusher, four (4) Conveyors and Screen (RAP-CRSH, RAP-CNV, and ES-SCN, respectively) is subject to this rule. Within 15 days after start-up of each source, the facility is required to notify the DAQ of the start-up date in writing. For affected sources that commenced construction, modification, or reconstruction after August 31, 1983, but before April 22, 2008, visible emissions are limited to 15% opacity for crushers and 10% opacity for fugitive emissions from conveyor belts, screening operations, and other affected sources.

For sources constructed, modified, or reconstructed on or after April 22, 2008, visible emissions are limited to 12% opacity for crushers and 7% opacity for fugitive emissions from conveyor belts, screening operations, and other affected sources. Monthly inspection requirements apply for affected sources that were constructed on or after April 22, 2008, and that use wet suppression to control emissions. A source test using EPA Method 9 on the crusher, screen, and conveyor will need to be conducted to determine their compliance with the respective opacity limits. It is reasonable to anticipate compliance.

2D. 0535 – Excess Emissions Reporting and Malfunctions

This facility is subject to this regulation. In accordance with section (f) of this rule, the Permittee must notify DAQ in the event of a source of excess emissions that last for more than four (4) hours and that result from a malfunction, a breakdown of process or control equipment, or any other abnormal conditions. It is reasonable to anticipate compliance.

2D .0540 - Particulates from Fugitive Dust Emission Sources

This facility is subject to this regulation. It applies to particulate emissions that do not pass through a process stack or vent and are generated within plant property boundaries. If fugitive dust emissions cause excessive visible emissions beyond property boundaries, or cause substantive complaints, the Director may require the facility to develop, implement, and comply with a fugitive dust control plan. It is reasonable to anticipate compliance.

2D .0605 – General Recordkeeping and Reporting Requirements

This regulation allows the DAQ to require any monitoring, recordkeeping, reporting, or testing it deems necessary for the facility to demonstrate compliance with an emission standard or permit condition. As mentioned previously, a memorandum titled "Hot Mix Asphalt Plant Performance Testing/Emission Testing Frequency" was issued August 13, 2013, by Sheila Holman, former DAQ Director. This requires all hot mix asphalt plants to test for compliance with 2D .0506 at least once every 10 years. The results also happen to reinforce compliance with 2D .0524 (NSPS Subpart I). The stack testing is for filterable and condensable particulate matter using EPA Methods 5 and 202, respectively. Additionally, EPA Method 9 is required for visible emissions from the HMA plant, as this is the initial test. The tests must be conducted within 60 days after achieving the maximum production rate at which the affected source will be operated, but not later than 180 days after initial startup of the source. The results of the test for this facility must be submitted to the DAQ-WSRO 60 days after the testing. In accordance with 2D .2602, a testing protocol must be provided to DAQ prior to testing. Protocols are not required to be approved before the test date, but those that are received at least 45 days prior to the test date will be reviewed. The facility must provide at least 30 days notice in written form of any required performance testing, to provide DAQ the opportunity to have an observer present. It is reasonable to anticipate compliance.

2D .0611 - Monitoring Emissions from Other Sources

This regulation applies to the Cyclone in series with Bagfilter (HMA-CD1) associated with the Drum Mix Asphalt Plant and Bagfilter (RMC-CD2) associated with the Truck Mix Concrete Batch Plant. It allows the Director to require the facility to conduct monitoring in order to demonstrate compliance with rules in Subchapters 2D and 2Q and is the basis for requiring control device inspections in the Air Permit. This facility will be required to perform periodic inspections and maintenance (I&M) as recommended by the manufacturer. At a minimum, this facility will be required to perform an annual internal inspection of each bagfilter. Records of all inspections and maintenance with dates and descriptions should be kept in a log book (written or electronic format) located on-site. This log book should be made available to DAQ personnel upon request. It is reasonable to anticipate compliance.

2D .1100 - Control of Toxic Air Pollutants (TAPs)

A toxics review has been triggered due to the addition of the HMA plant and associated sources that emit toxic air pollutants (TAPs). The facility modeled for Arsenic, Benzene, Cadmium, Formaldehyde, Mercury and Nickel due to expected actual emissions of these TAPs being above their respective toxic permit emission rates (TPERs) listed at 2Q .0711. The sources of these TAP emissions are the HMA Plant (HMA1), the five (5) HMA Storage Silos (HMA-Silo1 through HMA-Silo5), the Asphalt Loadout Operations (HMA-LO1 through HMA-LO5), the two (2) Asphalt Cement Heaters (HMA-H1 and HMA-H2), and the Concrete Batch Plant. Note that the heaters cannot be exempt from toxics per 2Q .0702 (a)(18), because they are combustion sources permitted after July 10, 2010. TAPs are also expected to be emitted from the exempt storage tanks containing No. 4/Used Oil/Diesel Fuel¹ (IES-1, IES-2 and IES-3) and Liquid Asphalt² (IES-4 and IES-5), but these sources currently qualify for exemption from toxics rules per 2Q .0702 (a)(19)(B) for "storage tanks used only to store: fuel oils [...] or petroleum products with a true vapor pressure (TVP) less than 1.5 pounds per square inch absolute."

On November 4, 2019, Nancy Jones, Meteorologist, Air Quality Analysis Branch (AQAB) issued a Memorandum regarding the analysis stating that the modeling adequately demonstrates compliance, on a source-by-source basis, for all toxics modeled. The memorandum was revised on January 21, 2020 due to adjustments made to the maximum concentration values for Cadmium, Mercury and Nickel. The following table illustrates the maximum impacts from the modeling based on optimized emission rates. The modeled emission rates and the potential emission rates are indicated for each of the emission sources.

¹ Distillate Fuel Oil has a TVP of 0.062 kPa (0.0090 psi) at 700 F (AP-42 7.1, Organic Liquid Storage Tanks, rev. 11/06, Table 7.1-2).

² Liquid asphalt has a TVP less than 0.12 kPa (0.017 psi) at 325° F (AP-42 11.1 HMA plants, background document, 2/2004, p. 4-82).

| Emission(s) Source | TAP (CAS #) | Potential Emission Rates | Modeled Emission Rates | Averaging Period | Maximum Concentration [μg/m³] | AAL [μg/m³] | AAL [%] |
|-----------------------------------------------------------------------------|----------------------------------------|----------------------------------|---------------------------|-------------------------------------------------|-------------------------------------|-------------|------------|
| Propane/Natural Gas/No. 2 Fuel | Arsenic unlisted compounds (ASC-other) | 1.23 lb/yr ¹ | 14.37 lb/yr | | 0.0020 | 0.0021 | 95 |
| Oil/Recycled No. 2 | Benzene (71-43-2) | 854.1 lb/yr | 7,752.6 lb/yr | Annual | 0.11 | 0.12 | 95 |
| Fuel Oil/Recycled No. 4 Fuel Oil-fired | Cadmium metal (7440-43-9) | 0.90 lb/yr ¹ | 62.02 lb/yr | | 0.0052 | 0.0055 | 95 |
| Drum-type | Formaldehyde (50-00-0) | 0.775 lb/hr | 40.5 lb/hr | 1-hr | 143 | 150 | 95 |
| Hot Asphalt Plant | Mercury vapor (7439-97-6) | 0.0156 lb/24-hr | 0.581 lb/24-hr | 24-hr | 0.57 | 0.6 | 95 |
| (HMA-1) | Nickel metal (7440-02-0) | 0.379 lb/24-hr ¹ | 5.904 lb/24-hr | 24-nr | 5.7 | 6.0 | 95 |
| Truck Mix Concrete Batch Plant | Arsenic unlisted compounds (ASC-other) | 0.577 lb/yr ² | 6.77 lb/yr | Annual | | | |
| (RM-1, RM-2, | Cadmium metal (7440-43-9) | 0.0044 lb/yr ² | 0.301 lb/yr | | | | |
| RM-3 and RM-4) | Nickel metal (7440-02-0) | 0.0046 lb/24-hr ² | 0.072 lb/24-hr | 24-hr | | | |
| | Arsenic unlisted compounds (ASC-other) | 0.034 lb/yr ^{3,4} | 0.493 lb/yr | | | | |
| Natural Gas/No. 2 | Benzene (71-43-2) | 0.17 lb/yr ^{3,4} | 0.194 lb/yr | Annual | | | |
| Fuel Oil-fired | Cadmium metal (7440-43-9) | 0.025 lb/yr ^{3,4} | 2.17 lb/yr | | | | |
| Asphalt Cement Heater | Formaldehyde (50-00-0) | 0.00041 lb/hr ^{3,4} | 0.0144 lb/hr | 1-hr | | | |
| (HMA-H1) | Mercury vapor (7439-97-6) | 0.000086 lb/24-hr ^{3,4} | 0.0032 lb/24-hr | | | | |
| | Nickel metal (7440-02-0) | 0.000086 lb/24-hr ^{3,4} | 0.0013 lb/24-hr | 24-hr | | | |
| | Arsenic unlisted compounds (ASC-other) | 0.034 lb/yr ^{3,4} | 0.452 lb/yr | See above – the above are presented as facility | | | |
| Natural Gas/No. 2 | Benzene (71-43-2) | 0.17 lb/yr ^{3,4} | 0.177 lb/yr | Annual | | | |
| Fuel Oil-fired | Cadmium metal (7440-43-9) | 0.025 lb/yr ^{3,4} | 1.99 lb/yr | | | | |
| Asphalt Cement Heater (HMA-H2) | Formaldehyde (50-00-0) | 0.00038 lb/hr ^{3,4} | 0.0132 lb/hr | 1-hr | | | |
| | Mercury vapor (7439-97-6) | 0.000079 lb/24-hr ^{3,4} | 0.00295 lb/24-hr | 24-hr | | | |
| | Nickel metal (7440-02-0) | 0.000079 lb/24-hr ^{3,4} | 0.0012 lb/24-hr | 24-111 | | | |
| Five Hot Mix Asphalt Storage Silos (HMA-Silo 1 through HMA-Silo 5) | Benzene (71-43-2) | 13.32 lb/yr ^{3,5} | 42.57 lb/yr | Annual | | | |
| and Asphalt Loadout Operation Silos (HMA LO1 through HMA-LO5-5). | Formaldehyde (50-00-0) | 0.0219 lb/hr ^{3,5} | 0.0466 lb/hr | 1-hr | | | |

¹ Control device HMA-CD1 is associated with this source; therefore, the potential emission rates shown for Arsenic, Cadmium and Nickel are controlled. Emission rates for all other pollutants are uncontrolled.

Note that, in order to keep potential Benzene emissions below the modeled rates for the Asphalt Cement Heaters (HMA-H1 and HMA-H2), the No. 2 Fuel Oil consumption shall be less than 60,000 gallons per consecutive 12-month period per Heater. Also, the Permittee will be required to record monthly and total annually the No. 2 Fuel Oil usage, in gallons, per heater. These restrictions and recordkeeping requirements will be placed in the permit under this condition. The remaining sources' potential emissions are less than the modeled emissions rate, so no additional monitoring, recordkeeping, or reporting are necessary to demonstrate compliance with these limits.

² Control device RMC-CD2 is associated with this source; therefore, the potential emission rates shown are controlled.

³ There are no control devices associated with these sources; therefore, the potential emission rates shown are uncontrolled.

⁴ In order to keep the Benzene emissions below the modeled rates, the No. 2 Fuel Oil usage will be limited to a maximum of 60,000 gal/yr for each source.

⁵ The potential emission rates shown represent those expected from one (1) Asphalt Storage Silo, plus one (1) Asphalt Loadout Operation Silo as only one (1) of each can be operated at the same time. See Attachment A1 for email correspondence dated February 13, 2020 from Scott Martino.

2D .1806 - Control and Prohibition of Odorous Emissions

This regulation requires the facility to utilize management practices or odor control equipment sufficient to prevent odorous emissions from causing or contributing to objectionable emissions beyond the facility's boundaries. It is reasonable to anticipate compliance.

2Q .0304 – Zoning Specific Condition

This regulation is the basis for requesting that, prior to construction or operation of the facility under this permit, as prescribed by NCGS 143-215.108(f), "An applicant for a permit under this section for a new facility or for the expansion of a facility permitted under this section shall request each local government having jurisdiction over any part of the land on which the facility and its appurtenances are to be located to issue a determination as to whether the local government has in effect a zoning or subdivision ordinance applicable to the facility and whether the proposed facility or expansion would be consistent with the ordinance." As mentioned under Section I. of this review, this site is located in an area without zoning and the Applicant was required to publish a legal notice pursuant to 15A NCAC 02Q .0113. On December 4, 2019, the required legal notice was published in The Caswell Messenger, a local publication that services the area of the proposed facility. In addition, a sign was posted on the property on December 2, 2019. It is DAQ policy to include a permit condition in permits for facilities located in areas without zoning requiring compliance with all lawfully adopted local ordinances that apply to the facility at the time of construction or operation of the facility.

2Q .0315 - Synthetic Minor Facilities

The facility is subject to this regulation. This regulation allows the facility to choose to have terms and conditions placed in their permit to restrict operation to limit the potential for the facility to emit in order to avoid Title V applicability and thus be classified as a Synthetic Minor facility. The facility has the potential without controls and limits to emit more than 100 tons of CO and SO₂ each per year. To ensure that the facility emits less than 100 tons of CO and SO₂ per year, the Permittee has requested that production be limited to 500,000 tons of asphalt per consecutive 12 month period (see Attachment A2 for email dated December 19, 2019 from Scott Martino requesting this production limit). According to the DAQ Asphalt Emissions Calculator Spreadsheet, Revision G – 08/30/2019 (Attachment E1), based on a maximum annual asphalt production of 500,000 tons per year and a fuel sulfur content of 0.5% for Recycled No. 4 Fuel Oil (worst case), this facility would remain under the Synthetic Minor limits for SO₂ and CO of 100 tons per year, each. Therefore, the requested annual production limit is acceptable. This production limit will be placed in the permit under the Synthetic Minor condition.

The Permittee will be required to record monthly and total annually the amount of asphalt produced and keep fuel supplier certifications on-site and made available to DAQ personnel upon request. Within 30 days after each calendar year, regardless of actual emissions, the following data, including monthly and 12 month totals for the previous 12 month totals, should be reported to the Regional Supervisor: CO and SO₂ emissions, monthly asphalt production, and a summary of the sulfur content of the fuel oils from the fuel certification records for the previous 12 months. It is noted that the above production limit is required only to keep CO emissions below 100 tons per year. Compliance with SO₂ emission limitations is achieved by burning No. 2 Fuel Oil with a maximum sulfur content of 0.5%. It is reasonable to anticipate compliance.

2Q .0317 - Avoidance Conditions (2D .0530 PSD - Sulfur Dioxide)

This facility has the potential to emit more than 250 tons per year of sulfur dioxide (SO₂) emissions after controls (see SECTION V. FACILITY-WIDE EMISSIONS). Compliance with the SO₂ emissions limit set forth under 2Q .0315 above ensures compliance with this regulation and will make the facility minor for PSD. Nonetheless, a PSD avoidance condition will be placed in this permit.

2Q .0317 – Avoidance Conditions (2Q .0700 – Recycled Fuel Oil)

This facility is subject to this rule for the avoidance of 2D .0530 "Prevention of Significant Deterioration" as previously mentioned above. It is also subject to this rule for the avoidance of 2Q .0700 "Toxic Air Pollutant Procedures" due to the use of recycled No. 2 and No. 4 fuel oils. The recycled fuel oil must be equivalent to its virgin counterpart. This can be met by following the allowable levels for arsenic, cadmium, chromium, lead, total halogens, flash point, sulfur, and ash as listed in the permit condition. The facility must record and maintain for a minimum of three (3) years the actual amount of recycled fuel oil delivered to and combusted on an annual basis. Each load received shall include a delivery manifest, a batch specific analytical report, batch signature information, and a certification indicating there were no detectable PCBs (<2ppm). It is reasonable to anticipate compliance.

2Q .0711 – Emission Rates Requiring a Permit (Toxics)

As previously discussed under 2D .1100, a toxics review has been triggered for this facility for certain TAP (i.e., Arsenic, Benzene, Cadmium, Formaldehyde, Mercury and Nickel) because they are expected to be emitted above their respective toxic permit emission rates (TPER). In addition, this facility will emit additional TAP as shown in the table below that are not expected to be emitted above their respective TPER.

This facility must be operated and maintained so that any toxic air pollutant (TAP) emitted does not exceed its respective toxic permit emission rate (TPER). Prior to exceeding any TPER, the facility must modify their air quality permit. The Permittee shall maintain records of operational information demonstrating that the TAP emissions do not exceed the TPERs. A toxics review has been triggered for this initial review for the emissions of TAPs listed in the table below due to the new HMA and Concrete Batch plants. The Hot Mix Asphalt Plant (HMA-1), the five HMA Storage Silos (HMA-Silo 1 through HMA-Silo 5) and five (5) Asphalt Loadout Operation Silos (HMA LO1 through HMA-LO5-5), the two (2) Asphalt Cement Heaters (HMA-H1 and HMA-H2), and the Concrete Batch Plant will be sources of these TAPs. The expected actual emission rates of these TAPs were calculated by this reviewer using the NCDEQ Concrete Batch Plant, Asphalt, and Fuel Oil Combustion spreadsheets (Attachments C, D, E2 and E3). Expected actual emissions for the HMA plant are based on either Natural Gas or No. 4/No. 6 Fuel Oil combustion, to obtain the worst case TAP emissions, and 500,000 tons of asphalt production per year. These emission rates will not exceed the TPERs as demonstrated below. It is reasonable to anticipate compliance.

| Toxic Air Pollutant (CAS #) | TPER | Expected Actual Emission Rate |
|-------------------------------------------------------------------------|----------------------------|---------------------------------------------|
| Acetaldehyde (75-07-0) | 6.8 lb/hr | 0.325 lb/hr |
| Acrolein (107-02-8) | 0.02 lb/hr | 0.0065 lb/hr |
| Benzo(a)pyrene (Component of 83329/POMTV & 56553/7PAH) (50-32-8) | 2.2 lb/yr | 0.0088 lb/yr |
| Beryllium Metal (7440-41-7) | 0.28 lb/yr | 0.0607 lb/yr |
| Carbon disulfide (75-15-0) | 3.9 lb/day | 0.015 lb/day |
| Chromium (VI) Soluble Chromate Compounds (Component of CRC) (SolCR6) | 0.013 lb/day | 0.0067 lb/day |
| Fluorides (16984-48-8) | 0.34 lb/day 0.064 lb/hr | 0.0147 lb/day 0.00061 lb/hr |
| Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (57653- 85-7) | 0.0051 lb/yr | 6.50×10 ⁻⁷ lb/yr |
| Hexane, n- (110-54-3) | 23 lb/day | 5.74 lb/day |
| Hydrogen sulfide (7783-06-4) | 1.7 lb/day | 0.328 lb/day |
| MEK (methyl ethyl ketone, 2-butanone) (78-93-3) | 78 lb/day 22.4 lb/hr | 0.161 lb/day 0.0067 lb/hr |
| Manganese unlisted compounds (MNC) | 0.63 lb/day | 0.0645 lb/day |
| Methyl chloroform (71-55-6) | 250 lb/day 64 lb/hr | 0.288 lb/day 0.012 lb/hr |
| Methylene chloride (75-09-2) | 1,600 lb/yr 0.39 lb/hr | 0.0165 lb/yr 8.23×10 ⁻⁶ lb/hr |
| Perchloroethylene (tetrachloroethylene) (127-18-4) | 13,000 lb/yr | 0.160 lb/yr |
| Phenol (108-95-2) | 0.24 lb/hr | 0.0010 lb/hr |
| Styrene (100-42-5) | 2.7 lb/hr | 0.00024 lb/hr |
| Tetrachlorodibenzo-p-dioxin 2,3,7,8 (1746-01-6) | 0.00020 lb/yr | 1.05×10 ⁻⁷ lb/yr |
| Toluene (108-88-3) | 98 lb/day 14.4 lb/hr | 17.53 lb/day 0.73 lb/hr |
| Xylene (mixed isomers) (1330-20-7) | 57 lb/day 16.4 lb/hr | 1.45 lb/day 0.0604 lb/hr |

IV. NEW SOURCE PERFORMANCE STANDARDS (NSPS) / NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) / PREVENTION OF SIGNIFICANT DETERIORATION (PSD) / EPA SECTION 112r / ATTAINMENT/NON-ATTAINMENT STATUS

NSPS APPLICABILITY - As discussed in Section III. under 2D .0524, the facility is subject to 40 CFR 60 Subpart I – "Standards of Performance for Hot Mix Asphalt Facilities" and Subpart OOO for "Nonmetallic Mineral Processing Plants."

The two Asphalt Cement Heaters (HMA-H1 and HMA-H2) <u>are not</u> subject to 40 CFR Part 60, Subpart Dc because the maximum heat input of each is less than 10 million Btu per hour.

The insignificant aboveground storage tanks containing fuel oil and liquid asphalt (IES-1, IES-2, IES-4 and IES-5) are not subject to 40 CFR Part 60, Subpart Kb, because fuel oil has a true vapor pressure (TVP) less than 0.062 kilopascals (kPa), or 0.0090 psi, at 70° F. (AP-42 7.1, Organic Liquid Storage Tanks, rev. 11/06, Table 7.1-2), and liquid asphalt has a TVP of 0.12 kPa (0.017 psi) at 325 °F (AP-42 11.1 HMA plants, background document, 2/2004, p. 4-82).

NESHAP APPLICABILITY - This facility is not subject to any current NESHAP regulation.

The two Asphalt Cement Heaters (HMA-H1 and HMA-H2) <u>are not</u> subject to 40 CFR 63 Subpart JJJJJJ for Industrial, Commercial, and Institutional Boilers at Area Sources. This rule defines boilers as "an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam or hot water." These heaters are not considered boilers as defined by this rule, i.e., it is not used to create steam, and so this rule <u>does not</u> apply.

The facility **is not** subject to 40 CFR 63 Subpart LLLLL - National Emission Standards for Hazardous Air Pollutants: Asphalt Processing and Asphalt Roofing Manufacturing. This facility is not defined as an asphalt processing plant or asphalt roofing manufacturer in this Subpart, and is classified as minor for HAP emissions, and so this rule **does not** apply.

- PSD APPLICABILITY As discussed in Section III. under 2Q .0317, this facility has the potential to emit greater than 250 tons per year (after controls) of a criteria pollutant (SO₂) but has a permit condition under rule 2Q .0317 so that it can be considered minor for PSD purposes. This facility is not one of the twenty-eight named PSD source categories limited to 100 tons per year (after controls) of any criteria pollutant. Caswell County has not yet triggered a PSD baseline date. Therefore, increment tracking is not required.
- TOXICS APPLICABILITY The facility will emit toxics and <u>is</u> subject to 2D .1100 and 2Q .0711. See Section III. for further discussion.
- **EPA SECTION 112(r)** This facility **is** subject to the "General Duty Clause" of EPA Section 112(r) regulations; however, it **is not** subject to the Risk Management Plan (RMP) requirement.
- ATTAINMENT/NON-ATTAINMENT STATUS Caswell County is considered in attainment or unclassifiable for all regulated pollutants.

V. FACILITY – WIDE EMISSIONS

The following table summarizes the facility-wide emissions. The expected actual and potential emissions (before and after controls/limits) were calculated by adding emissions from the NCDEQ Asphalt, Fuel Oil Combustion, and Concrete Batch spreadsheets (Attachments C, D, E3, E4 and E5) as applicable. Expected actual emissions for the HMA plant are based on No. 4/No. 6 Fuel Oil combustion and 500,000 tons of asphalt per year. Potential emissions before controls/limits are based on the maximum rate of 250 tons per hour, for 8,760 hours per year with a worst-case sulfur content of 2.1%. Potential emissions after controls/limits are based on the Synthetic Minor limits of 500,000 tons of asphalt per year limits and 0.5% sulfur content. As the asphalt spreadsheets do not include HAPs from the heaters, the NCDEQ Fuel Oil Combustion Emissions Calculator spreadsheet (Attachment D) was used to add potential HAPs from the heaters to the total potential HAPs from the plant.

| Pollutant | Expected Actual Emissions | Potential Emiss | sions [tons/year] |
|---------------------------------------|----------------------------------|------------------------|-----------------------|
| ronutant | [tons/year] | Before controls/limits | After controls/limits |
| PM | 33.92 | 541.72 | 34.08 |
| PM ₁₀ | 17.96 | 212.02 | 18.01 |
| PM ₁₀ for Title V* | | 39.79+0.23* = 40.02 | 7.34+0.23* = 7.57 |
| SO ₂ | 27.79 | 688.00 | 31.15 |
| NO _x | 15.68 | 67.92 | 16.63 |
| СО | 33.61 | 147.04 | 33.85 |
| VOC | 12.05 | 52.78 | 12.06 |
| HAP _{Total} | 2.58 | 11.32 | 2.59 |
| HAP _{Highest} (Formaldehyde) | 0.80 | 3.49 | 0.80 |

^{*} For Title V applicability, only emissions from the cement and fly ash storage silos after controls are considered from the Concrete Batch Plant, because the EPA considers emissions from cement/fly ash scales (weigh batchers) and truck loading operations to be fugitive and uncontrolled. In addition, the EPA considers the bagfilter for the cement and fly ash silos to be integral. Therefore, the facility does not trigger Synthetic Minor for PM₁₀.

VI. COMPLIANCE

There is no compliance history as this is a Greenfield facility. This facility will be targeted for a compliance inspection upon issuance of this permit.

VII. APPLICATION FEE

An application fee of \$400, the required fee for a new permit for a Greenfield facility, was submitted along with the application.

VIII.ZONING CONSISTENCY DETERMINATION (ZCD)

As mentioned previously, this site is located in an area without zoning; therefore, a legal notice is required per 2Q .0113. A sign was posted on the property on December 2, 2019 and the required legal notice was published in The Caswell Messenger on December 4, 2019. Chris Bryant of the WSRO verified that the sign was posted, via site visit on December 18, 2019 and compliance with legal notice requirements was fulfilled on January 11, 2020.

IX. RECOMMENDATION

It is recommended that Air Quality Permit No. 10628R00 be issued to Carolina Sunrock LLC – Burlington North.

X. SUMMARY OF ATTACHMENTS

The following attachments accompany this review:

| Attachment | Description |
|------------|-----------------------------------------------------------------------------------------------------------------------|
| A1 | Email correspondence dated January 8 and February 13, 2020 from Scott Martino |
| A2 | Email correspondence dated November 25 and December 19, 2019 from Scott Martino |
| B1 | Bagfilter Evaluation for HMA-CD1 |
| B2 | Bagfilter Evaluation for RMC-CD2 |
| С | NCDENR Concrete Batch Emissions Calculator spreadsheet |
| D | NCDENR Fuel Oil Emissions Calculator spreadsheet |
| E1 | NCDENR Asphalt Emissions Calculator spreadsheet for Actual SO ₂ and CO Emissions w/ Synthetic Minor Limits |
| E2 | NCDENR Asphalt Emissions Calculator spreadsheet for Expected Actual Emissions using Natural Gas |
| E3 | NCDENR Asphalt Emissions Calculator spreadsheet for Expected Actual Emissions using Waste/No. Fuel Oil |

| Attachment | Description |
|------------|------------------------------------------------------------------------------------------------------|
| E4 | NCDENR Asphalt Emissions Calculator spreadsheet for Potential Emissions before controls/limits |
| E5 | NCDENR Asphalt Emissions Calculator spreadsheet for Potential Emissions after controls/limits |
| E6 | NCDENR Asphalt Emissions Calculator spreadsheet for Potential TAP Emissions using Natural Gas |
| E7 | NCDENR Asphalt Emissions Calculator spreadsheet for Potential TAP Emissions using No.4/No 6 Fuel Oil |
| E8 | NCDENR Fuel Oil Emissions Calculator spreadsheet for Potential TAP Emissions from HMA-H1 |
| E9 | NCDENR Fuel Oil Emissions Calculator spreadsheet for Potential TAP Emissions from HMA-H2 |
| E10 | NCDENR Concrete Batch Emissions Calculator spreadsheet for Potential TAP Emissions |
| E11 | Facility-Wide Emissions Summary Spreadsheet |



DIVISION OF AIR QUALITY January 21, 2020

MEMORANDUM

TO: Leo Governale, Environmental Engineer, WSRO

Davis Murphy, Permit Coordinator, WSRO

FROM: Nancy Jones, Meteorologist, Air Quality Analysis Branch (AQAB)

THROUGH: Tom Anderson, AQAB Supervisor, AQAB

SUBJECT: Corrected Review of Dispersion Modeling Analysis Carolina Sunrock, LLC

Burlington, Caswell County, North Carolina Facility ID: 1700016

This is a correction of the November 4, 2019 memo. I have corrected the maximum concentrations of cadmium, mercury, and nickel.

I have reviewed the dispersion modeling analysis, received September 23, 2019 for the Carolina Sunrock facility near Burlington, in Caswell County, North Carolina. The modeling was submitted as part of an application for a new hot mix asphalt plant and a concrete batch plant. The purpose for modeling was to demonstrate compliance with guidelines specified in 15A NCAC 2D .1104 for Toxic Air Pollutants (TAPs) emitted in excess of the Toxic Permitting Emission Rates (TPERs) listed in 15A NCAC 2Q .0711. The modeling adequately demonstrates compliance, on a source-by-source basis, for all toxics modeled.

Six air toxics, arsenic, benzene, cadmium, formaldehyde, mercury and nickel were evaluated using AERMOD (v18081) with the 2014-2018 Danville, VA surface and Greensboro upper air meteorological data. Direction-specific building dimensions, determined using EPA's BPIP-Prime program (04274), were used as input to the model for building wake effect determination. Release parameters and emission rates are attached. Receptors were spaced 50 meters apart along the property line and then spaced 100 meters apart extending out to 2,500 meters, 250 meters apart out to 7,500 meters. Release parameters and optimized emission rates are attached.

Maximum Modeled Toxics Impacts from Optimized Emission Rates Carolina Sunrock – Burlington Facility, Caswell County, NC

| 200 | Averaging | Max. Conc. | AAL | % of AAL |
|--------------|-----------|----------------------|----------------------|----------|
| Pollutant | Period | (μg/m ³) | (μg/m ³) | |
| Arsenic | Annual | 0.0020 | 0.0021 | 95 % |
| Benzene | Annual | 0.11 | 0.12 | 95 % |
| Cadmium | Annual | 0.0052 | 0.0055 | 95 % |
| Formaldehyde | 1-hr | 143 | 150 | 95 % |
| Mercury | 24-hr | 0.57 | 0.6 | 95 % |
| Nickel | 24-hr | 5.7 | 6.0 | 95 % |

This compliance demonstration assumes the source parameters and pollutant emission rates used in the dispersion modeling analysis are correct.

cc: Tom Anderson Nancy Jones

| Point Source ID | Easting (X) | Northing (Y) | Base Elevation | Stack Height | Temp. | Exit Velocity | Stack Diameter |
|--------------------|-------------|-----------------|-------------------|-----------------|-------|------------------|-------------------|
| | (m) | (m) | (m) | (ft) | (°F) | (fps) | (ft) |
| CD 1 | 650,208 | 4,013,087 | 201.32 | 30.2 | 240 | 96.5 | 3.1 |
| CD 2 | 650,221 | 4,013,028 | 203.17 | 35 | 77 | 80 | 1.5 |
| ESH 2 | 650,204 | 4,013,069 | 201.5 | 9 | 325 | 0.03 | 1 |
| ESH 1 | 650,190 | 4,013,088 | 200.3 | 15 | 325 | 0.03 | 0.2 |

| | | | | | Init. | Initial |
|-----------|---------|-----------|-----------|---------|-----------|-----------|
| Area | Easting | Northing | Base | Release | Horiz. | Vert. |
| Source ID | (X) | (Y) | Elevation | Height | Dimension | Dimension |
| | (m) | (m) | (m) | (ft) | (ft) | (ft) |
| F1 | 650,185 | 4,013,059 | 200.9 | 40.00 | 5.81 | 18.60 |
| F2 | 650,231 | 4,013,024 | 203.91 | 32.5 | 5.81 | 15.12 |

| Point Source ID | Arsenic | Benzene | Cadmium | Formaldehyde | Mercury | Nickel |
|--------------------|----------|----------|----------|--------------|----------|----------|
| | (lb/hr) | (lb/hr) | (lb/hr) | (lb/hr) | (lb/hr) | (lb/hr) |
| CD_1 | 0.00164 | 0.885 | 0.00708 | 40.5 | 0.0242 | 0.246 |
| CD_2 | 7.73E-04 | | 3.44E-05 | | | 0.00299 |
| ESH 2 | 5.63E-05 | 2.21E-05 | 2.48E-04 | 0.0144 | 1.34E-04 | 5.60E-05 |
| ESH 1 | 5.16E-05 | 2.02E-05 | 2.27E-04 | 0.0132 | 1.23E-04 | 5.14E-05 |

| Area Source ID | Arsenic (lb/hr) | Benzene (lb/hr) | Cadmium (lb/hr) | Formald (lb/hr) | Mercury (lb/hr) | Nickel (lb/hr) |
|-------------------|-----------------|-----------------|--------------------|-----------------|-----------------|-------------------|
| F1 | (10/111) | 0.00486 | (10/111) | 0.0466 | (10/111) | (10,111) |
| F2 | 1.04E-04 | | | | | |

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

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



ATTACHMENT AI

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

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 III 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



ATTACHMENT AZ

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

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

NC Department of Environmental Quality Received

DEC 19 2019

Winston-Salem Regional Office

Environmental Compliance Manager/Mine Engineer

Carolina Sunrock 200 Horizon Drive Suite 100 Raleigh, NC 27615

Office Phone: (919) 7476336 Cell (984) 202-4761

23 ASUNROCK

to India James Cibe Jugo Barrero Ciber J Jugo 1961

water the size of the size of

ATTACHMENT BI

FORM C1

CONTROL DEVICE (FABRIC FILTER)

| | | ivision of Air Quality | | | | | <u> </u> |
|-------------------------------------------------|-----------------|------------------------------------------|-------------------|------------|------------------------------------------|---------------------------------------------|-----------------------------------------|
| CONTROL DEVICE ID NO: HMA-CD1 | | CONTROLS EMISS | SIONS FROM WHICH | HEMISSION | SOURCE ID NO(S |): See Form A2& | A3 |
| EMISSION POINT (STACK) ID NO(S): | EP-1 | | IES OF CONTROLS | | NO. | | |
| | | 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1. | | | | , . | |
| | | | - | | · | | |
| | | | P.E. SEAL REQUIP | | | YES | <u> Ν</u> ο |
| DESCRIBE CONTROL SYSTEM: Hot Mi | ix Asphalt Pla | int Bag House Mo | del RBH 51-12 Sei | r No 03-20 | 1-3001, | | |
| o 51,111 ACFM | | | | | | | |
| o (768) 4-5/8" Ø x 10' long 14oz ara | _ | | | | | | |
| o 8,968 ft2 cloth area; 5.68 fpm filt | | | | | - | | |
| o 41-5/8" ID stack; 31'-0" discharge | - | - | | | | | |
| o Integral 9' Ø x 10' long horizonta | l cyclone prin | nary collector | • | | | | |
| | - ·· | | · | | | | |
| POLLUTANTS COLLECTED: | • | | PM | PM10 | | | |
| • | | | | | - . ——— | | _ |
| BEFORE CONTROL EMISSION RATE (LE | B/HR): | , | See Appen | dix A | | | |
| • | • | | 20.00 | | · - | | _ |
| CAPTURE EFFICIENCY: | | | . 99.99 % | 99.99 | % | % | % |
| | | • | | | | | _ |
| CONTROL DEVICE EFFICIENCY: | | | 90 % | 90 | % · | % | % |
| | | • | 93 | 90 | | | _ |
| CORRESPONDING OVERALL EFFICIENC | CY: | | % | 30 | _% | | _% |
| | | | 1 | 1 | | • | |
| EFFICIENCY DETERMINATION CODE: | | | <u>.</u> | | | | _ |
| <u></u> | | • | 8.25 | 5.75 | ; • | | |
| TOTAL AFTER CONTROL EMISSION RA | TE (LB/HR): | | | | | | _ |
| PRESSURE DROP (IN H ₂ 0): MIN: | MAX: | GAUGE? | ☑ YES □ | NO. | ;;; <u>2</u> | | |
| BULK PARTICLE DENSITY (LB/FT ³)=54- | 444 | | INLET TEMPERAT | URE (°f): | MIN Ambient | MAX 325 | |
| | ☑ LB/HR | ☐ GR/FT ³ | OUTLET TEMPER | | MIN Ambient | MAX 325 | |
| INLET AIR FLOW RATE (ACFM): 51,111 | | | FILTER OPERATION | | | | |
| NO. OF COMPARTMENTS: 3 | | PER COMPARTMEN | _ | | LENGTH OF BAG | /IN): 120 5 | |
| NO. OF CARTRIDGES: 738 | | ACE AREA PER CAR | | 1 | DIAMETER OF BA | ` ' | |
| TOTAL FILTER SURFACE AREA (FT²): 8 | - | AIR TO CLOTH RA | | • | Taismeter OF DY | 10 (114.). PF 3/0 | |
| | | | | CII TED MA | ATERIAL: 🗹 | WOVEN | CELTER |
| | MIIVE L | FORCED/POSITIV | E | FILTER MA | TERIAL: | WOVEN □ | FELTED |
| DESCRIBE CLEANING PROCEDURES: | | | | | | | |
| ☑ AIR PULSE | · 🗆 | SONIC | | | SIZE | WEIGHT % | CUMULATIVE |
| REVERSE FLOW | | SIMPLE BAG COLI | LAPSE | | (MICRONS) | OF TOTAL | % . |
| ☐ MECHANICAL/SHAKER | | RING BAG COLLA | DOE | | 1 | 40 | |
| | | | rac | | 0-1 | -70 | 40.2 |
| OTHER: | | | ırge | | 1-10 | 60 | 100 |
| OTHER: DESCRIBE INCOMING AIR STREAM: He | ot Air from Dr | ying and Mixing D | | | 1-10 | | |
| OTHER: | ot Air from Dr | ying and Mixing D | | ŧ\ | 1-10 10-25 | | |
| OTHER: | ot Air from Dr | ying and Mixing D | | ėl . | 1-10 10-25 25-50 | | |
| OTHER: | ot Air from Dr | ying and Mixing D | | it\ | 1-10 10-25 25-50 50-100 | | |
| OTHER: | ot Air from Dr | ying and Mixing D | | - - : | 1-10 10-25 25-50 | 60 | 100 |
| OTHER: | ot Air from Dr | ying and Mixing D | | el | 1-10 10-25 25-50 50-100 | 60 | |
| OTHER: | ot Air from Dr | ying and Mixing D | | řl | 1-10 10-25 25-50 50-100 | 60 | 100 |
| OTHER: | ot Air from Dr | ying and Mixing D | | el | 1-10 10-25 25-50 50-100 | 60 | 100 |
| OTHER: | ot Air from Dr | ying and Mixing D | | iel | 1-10 10-25 25-50 50-100 | 60 | 100 |
| OTHER: | ot Air from Dr | ying and Mixing D | | el | 1-10 10-25 25-50 50-100 | 60 | 100 |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | 60 TOT | 100 |
| OTHER: | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | FOT | 100 AL = 100 |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | FOT | 100 AL = 100 |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | FOT | 100 AL = 100 |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | FOT | 100 |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | TOT | Partment of nental Qualiceived |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | TOT | 100 AL = 100 |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | OURCE(S): NC Dep Environm Re | partment of nental Qualiceived 3 0 2020 |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | OURCE(S): NC Dep Environm Re | Partment of nental Qualiceived |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | OURCE(S): NC Deplement Research JAN Winst | partment of nental Qualiceived 3 0 2020 |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | OURCE(S): NC Deplement Research JAN Winst | partment of nental Qualiceived 3 0 2020 |
| OTHER: DESCRIBE INCOMING AIR STREAM: Ho | | | rums in HMA Plan | | 1-10 10-25 25-50 50-100 >100 | OURCE(S): NC Deplement Research JAN Winst | partment of nental Qualiceived 3 0 2020 |

| Bagfilter Evaluation - Carolina Sunrock, LLC - 1700016 - RMC-CD2 | Program Output | Filtering Velocity Analysis | Typical Filtering Velocity (fpm) Applicant Filtering Velocity (fpm) 8.0 8.0 | Typical filtering velocity not exceeded. | Chemical Resistance | Controlled Particulate Rate (lb/hr) Cas Stream Particulate Loadings (gr/dscf) Uncontrolled 0.000 Controlled Co |] | Allowable Emissions per 2D. 0515 (lb/hr) 6.69 | Maximum Areal Dust Loading (gr/sq ft) Dust drag (K2) parameter ((inH2O/fpm)/(lb/sq ft)) 0.0 0.0 | Efficiency Calculations | Mass in Range Control Efficiency eta-m | 99.90 | 66.66 66.66 | 000 66:66 0:0 | Overall Control Efficiency = Penetration = | Barfilter evaluation developed hy: | William D. Willets, M.S., E.I.T. North Carolina Division of Emilian Management | Air Quality Permitting Version 3.3; September 23, 1999 |
|------------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------|----------------------------|-------------------------------------------------------------|-------|----------------|----------------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------|
| Bagfilter | User must supply information in blue (double outline). | Optional user information is single outlined. | Particulate Material Estimated Efficiency (%) | Actual Air Flow Rate (acfm) Cloth Area (sq ft) 6,500 T,433 | Maximum Operating Temperature (F) Proposed Cloth Material 70 Pulse Jet7 | Uncontrolled Particulate Rate (Ib/hr) Process Rate (Ib/hr) 4.156 | Maximum Pressure Drop (in H2O) No. of compartments | Gas Stream Moisture (%) Felted? yes | Time Between Cleanings (min) Cleaning Time (min) | Particle Size Distribution | Avg. Size Size Ranges Size Cumul. Mass (im) (im) (% < size) | 0-25 | 5-70 | 17.5 1415 15 19.0 60 15-20 20 100.0 100 > 20 100.0 | | Information Source(s) * Filter Material -> Polyester = Dacron | Anneaded 1 080 libbr + Sand 1 440libbr + Weter 140 libbr = 1 158 libbr | |

ATTACHMENT BZ

FORM C1 CONTROL DEVICE (FABRIC FILTER)

| REVISED 09/22/16 NCDEQ/Division | of Air Quality - A | application | on for A | Air Permi | t to Construct | Operat | е | | C1 |
|--------------------------------------------------------|-----------------------|-------------|------------|-----------|--------------------------------|------------|----------------|--------------|---------------|
| CONTROL DEVICE ID NO: RMC-CD2 | CONTROLS EN | /ISSIONS | FROM | / WHICH | EMISSION SC | URCE | ID NO(S |): See Fo | rm A2 |
| EMISSION POINT (STACK) ID NO EP-2 | POSITION IN S | ERIES O | F CON | TROLS | NO. | 1 (| OF 1 | UNITS | |
| | | | ٠. ٠ | | _ | | | | |
| | | P.E. ŚE | AL REC | QUIRED (| PER 2q .011 | YES | | √ NO | |
| DESCRIBE CONTROL SYSTEM: C&W Manu | ufacturing - R | A-140 - | 6500 | CFM to | control emis | sions | from ce | ment/fly | ash |
| silos and aggregate and truck loading. | | | | | • | | | | • |
| | | | • | | | | | | |
| | | | | | | | | | |
| · ' | | | | | | | | | |
| | • | | | | | | | | |
| POLLUTANTS COLLECTED: | | PM | | PM10 | | | | | |
| | | · | - lmnar | Alu Ad | • | · · - | | _ | |
| BEFORE CONTROL EMISSION RATE (LB/HR) | | see / | -ppen | dix A4 | - | · <u>-</u> | | _ | |
| CAPTURE EFFICIENCY: | | | 0/ | | 0/ | 0/ | | 0/ | |
| OAFTURE EFFICIENCY. | | | _ % | | | % – | <u>.</u> | -% | |
| CONTROL DEVICE EFFICIENCY: | | 99.9 | % | 99.9 | % | % | | % | |
| | | | - . | | | _ | | • | |
| CORRESPONDING OVERALL EFFICIENCY: | | | _% | | | % _ | | % | |
| EFFICIENCY DETERMINATION CODE: | | | | | | | | | |
| E. P. SILMOT DETERMINATION CODE. | | | - | | | | | - | |
| TOTAL AFTER CONTROL EMISSION RATE (L | | See A | \ppen(| dix A4 | | | | | |
| PRESSURE DROP (IN H ₂ 0): MIN: MA | GAUGE? | ✓ YES | | NO | | | | - | - |
| BULK PARTICLE DENSITY (LB/FT³): | :- - | | EMPER | RATURE | (MIN | MAX | | | |
| POLLUTANT LOADING RATE: LB/HR | GR/FT ³ | | | ERATUR | | MAX | | · | |
| INLET AIR FLOW RATE (ACFM): 6,500 cfm | | | | ATING TE | MP (ºf): Ambi | ent | | | |
| | S PER COMPAI | | | | LENGTH OF B | | | | |
| | FACE AREA PE | | | | DIAMETER OF | | • | | |
| TOTAL FILTER SURFACE AREA (FT ²): 1,43: | | | | | Filter material: | | | | |
| DRAFT TYPE: VINDUCED/NEGATIVE DESCRIBE CLEANING PROCED | FORCED/POSI | IIVE | • | FILIER | MATERIAL: | WOVE | N [4] | FELTED | Norwe e Age |
| | SONIC | | | | 075 | 10mm | ᅄ | OLIE 41 4 | TIL /E |
| , , , , , , , , , , , , , , , , , , , , | SONIC SIMPLE BAG C | | Ę. | | SIZE (MICRONS) | | GHT % FOTAL | CUMULA % | \IIV Ŀ |
| | RING BAG COL | | - | | 0-1 | | 10 10 | 40.2 | ,— |
| OTHER: | TOTAL DAG COL | · | | | | | 50 | 100 | |
| DESCRIBE INCOMING AIR STREAM: Hot Ai | r from Design | on4 ##! | | #41 P4 ** | 1-10 10-25 | , | ,,, | 100 | |
| in HMA Plant\ | i itoin ntying | and VII) | king D | ļums | 25-50 | | | | |
| m iona fianti | • | | | | 50-100 | | | · | |
| | | | | | >100 | | | | · |
| | | | | | | | TOTA | L = 100 | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | , | |
| | | | | | | • | | | |
| ON A SEPARATE PAGE, ATTACH A DIAGRAM | A SHOWING TH | E RELAT | IONSH | IP OF TH | IE CONTROL D | EVICE | TO ITS | EMISSION | SOU |
| COMMENTS: | | | | | | | | | |
| · | | | | | NC Dan= | . | | | |
| | | | | E | . I'' C Depar | tmen | tof | | |
| | | | | ý | NC Depar nvironmen Recei | rei Ul | uality | | |
| | | | | ł . | _ | | , , | | |
| | | | | | JAN 1 | b 202 | .0 | | |
| | | | | | Winston- | Cal- | | | . |
| | | | | | Dog!a! | Saler | n ' | 1.6 | |
| · · | | | | | Regional | Uttice | 9 💥 | | |

RMG-CD2 PAGFILTER SPECS.

| Specifications: | | CV | MATER | JAL - | YOUYES | TER |
|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Specifications | RA-120 | RA-140 | RA-170 | RA-200 | RA-280 | RA-340 |
| Total filtration area (sq. ft.) | 95 5 | 1433 | 1734 | 2148 | 2865 | 3468 |
| Number of bags | 48 | 72 | 72 | 108 | 144 | 144 |
| Bag diameter and length | 8"x114" | 8"x114" | 8"x138" | 8"x114" | 8"x114" | 8"x138" |
| Normal air capacity (CFM) | 5,000 | 6,500 | 8,000 | 10,000 | 13,000 | 15,000 . |
| Static pressure drop | 6"W.C. | 6"W.C. | 6"W.C. | 6"W.C. | 6"W.C. | 6"W.C. |
| Air to cloth ratio (ft/min) | 5.2 | 4.54 | 4.61 | 4.66 | 4.54 | 4.33 |
| Blower hp | 10 | 10 | 15 | 20 | 25 | 30 |
| Min design efficiency* | 99.9% | 99.9% | 99.9% | 99.9% | 99.9% | 99.9% |
| Filtration velocity ft/min | 5.2 | 4.54 | 4.61 | 4.66 | 4.54 | 4.33 |
| Outlet area ft2 | 1.91 | 2.29 | 2.85 | 2.85 | 4.19 | 5.17 |
| Outlet velocity ft/sec | 43.6 | 47.31 | 46.78 | 58.48 | 51.71 | 48.36 |
| Cleaning mechanism | reverse air |

Sancé: WWW. cwm fg: com

*At standard test conditions

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:

FACILITY ID NUMBER;

PERMIT NUMBER

FACILITY CITY:

FACILITY COUNTY:

SPREADSHEET PREPARED BY:

General Facility Information

MAXIMUM HOURLY THROUGHPUT AT TRUCK LOAD OUT

ACTUAL ANNUAL PRODUCTION

MAXIMUM ANNUAL PRODUCTION*

(yd³/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

PERCENT OF ANNUAL LOADOUT THROUGH CENTRAL MIX

| 9 10 2 | | |
|------------------------|----------------|--|
| 100 | (% by volume) | |
| 100 | (70 by volume) | |
| | | |
| A CHARLES AND A COLUMN | /0/ I | |
| U | (% by volume) | |
| | | |

Facility Emissions Control Information

IS THERE A CONTROL DEVICE ON THE TRUCK MIX? IS THERE A CONTROL DEVICE ON THE CENTRAL MIX?

| 2 (1=No, 2=Yes) | : |
|-----------------|---|
| (1=No, 2=Yes) | |

Typical NC Comp.*

Material Composition Information

Cement /

Supplement

Coarse Aggregate

Sand

Water

| | - TO-10-01-1-10-1 |
|---------------|-------------------|
| lbs | 410 lbs |
| lbs | 120 lbs |
| 1980 Ibs | 1884 lbs |
| 1 44 0 | 1443 lbs |
| lbs | 167 lbs |
| 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"

Enter the process rate if different from default, otherwise leave blank Process Rate²

Maximum Allowable Emission Rate³ PM Emission Rate Before controls PM Emission Rate After Controls Assumed control device efficiency for

Complies with 2D .0515? Control device required to comply?

| - | | | | | | |
|---|--------------|--------------------------|--------------|--------|------------------|---------|
| | Cement | Flyash silo | Sand&Agg | Truck | <u>Central</u> | l |
| | Silo | I Iyasii SilO | Weigh hopper | mix.1/ | mix ¹ | |
| | | 4304 | | | | |
| | | The state of the spirits | | | | |
| | 25 | 25 | 205.200 | 240.96 | 0.000 | tons/hr |
| | 35.4 | 35.4 | 58.8 | 60.5 | 0.0 | lbs/hr |
| | 18.250 | 78.500 | 0.985 | 52.210 | 0.000 | lbs/hr |
| | 0.025 | 0.223 | 0.001 | 1.001 | 0.000 | lbs/hr |
| ١ | weigh hopper | 4 | 99.9% | | | |
| | yes | · ves | yes | yes | ves | |

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

пο

Allowable emission rate should be calculated to 3 significant digits.

TRACHMENT C

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.

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



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.

General Facility Information

COMPANY NAME:

FACILITY ID NUMBER:

PERMIT NUMBER

FACILITY CITY:

FACILITY COUNTY:

SPREADSHEET PREPARÉD BY:

General Facility Information

MAXIMUM HOURLY THROUGHPUT AT TRUCK LOAD OUT ACTUAL ANNUAL PRODUCTION

Facility Production Information

PERCENT OF ANNUAL LOADOUT THROUGH TRUCK MIX PERCENT OF ANNUAL LOADOUT THROUGH CENTRAL MIX

Facility Emissions Control Information

IS THERE A CONTROL DEVICE ON THE TRUCK MIX? IS THERE A CONTROL DEVICE ON THE CENTRAL MIX?

Material Composition Information

Cement

Supplement

Coarse Aggregate

Sand

Water

Total

| Carolina Sunrock, LLC - Burlingto | on North |
|-----------------------------------|----------|
| 1700016 | |
| 10928R00 | |
| Burlington | |
| Caswell | |
| LLG | |

| 120 | (yd³/hour) | |
|---------|------------|---|
| 1051200 | (yd³/year) | - |

| 100 | (% by volume) | | _ |
|-----|---------------|----------|---|
| 0 | (% by volume) | - | |

| 2 | (1=No, 2=Yes) | | |
|---|---------------|--|--|
| 1 | (1=No, 2=Yes) | | |

| | | Typical NC Comp.* |
|------|-----|-------------------|
| 448 | lbs | 410 lbs |
| 148 | lbs | 120 lbs |
| 1980 | lbs | 1884 lbs |
| 1440 | lbs | 1443 lbs |
| 140 | lbs | 167 lbs |
| 4156 | lbs | 4024 lbs |

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

| PARTICULATE | EMISSIONS | | MISSIONS | (BEFORE CONTROLS / LIMITS) | | TIAL EMISSIONS (AFTER CONTROLS / LIMITS) | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------|----------|----------------------------|---------|------------------------------------------|--------------|
| | | · (AFTER CONTE | | , | | | |
| | Pollutant | lb/hr | tons/yr | lb/hr | tons/yr | lb/hr | tons/yr |
| ruck mix* | / PM | 1.001 | 4.386 | 52.210 | 228.678 | 1.001 | 4.38 |
| . "V | PM10 | 0.375 | 1.645 | 14.912 | 65.314 | 0.375 | 1.64 |
| central mix* | PM · | 0.000 | 0.000 | 0.000 | 0,000 | 0,000 | 0.00 |
| | PM10 | 0,000 | 0.000 | 0.000 | 0.000 | 0:000 | 0.0 |
| cement silo | /PM / | 0.027 | 0.117 | 19.622 | 85.946 | 0.027 | 0.1 |
| | PM10 | 0.009 | 0.040 | 12.634 | 55.335 | 0.009 | 0.0 |
| suppl. Silo | PM / | 0.079 | 0.346 | 27.883 | 122.128 | 0.079 | 0.3 |
| | PM10 | 0.044 | 0,191 | 9.768 | 42.784 | 0,044 | 0.1 |
| weigh hopper**/ | GEMC 2 | 0.985 / | 4.314 | 0.985 | 4.314 | 0.985 | 4.3 |
| [sand & aggr.] | PM10 | 0.575 | 2.517 | 0.575 | 2.517 | . 0.575 | 2.5 |
| sand & aggr. | PM | 3.003 | 13.155 | 3.003 | 13.155 | 3,003 | 13.1 |
| | PM10 | 1.433 | 6.275 | 1.433 | 6.275 | 1.433 | 6.2 |
| (a) (A) U (B) (A) (B) (B) (B) (B) (B) | TO A TO A PARTY OF THE | | | 0.517/04 | 14 20 | 5 025 | 723 |
| OTAL PHIOT | PM10 | | 10 687 | 39.321 | 172,225 | 24:5 | 10.6 |
| | 25.00 | | | | | | |
| THE WAY THE PROPERTY OF THE PARTY OF THE PAR | Section Control of TAIR Company | | A HOLDE | | | | 0.231 |

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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| | HEROTE XXX | | Harry J. M. M. M. | | | 抽题:"是被求令 | |
|--------------------------------------|------------|------------|-------------------|------------|----------------|-----------------|--------------|
| POLLUTANT | CAS NUMBER | ACTUAL | EMISSIONS | | POTE | NTIAL EMSSIONS | |
| 1 022012411 | ONO HOMBER | (AFTER CON | ITROLS / LIMITS) | (BEFORE CO | NTROLS/LIMITS) | (AFTER CONTRO | LS / LIMITS) |
| | | lb/hr | lb/yr | lb/hr | lb/yr | lb/hr | ib/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 metat (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 |

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 facility 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 | 7.8 7.7 | 0.018 | |
| Nickel metal (TH) | 7440-02-0 | 700000000000000000000000000000000000000 | 0.005 | |

CONCRETE BATCH PLANT EMISSIONS CALCULATOR - TAP CALCULATIONS REVISION D; October 15, 2015



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|-------------------|-----------|----------------|------------------|--------------------------------------------------|----------|-------------------|----------------|
| ARSENIC EMISSIONS | | ACTUAL | EMISSIONS | | POTENT | IAL EMISSIONS | |
| | , | | TROLS / LIMITS). | (BEFORE CONTROLS / LIMITS) (AFTER CONTROLS / LIM | | | / 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 EMISSIONS | | ACTUAL EI | ACTUAL EMISSIONS | | POTENTIA | L EMISSIONS | |
|---------------------|-----------|----------------|------------------|----------------------------------------------------|----------|-------------|----------|
| | | (AFTER CONTR | OLS / LIMITS) | (BEFORE CONTROLS / LIMITS) (AFTER CONTROLS / LIMIT | | | 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 TPE | R: 0.28 lb/yr) | | - | | |

| CADMIUM EMISSIO | | | MISSIONS | POTENTIAL EMISSIONS | | | | | |
|------------------|-----------|--------------|------------------|---------------------|-----------------|-------------------|----------|--|--|
| | | (AFTER CONTR | ROLS / LIMITS) - | (BEFORE CON | TROLS / LIMITS) | (AFTER CONTROLS / | LIMITS) | | |
| Source | Pollutant | lb/hr | lb/yr | lb/hr | lb/yr | lb/hr | lb/уг | | |
| 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 TPE | R: 0.37 lb/yr) | | - | | | | |

| | | | | <u> </u> | | | 8 - 1 8 - 1 8 - 1 8 - 8 8 8 8 8 8 |
|-------------------|----------------|----------|----------|----------------------------------------|----------|--------------|---------------------------------------------------------|
| CHROMIUM EMISSION | ONS | ACTUAL E | MISSIONS | | POTENTI | AL EMISSIONS | |
| | (AFTER CONTROL | | | S / LIMITS) (BEFORE CONTROLS / LIMITS) | | | / LIMITS) |
| Source | Pollutant | lb/hr | lb/ÿr | 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 |

Page 1 of 2

CONCRETE BATCH PLANT EMISSIONS CALCULATOR - TAP CALCULATIONS REVISION D; October 15, 2015



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| the Agency of the | | SELL L | 1.0 | | | | | | |
|-------------------|-----------|---------------------------------------------------------------|-----------|---------------------|----------|----------|----------------------|--|--|
| LEAD EMISSIONS | | ACTUAL | EMISSIONS | POTENTIAL EMISSIONS | | | | | |
| | | (AFTER CONTROLS / LIMITS) (BEFORE CONTROLS / LIMITS) (AFTER C | | | | | R 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 | | |

| | | Broad For Brok | | | 147.1841 (140.1 | | | |
|------------------|------------------|----------------|------------------|-------------|------------------|---------------------------|----------|--|
| MANGANESE EMISS | IONS | ACTUAL E | MISSIONS | | POTENT | IAL EMISSIONS | | |
| | | (AFTER CONT | ROLS / LIMITS) | (BEFORE CON | ITROLS / LIMITS) | (AFTER CONTROLS / LIMITS) | | |
| Source | Source Pollutant | | 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/da | iy) | | | | |

| | | | | na ana Ny kaominina dia kaominina mpikambana | | | | | |
|------------------|-----------|---------------------------|--------------|-------------------------------------------------|-----------------|-----------------|----------|--|--|
| NICKEL EMISSIONS | | ACTUAL E | MISSIONS | POTENTIAL EMISSIONS | | | | | |
| 0 | | (AFTER CONTROLS / LIMITS) | | (BEFORE CON | TROLS / LIMITS) | (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) | | | | | | |

| | | | | aye Milita ya | | 山林野中发展区 。 | | | |
|------------------|----------------------------------|-------------|-------------------------|---------------------|------------------------------------------------|------------------|----------|--|--|
| PHOSPHORUS EMIS | HOSPHORUS EMISSIONS ACTUAL EMISS | | | POTENTIAL EMISSIONS | | | | | |
| | | (AFTER CONT | ROLS / LIMITS) | (BEFORE CON | E CONTROLS / LIMITS) (AFTER CONTROLS / LIMITS) | | | | |
| Source | Pollutant | lb/hr | 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 EMISSIO | NS | ACTUAL E | ACTUAL EMISSIONS | | POTENTIAL EMISSIONS | | | | | |
|------------------|-----------|------------------------------------------------|------------------|----------------|---------------------|---------------------------|----------|--|--|--|
| 1 | | (AFTER CONTROLS / LIMITS) (BEFORE CONTROLS / L | | | | (AFTER CONTROLS / LIMITS) | | | | |
| Source | Pollutant | lb/hr | lb/yr | 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 | | | |

FUEL OIL COMBUSTION EMISSIONS CALCULATOR REVISION G 11/5/2012 - INPUT SCREEN

First amission source / facility data on the "INPUT" tab/screen. The air emission results and summar

the hottom of this screen.

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| Directions: Enter and select information in the boxes that are highlighted in blue: | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| COMPANY NAME: | Carolina Sunrock, LLC | 1 |
| FACILITY ID NUMBER: | 1700016 | 1 |
| PERMIT NUMBER | 10682R00 | |
| FACILITY CITY: | Burlington |]] |
| FACILITY COUNTY: | Caswell |] |
| SPREADSHEET PREPARED BY: | цв | |
| EMISSION SOURCE DESCRIPTION: | No. Co. 18 18 18 18 18 18 18 18 18 18 18 18 18 18 18 18 18 | 1 I |
| EMISSION SOURCE ID NO.: | No. 2 cil-fired Boiler |]. |
| LATEST CONSTRUCTION/MODIFICATION DATE: | 1020 HMA-H2 | |
| SELECT THE TYPE OF BOILER FROM THE LISTS BELOW: | 26 | 1 1 |
| I | | |
| Bollers⇒>100 mmBtu/hr 1 = No. 6 oil-fired, normal firing (U) | Bollers=>100 mmBtu/hr (cont'd) 17 = No. 2 oil-fired (C) |] |
| 2 = No. 8 oil-fired, normal firing (I) | 18 = No. 2 oil-fired, LNB/FGR (U) | |
| 4 = No. 6 oil-fired, normal firing, low Nox-burner (U) | 19 = No. 2 all-fired, LNB/FGR (I) 20 = No. 2 all-fired, LNB/FGR (C) | · |
| 5 = No. 6 cil-fired, normal firing, low Nox burner (I) 6 = No. 6 cil-fired, normal firing, low Nox burner (C) | | . |
| 7 = No. 6 oil-fired, tangential firing (U) | 21 = Vertical fired utility boiler | |
| 8 = No. 6 oil fired, tangential firing, low Nox burner (U) 9 = No. 5 oil-fired, normal firing (U) | Small Boilers <100 mmBtu/hr | |
| 10 = No. 5 oil-fired, normal firing (I) | 22 = No. 6 oil-fired (I) 23 = No. 6 oil-fired (C) | · [|
| 11 = No. 5 oil-fired, tangential firing (U) 12 = No. 4 oil-fired, normal firing (U) | 24 = No. 5 all-fired (C) 25 = No. 4 cil-fired (C) | 1 |
| 13 = No. 4 oil-fired, normal firing (I) | 26 = No. 2 cil-fired (I) | |
| 14 = No. 4 oil-fired, tangential firing (U) 15 = No. 2 oil-fired (U) | 27 = No. 2 oil-fired (C) | |
| 16 = No. 2 oil-fired (I) | 28 = Residential Furnace | |
| Note: The emission factors for fuel oil-fired boilers depend on the boiler size and application ty | the latter of helicities of helicities and heliciti | |
| (producing steam for the generation of electricity), I = industrial bolliers (generating steam or ho or institutional (used for space heating of commercial or institutional facilities) and residential (fib- boller from the lists above. | of water for process heat, electricity generation, or space heat). C = Commercial | |
| <u> </u> | | |
| EMISSION SOURCE INPUT DATA | | |
| MAXIMUM HEAT INPUT (MILLION BTU PER HOUR): | 2.30 MMBTU/HR | |
| ACTUAL ANNUAL FUEL USAGE (GALLONS PER YEAR): | 49,285.7 / GALYR -> 2.3 MMFSTUL | w x3,000 w |
| MAXIMUM ANNUAL FUEL USAGE (GALLONS PER YEAR) | 143,914.3 GAL/YR > 100 (000) 1 | 140000 200 |
| MAXIMUM FUEL SULFUR CONTENT (%): | 0.50 % - (TYPEOVER IF NECESSARY - DEFAULT | |
| FUEL HEATING VALUE | VALUE = 2.1 FOR RESIDUAL FUEL OIL OR 0.5 FOR DISTILLATE FUEL OIL) | |
| FUEL HEATING VALUE (BTU/GAL): DEFAULT WILL APPEAR AS FOLLOWS (not used for Greenhouse Gas calcs - 150,000 BTU/GAL FOR No. 6, 5, and 4 FUEL OIL | 140,000 BTU/GAL -See below for GHG defaults): | |
| | | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) | | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA | Toggins will grapper for each control design that is extended. The | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) | Tencies will appear for each control device that is selected. The user may enter | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA [Note: Select the type of control devices from the pull-down menus below. Default control eff | Tencies will appear for each control device that is selected. The user may enter | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. | | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control eff a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control eff a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: AVERAGE NITROGEN OXIDE CONTROL EFF.: | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: AVERAGE NITROGEN OXIDE CONTROL EFF.: | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: ***RANGOGEN** ***REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: AVERAGE NITROGEN OXIDE CONTROL EFF.: | |
| 140,000 BTUGAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control eff a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 AVERAGE NITROGEN OXIDE CONTROL EFF.: 0 143,914.3 GALYYR | |
| 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: ***RANGOGEN** ***REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 AVERAGE NITROGEN OXIDE CONTROL EFF.: 0 | |
| 140,000 BTUGAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control eff a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 AVERAGE NITROGEN OXIDE CONTROL EFF.: 143,914.3 GALYR 0.50 % | |
| 140,000 BTUGAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL A | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 AVERAGE NITROGEN OXIDE CONTROL EFF.: 143,914.3 GALYR 0.50 % | |
| 140,000 BTUGAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control eff a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL A IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER | AVERAGE SULFUR DIOXIDE CONTROL EFF.: AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 AVERAGE NITROGEN OXIDE CONTROL EFF.: 0 143,914.3 GALYR 0.50 % ND THE MAXIMUM SULFUR CONTENT AS SHOWN | |
| 140,000 BTUGAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL A IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C - | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 AVERAGE NITROGEN OXIDE CONTROL EFF.: 143,914.3 GALYR 0.50 % | |
| 140,000 BTUGAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: | AVERAGE SULFUR DIOXIDE CONTROL EFF.: | |
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| 140,000 BTUGAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control eff a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL A IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C - www.sps.govidlimstechange/smissions/ghguitemaking.html NOTE: EF is "Emission Factor" SINCE TIER 3 IS NOT BEING USED, FUEL CARBON CONTENT WILL NOT BE USED | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 AVERAGE NITROGEN OXIDE CONTROL EFF.: 0 143,914.3 0.50 % ND THE MAXIMUM SULFUR CONTENT AS SHOWN 1.184/11/06/194/194/194/194/194/194/194/194/194/194 | |
| TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF MITROGEN OXIDE CONTROL: TYPE OF MITROGEN OXIDE CONTROL: TYPE OF MITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF POSTCOMBUSTION SULFUR CONTROL TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF POSTCOMBUSTION SULFUR CONTROL TYPE OF POSTCOMBUSTION SULF | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 AVERAGE NITROGEN OXIDE CONTROL EFF.: 0 143,914.3 0.50 % ND THE MAXIMUM SULFUR CONTENT AS SHOWN 1. MAXIMUM SULFUR CONTENT AS SHOWN | |
| 140,000 BTUGAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control eff a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: | AVERAGE SULFUR DIOXIDE CONTROL EFF.: | |
| TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: Marcian | AVERAGE SULFUR DIOXIDE CONTROL EFF.: | |

ATTACHMENT

Distillate Fuel OII No. 2 DEFAULT HHV OF 0.138

FUEL OIL COMBUSTION EMISSIONS CALCULATOR REVISION G 11/5/2012 - 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 continued 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.

| 12.7 | | | | | 1.1 | 44 年 元 |
|---------------------------|-----------------------------|-------------|--------------------------|-------------|---------|-------------|
| COMPANY: | Carolina Sunrock, LLC | | MAX HEAT INPUT: | | 2.30 | MMBTU/HR |
| FACILITY ID NO.: | 1700016 | <u> </u> | FUEL HEAT VALUE: | | 140,000 | BTU/GAL |
| PERMIT NUMBER: | 10682R00 | | HHV for GHG CALCULATI | IONS: | 0.138 | mm BTU/GAL |
| FACILITY CITY: | Burlington | - | ACTUAL ANNUAL FUEL U | JSAGE: | 49,286 | GAL/YR |
| FACILITY COUNTY: | Caswell | | MAXIMUM ANNUAL FUEL | . USAGE: | 143,914 | GAL/YR |
| USER NAME: | LLG | | MAXIMUM SULFUR CONT | TENT; | 0.5 | % |
| EMISSION SOURCE DESCRIPTI | ON: No. 2 ail-fired Bailer | | 7 2 A | | | Quarter Co. |
| EMISSION SOURCE ID NO.: | HMA-H! & HMA-H2 | | MAX. FUEL USAGE: | | 143,914 | GAL/YR |
| | | | MAX. SULFUR CONTENT | : | 0.5 | % |
| | <u>ana dan kualah dalah</u> | | The second of the second | | | |
| | NONE/OTHER | | PM | | 0 | |
| | NONE/OTHER | | SO2 | | 0 | |
| | NONE/OTHER | | NOx | | 0 | |
| METHOD USED TO COMPUTE A | CTUAL GHG EMISSIONS: | TIER 1: DEF | AULT HIGH HEAT VALUE | AND DEFAULT | EF | - |

METHOD USED TO COMPUTE ACTUAL GHG EMISSIONS: CARBON CONTENT USED FOR GHGS (kg C/gal):

TIER 1: DEFAULT HIGH HEAT VALUE AND DEFAULT EF CARBON CONTENT NOT USED FOR CALCULATION TIER CHOSEN

| | ACTUAL EMISSIONS | | | POTENTIAL EN | EMISSION FACTOR | | | |
|------------------------------------------------|------------------|---------------|-----------|-------------------|---------------------------|---------|--------------|----------------------|
| • | (AFTER CONTR | DL9 / LIMITS) | (BEFORE C | ONTROLS / LIMITS) | (AFTER CONTROLS / LIMITS) | | (Ib | 10 ³ gal) |
| AIR POLLUTANT EMITTED | lb/hr | tons/yr | lb/hr | tons/yr | . lb/hr | tons/yr | uncontrolled | controlled |
| TOTAL PARTICULATE MATTER (PM) (FPM+CPM) | 0.05 | 0.08 | 0.05 | 0.24 | 0.05 | 0.24 | 3.30E+00 | 3.30E+00 |
| FILTERABLE PM (FPM) | 0.03 | 0.05 | 0.03 | 0.14 | 0.03 | 0.14 | 2.00E+00 | 2.00E+00 |
| CONDENSABLE PM (CPM) | 0.02 | 0.03 | 0.02 | 0.09 | 0.02 | 0.09 | 1.30E+00 | 1.30E+00 |
| FILTERABLE PM<10 MICRONS (PM ₁₀) | 0.02 | 0.02 | 0.02 | 0.07 | 0.02 | 0.07 | 1.00E+00 | 1.00E+00 |
| FILTERABLE PM<2.5 MICRONS (PM _{2.5}) | 0.00 | 0.01 | 0.00 | 0.02 | 0.00 | 0.02 | 2.50E-01 | 2.50E-01 |
| SULFUR DIOXIDE (SO ₂) | 1.17 | 1.75 | 1.17 | 5.11 | 1.17 | 5.11 | 7.10E+01 | 7.10E+01 |
| NITROGEN OXIDES (NO _x) | 0.33 | 0.49 | 0.33 | 1.44 | 0.33 | 1.44 | 2.00E+01 | 2.00E+01 |
| CARBON MONOXIDE (CO) | 0.08 | 0.12 | 0.08 | 0.36 | 0.08 | 0.36 | 5.00E+00 | 5.00E+00 |
| VOLATILE ORGANIC COMPOUNDS (VOC) | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 2.00E-01 | 2.00E-01 |
| LEAD | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.26E-03 | 1.26E-03 |

| · | | | ACTUAL EI | MISSIONS | | POTENTIAL EN | ASSIONS | • | EMISSION FACTOR | |
|------------------------------------|--------|-----------|--------------|---------------|-----------|-------------------|--------------|----------------|-----------------|------------|
| | | CAS | (AFTER CONTR | OL9 / LIMITS) | (BEFORE C | ONTROLS / LIMITS) | (AFTER CONTE | ICLS / LIMITS) | (the | ′10³ gal) |
| TOXIC / HAZARDOUS AIR POLLUTANT | | NUMBER | ib/hr | lb/yr | lb/hr | lb/yr | lb/hr | lb/yr | uncontrolled | controlled |
| Antimony Unlisted Compounds | (H) | SBC-Other | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.00E+00 | 0.00E+00 |
| Arsenic Unlisted Compounds | (TH) | ASC-Other | 9.2E-06 | 2.8E-02 | 9.2E-06 | 8.1E-02 | 9.2E-06 | 8.1E-02 | 5.60E-04 | 5.60E-04 |
| Benzene | (ITH) | 71432 | 4.5E-05 | 1.4E-01 | 4.5E-05 | 4.0E-01 | 4.5E-05 | 4.0E-01 | 2.75E-03 | 2.75E-03 |
| Beryllium Metal (unreacted) | (TH) | 7440417 | 6.9E-06 | 2.1E-02 | 6.9E-06 | 6.0E-02 | 6.9E-06 | 6.0E-02 | 4.20E-04 | 4.20E-04 |
| Cadium Metal (elemental unreacted) | (HT) | 7440439 | 6.9E-06 | 2.1E-02 | 6.9E-06 | 6.0E-02 | 6.9E-06 | 6.0E-02 | 4.20E-04 | 4.20E-04 |
| Chromic Acid (VI) | (TH) | 7738945 | 6.9E-06 | 2.1E-02 | 6.9E-06 | 6.0E-02 | 6.9E-06 | 6.0E-02 | 4.20E-04 | 4.20E-04 |
| Cobalt Unlisted Compounds | (H) | COC-Other | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.00E+00 | 0.00E+00 |
| Ethylbenzene | (H) | 100414 | 1.3E-05 | 4.0E-02 | 1.3E-05 | 1.2E-01 | 1.3E-05 | 1.2E-01 | 8.17E-04 | 8.17E-04 |
| Fluorides (sum fluoride compounds) | Э | 1698448B | 6.1E-04 | 1.8E+00 | 6.1E-04 | 5.4E+00 | 6.1E-04 | 5.4E+00 | 3.73E-02 | 3.73E-02 |
| Formaldehyde | (TH) | 50000 | 7.9E-04 | 2.4E+00 | 7.9E-04 | 6.9E+00 | 7.9E-04 | 6.9E+00 | 4.80E-02 | 4.80E-02 |
| Lead Unlisted Compounds | E) | PEC-Other | 2.1E-05 | 6.2E-02 | 2.1E-05 | 1.8E-01 | 2.1E-05 | 1.8E-01 | 1.26E-03 | 1.26E-03 |
| Manganese Unlisted Compounds | (H.T.) | MNC-Other | 1.4E-05 | 4.1E-02 | 1.4E-05 | 1.2E-01 | 1.4E-05 | 1.2E-01 | 8.40E-04 | 8.40E-04 |
| Mercury, vapor | (TH) | 7439976 | 6.9E-06 | 2.1E-02 | 6.9E-06 | 6.0E-02 | 6.9E-06 | 6.0E-02 | 4.20E-04 | 4.20E-04 |
| Methyl chloroform | (TH) | 71566 | 3.9E-06 | 1.2E-02 | 3.9E-06 | 3.4E-02 . | 3.9E-06 | 3.4E-02 | 2.36E-04 | 2.36E-04 |
| Napthalene | (H) | 91203 | 5.5E-06 | 1.6E-02 | 5.5E-06 | 4.8E-02 | 5.5E-06 | 4.8E-02 | 3.33E-04 | 3.33E-04 |
| Nickle Metal | (TH) | 7440020 | 6.9E-06 | 2.1E-02 | 6.9E-06 | 6.0E-02 | 6.9E-06 | 6.0E-02 | 4.20E-04 | 4.20E-04 |
| Phosphorus Metal, Yellow or White | (H) | 7723140 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.00E+00 | 0.00E+00 |
| POM rates uncontrolled | (H) | POM | 5.4E-05 | 1.6E-01 | 5.4E-05 | 4.7E-01 | 5.4E-05 | 4.7E-01 | 3.30E-03 | 3.30E-03 |
| Selenium compounds | (H) | SEC | 3.5E-05 | 1.0E-01 | 3.5E-05 | 3.0E-01 | 3.5E-05 | 3.0E-01 | 2.10E-03 | 2.10E-03 |
| Toluene | (TH) | 108883 | 1.3E-03 | 3.9E+00 | 1.3E-03 | 1.1E+01 | 1.3E-03 | 1.1E+01 | 7.97E-02 | 7.97E-02 |
| Xylene | (TH) | 1330207 | 2.3E-05 | 6.9E-02 | 2.3E-05 | 2.0E-01 | 2.3E-05 | 2.0E-01 | 1.40E-03 | 1.40E-03 |
| Total HAP | (H) | | 2.4E-03 | 7.1E+00 | 2.4E-03 | 2.1E+01 | 2.4E-03 | 2.1E+01 | 1.4E-01 | 1.4E-01 |
| Largest HAP | (H) | | 1.31E-03 | 3.93E+00 | 1.31E-03 | 1.15E+01 | 1.31E-03 | 1.15E+01 | 7.97E-02 | 7.97E-02 |

| | EXPE | CTED ACTUAL EM | ISSIONS AFTER CONTROLS / LIMI | TATIONS | | EMISSION FACTOR (lb/10 ³ gal) | | |
|---------------------------------------------|------|----------------|-------------------------------|----------|-----------|---------------------------------------------|------------|--|
| TOXIC AIR POLLUTANT | | CAS Num. | lb/hr | lb/day | lb/yr | uncontrolled | controlled | |
| Arsenic Unlisted Compounds | (TH) | ASC-Other | 9.20E-06 | 2.21E-04 | 8.06E-02 | 5.60E-04 | 5.60E-04 | |
| Benzene | (TH) | 71432 | 4.52E-05 | 1.08E-03 | 3.96E-01 | 2.75E-03 | 2.75E-03 | |
| Beryllium Metal (unreacted) | (HT) | 7440417 | 6.90E-06 | 1.66E-04 | 6.04E-02 | 4.20E-04 | 4.20E-04 | |
| Cadium Metal (elemental unreacted) | (TH) | 7440439 | 6.90E-06 | 1.66E-04 | 6.04E-02 | 4.20E-04 | 4.20E-04 | |
| Soluble chromate compounds, as chromium (VI | (TH) | SolCR6 | 6.90E-06 | 1.66E-04 | 6.04E-02 | 4.20E-04 | 4.20E-04 | |
| Fluorides (sum fluoride compounds) | E | 16984488 | 6.13E-04 | 1.47E-02 | 5.37E+00 | 3.73E-02 | 3.73E-02 | |
| Formaldehyde | (TH) | 50000 | 7.89E-04 | 1.89E-02 | 6.91 E+00 | 4.80E-02 | 4.80E-02 | |
| Menganese Unlisted Compounds | (TH) | MNC-Other | 1.38E-05 | 3.31E-04 | 1.21E-01 | 8.40E-04 | 8.40E-04 | |
| Mercury, vapor | (TH) | 7439976 | 6.90E-06 | 1.66E-04 | 6.04E-02 | 4.20E-04 | 4.20E-04 | |
| Methyl chloroform | (TH) | 71566 | 3.88E-06 | 9.31E-05 | 3.40E-02 | 2.36E-04 | 2.36E-04 | |
| Nickle Metal | (TH) | 7440020 | 6.90E-06 | 1.66E-04 | 6.04E-02 | 4.20E-04 | 4.20E-04 | |
| Toluene | (TH) | 108883 | 1.31E-03 | 3.14E-02 | 1.15E+01 | 7.97E-02 | 7.97E-02 | |
| Xylene | (TH) | 1330207 | 2.30E-05 | 5.52E-04 | 2.02E-01 | 1.40E-03 | 1.40E-03 | |

| | | <u>ACTUAL EMISSIONS</u> | | POTENTIAL EMISSIONS | S - utilize max heat | POTENTIAL E | MISSIONS With |
|-----------------------------------|----------------|-------------------------|---------------|---------------------------------|------------------------|-------------------|------------------------------------|
| GREENHOUSE GAS | EPA N | MRR CALCULATION METH | OD: TIER 1 | input capacity and EP Factor | | utilize requested | fuel limit and EPA sion Factors |
| POLLUTANT | metric tons/yr | metric tons/yr, CO2e | short tons/yr | short tons/yr | short tons/yr, CO2e | short tons/vr | short tons/yr, CO2e |
| CARBON DIOXIDE (CO ₂) | 503.03 | 503.03 | 554.50 | 1,642.60 | 1,642.60 | 1,642.60 | 1,642.60 |
| METHANE (CH ₄) | 2.04E-02 | 4.28E-01 | 2.25E-02 | 6.66E-02 | 1.40E+00 | 6.66E-02 | 1.40E+00 |
| NITROUS OXIDE (N₂O) | 4.08E-03 | 1.27E+00 | 4.50E-03 | 1.33E-02 | 4.13E+00 | 1.33E-02 | 4.13E+00 |
| | TOTAL | 504.73 | | TOTAL | 1,648.13 | TOTAL | 1,648.13 |

ALTUAL SON ? CO EMISSIONS / TAP EMISSIONS

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 INPUT SCREEN



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.: | 1700016 |
| Permit No.: | 10628R00 |
| Facility City: | Burlington |
| Facility County: | Caswell |
| Spreadsheet Prepared by: | LTĞ |

| | oreadsheet b missions inv | | 2 NO | | | |
|------------|------------------------------|--------------------|--------------------|---|------------------|---------|
| first area | Plant type: | Drum mix | | 2 | | |
| X | Fuel type: | Waste, No.4 or N | o.6 fuel all-fired | | | |
| 5 | Fuel Suif | ur Content: | 0.50 | % | (default value i | s 0.5 % |
| • | Controls: | Fabric filter cont | rols | | | |

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

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

| F= | | | |
|----------|------|--|--------|
| Silo | i.ee | | ELECT. |
| Filling? | TES | | |

| RAP crushing site? | on _{YES} | XI | |
|-------------------------|-------------------|-------------------|---|
| Crushing Capacity? 65 | tons per hour | No. of crushers: | 1 |
| Hours of operation: 876 | 0 hours per yea | r No. of screens: | 1 |
| | | No. of conveyors: | 4 |

| Asphalt Cement Heater | | |
|-----------------------|------|----------------------|
| AC heater heat input: | 2.3 | million Btu per hour |
| Fuel Sulfur Content: | 0.50 | % |
| Hours of operation: | 8760 | hours per vear |

(No.2 or diesel fuel oil -fired assumed) (default value is 0.5 %) (default is 8760 hours per year unless specified otherwise)

| Calculated Annual Production Limit: | 1,488,581 | tons per year |
|-------------------------------------|-----------|---------------|
| Requested Annual Production Limit | | tóns per year |
| Requested Daily Production Limit | 6,000 | tons per day |

(if none desired leave default value =8760*tph) (if none desired leave default value = 24*tph)

| | | the state of the s |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Is this plant NSPS Subpart I affected? | YES | |
| Stack gas flow rate: | 68,145 | ACFM |
| Stack gas temperature : | 240 | oF |
| Stack % moisture: | 33 | % |
| Allowable emission rate under NSPS Subpart I: | 11.81 | lb/hr |
| Control efficiency required: | 99.831 | % |
| Does Method 5 data already exist?: | | |
| अस्तर प्रशासक कार्यक के स्वाप्त कर है। अस्तर के स्वाप्त के प्रशासक के प्रशासक के प्रशासक के प्रशासक के प्रशासक | (1) XE 00 | (A. C. |
| Aller | | In a |

| 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 | % |

* SYNTHETIC MINON LIMITS?

ATTACHMENT EI

| i e | | | | | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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| Pollutant | Uncontrolled Emission Factor (lb/ton) | Controlled Emission Factor (lb/ton) | uncontrolled e | | controlled emission rate (lb/hr) | Title V, Potential Emissions ((no controls, 8760 hours per operation) | | introls, 8760 | Synthetic Minor, Potential Emissions (with all operation restrictions) |
| Condensible PM (or PM ₁₀) | 0.0654 | 0.0194 | 16. | 35 | 4.85 | | umumumi | 11111111 | |
| Filterable PM | - | 0.014 | 700 | 00 | 3.5 | | HHHHH | 1111111 | |
| Filterable PM10 | 6.4 | 0.0039 | 160 | 00 | 0.975 | | | 1111111 | |
| Total PM | 28 | 0.033 | 700 | 00 | 8.25 | 73.0 | 36 | .1 | 8.3 |
| Total PM10 | | 0.023 | 162 | 25 | 5.75 | 33.1 | 25 | .2 | 5.8 |
| 802 | | 0.0837 | 20. | | 20.93 | 91.69 | 91 | 69 | 20.93 |
| CO | ; | 0.130 | 32 | | 32.5 | 142.4 | . 14: | | 32.5 |
| . NOx | 0.0550 | 0.055 | 13. | | 13.75 | 60.2 | 60 | | 13.8 |
| VOC | | 0.032 | 8 | | 8 | 35.0 | 35 | | 8.0 |
| HAPs, TOTAL | ******* | 0.010 | | | 2.5 | 11.0 | 11 | | 2.5 |
| Silo Filling plus Loa | d Out Emiss | sions, Crite | ria Pollutan | ts | | | | | |
| | Emission | | | | | | | | |
| D.II. | Factor, combined (lb/ton) | | | | emission rate (lb/hr) | Title V, Potential Emissions ((no controls, 8760 hours per operation) | | ours per year | Synthetic Minor, Potential Emissions (i (with all operation restrictions) |
| Pollutant | | | | ********* | A 27E A4 | 1. | | | |
| Total PM | | 11111111 | <i>HHHHH</i> | XIIIIIIX | 2.77E-01 | 1.2 | 1. | | 0.3 |
| CO | | MIIIII | uuuuu | HIIIII | 6,32E-01 | 2.8 | 2. | | 0.6 |
| · voc | | 111111111 | <i>HHHHH</i> | HIIIII | 4.02E+00 | 17.6 | 17 | | 4.0 |
| HAPs, TOTAL | 2.74E-04 | | | | 6.85E-02 | 0.3 | 0. | 3 | 0.1 |
| Rap Crusher Emissi | ions | | | | | | | | |
| ļ | Emission | İ | | | | | <u> </u> | | T |
| | Factor, all sources combined | | • | . [| emission rate (lb/hr) | Title V, Potential Emissions ((no controls, 8760 hours per operation) | | ours per year | Synthetic Minor, Potential Emissions (I (with all operation restrictions) |
| Pollutant | (lb/ton) | | ********** | | | <u> </u> | | - | |
| . Total PM | | | | | 2.76E+00 | 12.1 | 12 | | 2.8 |
| Total PM10 | 0.0155 | | | | 1.01E+00 | 4.4 | 4. | 4 | 1.0 |
| Asphalt Cement Hea | ater Emissio | ns | | | | | | ** | |
| ! | Uncontrolled | | | _ | | Time V. Bernard Coloring | | | |
| Pollutant | Emission Factor (lb/MMBtu) | | | | emission rate (lb/hr) | "Title V, Potential Emissions ((no controls, 8760 hours per operation) | | ours per year | Synthetic Minor, Potential Emissions (t (with all operation restrictions) |
| Total PM | 0.0235714 | dillilli. | THINING THE | <i>ullilli</i> | 5.42E-02 | 0.2 | 0. | 2 | 0,2 |
| Total PM10 | 0.0235714 | Milli | HHHH | KIIIIIK | 5.42E-02 | 0.2 | 0. | 2 | 0.2 |
| SO2 | | HHHH | HHHH | MILLIA | 1.17E+00 | 5.1 | 5. | 1 | 5,1 |
| co | - | 44444 | <i>HHHH</i> | MHHHH | 8.21E-02 | 0.4 | 0. | | 0.4 |
| NOx | | 444444 | HHHH | HHHH | 3.29E-01 | 1.4 | 1. | | 1.4 |
| voc | | 444444 | 44444 | 4444444 | 5.59E-03 | 0.0 | 0. | | 0.0 |
| .00 | 0.002 1200 | | | | | <u> </u> | - : | - | 35 3 |
| | o Dollutant F | Emissions | Summary | | | | • | | |
| Facility-wide Criteria | a Pullulaiil E | | | | | 1.7 | | | 5 5 |
| | a Politicani i | | | | Controlled Emission Rate, lb/hr | Title V, Potential Emissions ((no controls, 8760 hours per | year (tpy) (8760 h | ours per year | Synthetic Minor, Potential Emissions (t (with all operation restrictions) |
| Pollutant | | | | XIIIIIII | lb/hr | Title V, Potential Emissions ((no controls, 8760 hours per operation) | year (tpy) (8760 h opera | ours per year ition) | (with all operation restrictions) |
| Pollutant Total PM | | | | | lb/hr 1.11E+01 | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 | year (tpy) (8760 h opera | ours per year ition) | (with all operation restrictions) |
| Pollutant Total PM Total PM10 | | | | | lb/hr 1.11E+01 6.81E+00 | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 | year (tpy) (8760 h opers 49 | ours per year ution) .7 | (with all operation restrictions) 11.5 7.3 |
| Pollutant Total PM Total PM10 SO2 | | | | | 1.11E+01 6.81E+00 2.21E+01 | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 96.8 | year (tpy) (8760 hr opers 49 31 | ours per year ition) .7 .0 | (with all operation restrictions) 11.5 7.3 26.0 |
| Pollutant Total PM Total PM10 SO2 CO | | | | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 | Title V, Potential Emissions (no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 | (tpy) (8760 his opera 49 31 96 144 | ours per year oution) .7 .0 .8 | (with all operation restrictions) 11.5 7.3 26.0 33.5 |
| Pollutant Total PM10 Total PM10 SO2 CO NOx | | | | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 | Title V, Potential Emissions (no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 | (tpy) (8760 his operation of the control operation | .7 .0 .8 5.5 | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 |
| Pollutant Total PM Total PM10 SO2 CO NOx VOC | | | | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 | Title V, Potential Emissions (no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 | (tpy) (8760 his operation of the control operation opera | .7 .0 .8 5.5 .7 | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 |
| Pollutant Total PM Total PM10 SO2 CO NOx VOC HAPS, TOTAL | | | | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 | Title V, Potential Emissions (no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 | (tpy) (8760 his operation of the control operation | .7 .0 .8 5.5 .7 | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 |
| Pollutant Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL | | | | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 | Title V, Potential Emissions (no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 | (tpy) (8760 his operation of the control operation opera | .7 .0 .8 5.5 .7 | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 |
| Pollutant Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic | Air Pollutant | ts Summar | Action | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 | Title V, Potential Emissions (no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 | year (tpy) (8760 hr opers 48 31 96 144 61 52 11 | ours per year tition) .7 .0 .8 .5.5 .7 .7 .3 | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 |
| Pollutant Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic | Air Pollutant | ts Summar CAS No. 75070 | Action NOTE 1 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | Title V, Potential Emissions (no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 | year (tpy) (8760 h opers 49 31 96 144 61 52 111 5 No. Action 9976 NOTE 3 | ours per year tition) .7 .0 .8 .5.5 .7 .7 .3 | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 |
| Pollutant Total PM Total PM10 S02 CO NOx VOC HAPS, TOTAL Facility-wide Toxic A | Air Pollutant etaldehyde (TH) Acrolein (TH) | CAS No. 75070 107028 | Action NOTE 1 NOTE 1 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | Title V, Potential Emissions (no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Wethyl ethyl ketone (TH) 778 | year (tpy) (8760 hr opers 49 31 96 144 61 52 11 6 No. Action 9976 NOTE 3 933 NOTE 1 | Durs per year (tion) .7 .0 .8 .5.5 .7 .7 .3 | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 acclude TAP in TPER stipulation |
| Pollutant Total PM Total PM10 S02 CO NOx VOC HAPS, TOTAL Facility-wide Toxic A | Air Pollutant etaldehyde (TH) Acrolein (TH) D. of ASC) (TH) | CAS No. 75070 107028 ASC-other | Action NOTE 1 NOTE 1 NOTE 3 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Methyl eithyl ketone (TH) 75 Methylene chloride (TH) 75 | year (tpy) (8760 h opers 49 31 96 14 61 52 11 6 No. Action 9976 NOTE 3 933 NOTE 1 092 NOTE 1 | NOTE 1: Ir | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 Clude TAP in TPER stipulation |
| Pollutant Total PM Total PM10 S02 C0 NOx VOC HAPS, TOTAL TAP Ace | Air Pollutant Acrolein (TH) D. of ASC) (TH) Benzene (TH) | CAS No. 75070 107028 ASC-other 71432 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 744 Methyl ethyl ketone (TH) Nickel metal (TH) 744 | year (tpy) (8760 h opers) 49 31 96 14 61 52 11 S No. Action 9976 NOTE 3 933 NOTE 1 092 NOTE 1 0020 NOTE 3 | NOTE 1: Ir | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 acclude TAP in TPER stipulation |
| Pollutant Total PM Total PM10 SO2 CO NOX VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace | Air Pollutant Acrolein (TH) D. of ASC) (TH) Benzene (TH) zo(a)pyrene (T) | CAS No. 75070 107028 ASC-other 71432 50328 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Methyl ethyl ketone (TH) 78 Methylene chloride (TH) 78 Nickel metal (TH) 744 etrachloroethylene) (TH) 127 | year (tpy) (8760 h opers 48 31 96 144 61 52 11 65 No. Action 9976 NOTE 3 933 NOTE 1 092 NOTE 3 NOTE 3 NOTE 3 NOTE 3 NOTE 3 | NOTE 2: Ir with opera | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation restrictions. |
| Pollutant Total PM Total PM10 S02 C0 NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace senic unlisted cmpds (comp | Air Pollutant etaldehyde (TH) Acrolein (TH) Do of ASC) (TH) Benzene (TH) Edglypree (T) unreacted) (TH) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Methyl ethyl ketnoe (TH) 78 Nickel metal (TH) 74 etrachloroethylane) (TH) 102 Phenol (TH) 106 | year (tpy) (8760 h opers 48 31 96 144 61 52 11 5 No. Action 9976 NOTE 3 933 NOTE 1 902 NOTE 3 NOTE 1 0020 NOTE 3 1184 NOTE 1 NOTE 1 | NOTE 1: Ir WOTE 3: NOTE 3: NOT | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 actude TAP in TPER stipulation restrictions. Include TAP in TPER stipulation restrictions. |
| Pollutant Total PM Total PM Total PM Total PM SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace senic unlisted cmpds (comp Benz Beryllium metal (alemental a | Air Pollutant etaldehyde (TH) Acrolein (TH) Denzene (TH) Benzene (TH) zd(a)pyrene (TH) unreacted) (TH) unreacted) (TH) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 7440439 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 1 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Methylene chloride (TH) 78 Methylene chloride (TH) 74 Phenol (TH) 100 unds as Chrome VI (TH) 773 | (tpy) (8760 h operation op | NOTE 1: Ir WOTE 3: NOTE 3: NOT | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation restrictions. |
| Pollutant Total PM Total PM10 S02 C0 NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace senic unlisted cmpds (comp Benz Beryllium metal (clemental to | Air Pollutant Acrolein (TH) D. of ASC) (TH) Benzene (TH) zunaparted) (TH) unreacted) (TH) un disulfide (TH) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 2 NOTE 1 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Methylene chloride (TH) 75 Nickel metal (TH) 12: Phenol (TH) 10: ands as Chrome VI (TH) 10: Styrene (TH) 10: | year (tpy) (8760 h opers) 49 31 96 144 61 52 111 5 No. Action 9976 NOTE 3 933 NOTE 1 092 NOTE 1 0020 NOTE 3 NOTE 1 0020 NOTE 3 NOTE 1 0020 NOTE 1 NOTE 1 0020 NOTE 1 | NOTE 1: Ir WOTE 3: NOTE 3: NOT | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 acclude TAP in TPER stipulation restrictions. Include TAP in TPER stipulation restrictions. |
| Pollutant Total PM Total PM10 S02 C0 NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace senic unlisted cmpds (comp Benz Beryllium metal (clemental to | Air Pollutant etaldehyde (TH) Acrolein (TH) Denzene (TH) Benzene (TH) zd(a)pyrene (TH) unreacted) (TH) unreacted) (TH) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 7440439 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 2 NOTE 1 NOTE 3 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Methylene chloride (TH) 75 Nickel metal (TH) 12: Phenol (TH) 10: ands as Chrome VI (TH) 10: Styrene (TH) 10: | year (tpy) (8760 hr opers) 45 31 96 144 61 52 111 6 No. Action 9976 NOTE 3 933 NOTE 1 092 NOTE 1 0020 NOTE 3 7184 NOTE 1 8052 NOTE 1 8054 NOTE 1 8056 NOTE 1 8056 NOTE 1 8056 NOTE 1 8056 NOTE 1 8057 NOTE 1 8058 NOTE 1 8058 NOTE 1 8058 NOTE 1 8059 NOTE 1 8051 NOTE 1 | NOTE 1: Ir WOTE 3: NOTE 3: NOT | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 acclude TAP in TPER stipulation restrictions. Include TAP in TPER stipulation restrictions. |
| Pollutant Total PM Total PM10 S02 C0 NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace senic unlisted cmpds (comp Benz Beryllium metal (clemental to | Air Pollutant Arolein (TH) Acrolein (TH) D. of ASC) (TH) Benzene (TH) zu(a)pyrene (T) unreacted) (TH) unreacted) (TH) unreacted) (TH) middehyde (TH) | CAS No. 75070 107028 A9C-other 71432 50328 7440417 7440439 75150 50000 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 2 NOTE 1 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Methyl ethyl ketone (TH) 75 Nickel metal (TH) 744 etrachloroethylane) (TH) 121 phenol (TH) 102 styrene (TH) 104 | year (tpy) (8760 h opers) 49 31 96 144 61 52 111 6 No. Action 9976 NOTE 3 933 NOTE 1 0020 NOTE 1 | NOTE 1: Ir WOTE 3: NOTE 3: NOT | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 acclude TAP in TPER stipulation restrictions. Include TAP in TPER stipulation restrictions. |
| Pollutant Total PM Total PM Total PM10 SO2 CO NOx VOC HAPS, TOTAL Facility-wide Toxic A TAP Ace senic unlisted cmpds (comp Benzyllium metal (L Carbon Form dexachtorodibenzo-p-dioxin 1 | Air Pollutant Arolein (TH) Acrolein (TH) D. of ASC) (TH) Benzene (TH) zu(a)pyrene (T) unreacted) (TH) unreacted) (TH) unreacted) (TH) middehyde (TH) | CAS No. 75070 107028 A9C-other 71432 50328 7440417 7440439 75150 50000 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 2 NOTE 1 NOTE 3 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | Title V, Potential Emissions ((no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Wethyl ethyl ketone (TH) 744 ethyl ethyl ketone (TH) 75 Nickel metal (TH) 744 ethylene (TH) 100 ethyl ethyl ketone (TH) 174 ethylene (TH) 100 ethyl ethyl ketone (TH) 174 ethyl ethy | year (tpy) (8760 hr opers) 45 31 96 144 61 52 111 6 No. Action 9976 NOTE 3 933 NOTE 1 092 NOTE 1 0020 NOTE 3 7184 NOTE 1 8046 NOTE 1 8046 NOTE 1 8046 NOTE 1 8046 NOTE 1 | NOTE 1: Ir WOTE 3: NOTE 3: NOT | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 acclude TAP in TPER stipulation restrictions. |
| Pollutant Total PM Total PM Total PM Total PM Total PM SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace senic unlisted cmpds (comp Benz Beryllium metal (L Carbon Form Lexachlorodibenzo-p-dioxin 1 | etaldehyde (TH) Acrolein (TH) D. of ASC) (TH) Benzene (TH) Equipment (T) unreacted) (TH) In disulfide (TH) maldehyde (TH) 1,2,3,6,7,8 (TH) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 7440439 75150 50000 57653857 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | Title V, Potential Emissions (no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Methyl ethyl ketone (TH) 75 Nickel metal (TH) 744 etrachloroethylene) (TH) 102 Phenol (TH) 103 styrene (TH) 104 -p-dioxin, 2,3,7,8- (TH) 174 Toluene (TH) 104 Trichloroethylene (TH) 179 | year (tpy) (8760 h opers) 49 31 96 144 61 52 111 6 No. Action 9976 NOTE 3 933 NOTE 1 0020 NOTE 1 | NOTE 1: Ir WOTE 3: NOTE 3: NOT | (with all operation restrictions) 11.5 7.3 26.0 33.5 15.2 12.0 2.6 acclude TAP in TPER stipulation restrictions. |
| Pollutant Total PM Total PM Total PM Total PM Total PM SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace senic unlisted cmpds (comp Benz Beryllium metal (L Carbon Form Lexachlorodibenzo-p-dioxin 1 | Air Pollutant etaldenyde (TH) D. of ASC) (TH) Benzene (TH) zo(a)pyrene (T) unreacted) (TH) unreacted) (TH) in disulfide (TH) 1.2.3,6.7,8 (TH) Hexane, n- (TH) ogen Sulfide (T) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 7440439 75150 50000 57653857 110543 7783064 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 2 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 | | 1.11E+01 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | Title V, Potential Emissions (no controls, 8760 hours per operation) 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS Mercury, vapor (TH) 743 Methyl ethyl ketone (TH) 75 Nickel metal (TH) 744 etrachloroethylene) (TH) 102 Phenol (TH) 103 styrene (TH) 104 -p-dioxin, 2,3,7,8- (TH) 174 Toluene (TH) 104 Trichloroethylene (TH) 179 | (tpy) (8760 h opers 49 31 96 144 61 52 11 6No. Action 9976 NOTE 3 933 NOTE 1 902 NOTE 1 902 NOTE 1 9042 NOTE 1 8045 NOTE 1 8046 NOTE 1 | NOTE 1: Ir WOTE 3: NOTE 3: NOT | 11.5 7.3 26.0 33.5 15.2 12.0 2.6 acclude TAP in TPER stipulation. Include TAP in TPER stipulation restrictions. |

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 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.

| MECO ** TETHER * ※ ※ 第 第2300 - 知识11 (1992) | and grafter our | | | | di Nekaj k | (Alterial | | | | |
|-----------------------------------------------------|-----------------|---------------------------------------------------------------------------------|------------|---------|-------------------------------------|-----------|---------|--|--|--|
| COMPANY: Carolina Sunrock, LLC | | | | | | NO.: | 1700016 | | | |
| | PERMIT NUMBER: | | 10628R00 | | | | | | | |
| EMISSION SOURCE DESCRIPTION: NSPS affected 250 | | | Burlington | | | | | | | |
| plant (80 mmBtu/h | FACILITY C | OUNTY: | Caswell | | | | | | | |
| Annual Production Limit: 500,000 ton/yea | r Daily Produ | ction Limit: | ,, ,, | 'a | ton/day | • | | | | |
| SPREADSHEET PREPARED BY: LLG | | 4 | | 4 | | | | | | |
| | | 7 7 7 2 2 2 | | | | (Ab) ×35. | | | | |
| AIR POLLUTANT EMITTED | | ACTUAL EMISSIONS POTENTIAL (AFTER CONTROLS / LIMITS) (BEFORE CONTROLS / LIMITS) | | | EMISSIONS (AFTER CONTROLS / LIMITS) | | | | | |
| | lb/hr | tons/yr | lb/hr | tons/yr | lb/hr | tons/yr | | | | |
| PARTICULATE MATTER (PM) | 11.06 | 11.52 | | 86.48 | | 11.52 | | | | |
| PARTICULATE MATTER<10 MICRONS (PM ₁₀) | 6.81 | 7.27 | | 38.93 | | 7.27 | | | | |
| PARTICULATE MATTER<2.5 MICRONS (PM _{2.5}) | | | | | XIIIIIIX | | | | | |
| SULFUR DIOXIDE (SO2) | √ 22.10 | 26.04 | | 96.80 | | 26.04 | | | | |
| NITROGEN OXIDES (NOx) | 14.08 | 15.19 | | 61.66 | | 15.19 | | | | |
| CARBON MONOXIDE (CO) | 33.21 | / 33.49 | | 145.48 | | 33.49 | | | | |
| VOLATILE ORGANIC COMPOUNDS (VOC) | 12.03 | 12.05 | | 52.69 | | 12.05 | | | | |
| TOTAL HAP | 2.57 | 2.57 | VIIIIIIII. | 11.25 | | 2.57 | | | | |
| LARGEST HAP (formaldehyde) | 0.80 | 0.80 | | 3.49 | | 0.80 | | | | |
| Attach INPUT worksheet | | | | | | | | | | |

EMISSION FACTOR ACTUAL EMISSIONS POTENTIAL EMISSIONS (lb/ton asphalt produced, CAS TOXIC / HAZARDOUS AIR POLLUTANT (AFTER CONTROLS / LIMITS) (BEFORE CONTROLS / LIMITS) (AFTER CONTROLS / LIMITS) with Fabric filter controls) Number lb/уг lb/hr lb/hr lb/yr lb/hr lb/yr Acetaldehyde (TH 75070 2847.00 3.25E-01 1.3E-03 3.25E-01 6.50E+02 3.25E-01 6.50E+02 2.6E-05 Acrolein (TH 107028 1.30E+01 6.50E-03 56.94 6.50E-03 1.30E+01 6.50E-03 Antimony unlisted compounds (H) SBC-other 4.50E-05 9.00E-02 4.50E-05 0.39 4.50E-05 9.00E-02 1.8E-07 5.6E-07 Arsenic unlisted cmpds (comp. of ASC) (TH) ASC-other 1.40E-04 2.80E-01 1.40E-04 1.23 1.40E-04 2.80E-01 4.0E-04 Benzene (TH 71432 9.90E-02 1.98E+02 9.90E-02 867.38 9.90E-02 1.98E+02 1 8F-08 Benzo(a)pyrene (T 50328 4.41E-06 8.82E-03 4.41E-06 0.04 4.41E-06 8.82E-03 Bervilium metal (unreacted) (TH) 7440417 0.00E+00 0.00E+00 0.00 0.00E+00 0.0E+00 0.00E+000.00E+00 Cadmium metal (elemental unreacted) (TH) 4.1E-07 7440439 1.03E-04 2.05E-01 1.03E-04 0.90 1.03E-04 2.05E-01 2.5E-06 Carbon disulfide (TH 75150 6.23E-04 1.25E+00 6.23E-04 5.45 6.23E-04 1.25E+00 Chromium unlisted cmpds (add w/chrom acid to get CRC) (H 5.1E-06 CRC-other 1.26E-03 2.53E+00 1.26E-03 11.06 1.26E-03 2.53E+00 Chromic acid (VI) (component of solCR6 and CRC) (TH 7738945 4.5E-07 1.13E-04 2.25E-01 1.13E-04 0.99 1.13E-04 2.25E-01 Cobalt unlisted compounds (H) 2.6E-08 COC-other 6.50E-06 1.30E-02 6.50E-06 0.06 6.50E-06 1.30E-02 4.6F-06 Cumene (H 98828 1.14E-03 2.29E+00 1.14E-03 10.02 1.14E-03 2.29E+00 Ethyl benzene (H) 100414 1.28E+02 6.41E-02 561.24 6.41E-02 1.28E+02 2.6E-04 6.41F-02 Ethyl chloride (chloroethane) (H 8.7E-09 75003 2.18E-06 4.37E-03 2.18E-06 0.02 2.18E-06 4.37E-03 Formaldehyde (TH) 3.2E-03 50000 7.97E-01 1.59E+03 7.97E-01 6981.17 7.97E-01 1.59E+03 Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) 57653857 1.3E-12 6.50E-07 3.25E-10 0.00 3.25E-10 6.50E-07 3.25E-10 Hexane, n- (TH) 110543 2.39E-01 4.78E+02 2.39E-01 2095.50 2.39E-01 4.78E+02 9.6E-04 Hydrogen Chloride (hydrochloric acid) (TH) 2.1E-04 5.25E-02 5.25E-02 7647010 5.25E-02 1.05E+02 459.90 1.05E+02 Hydrogen Sulfide (T 7783064 1.37E-02 2.74E+01 1.37E-02 119.84 1.37E-02 2.74E+01 5:5E-05 Lead unlisted compounds (H) PBC-other 3.75E-03 7.50E+00 3.75E-03 32.85 3.75E-03 7.50E+00 1.5E-05 Manganese unlisted compounds (T MNC-other 1.93F-03 16.86 3.85E+00 7.7E-06 1.93E-03 3.85E+00 1.93F-03 2.6E-06 Mercury, vapor (TH 7439976 6.50E-04 1.30E+00 6.50E-04 5.69 6.50E-04 1.30E+00 Methyl bromide (H 74839 2.49E-04 4.98E-01 2.49E-04 2.18 2.49E-04 4.98E-01 1.0E-06 6.2E-07 Methyl chloride (H 1.56E-04 1.37 1.56E-04 74873 1.56E-04 3.12F-01 3.12E-01 Methyl chloroform (TH 71556 1.20E-02 2.40E+01 1.20E-02 105.12 1.20E-02 2.40E+01 4.8E-05 Methyl ethyl ketone (TH) 78933 6.70E-03 1.34E+01 6.70E-03 58.67 6.70E-03 1.34E+01 2.7E-05 75092 3.3E-08 Methylene chloride (TH 1.65E-02 8.23E-06 8.23E-06 0.07 8.23E-06 1.65E-02 Napthalene (H 91203 1.65E-01 3.29E+02 1.65E-01 1442.95 1.65E-01 3.29E+02 6.6E-04 Nickel metal (TH) 7440020 1.58E-02 3.15E+01 1.58E-02 137.97 1.58E-02 3.15E+01 6.3E-05 Perchloroethylene (tetrachloroethylene) (TH 3.2E-07 127184 1.60E-01 8.01E-05 8.01E-05 8.01E-05 0.70 1.60E-01 4.0E-06 Phenol (TH 108952 1.01E-03 2.01E+00 1.01E-03 8.81 1.01E-03 2.01E+00 2.8E-05 Phosphorus Metal, Yellow or White (H) 7723140 7.00E-03 1.40E+01 7.00E-03 61.32 7.00E-03 1.40E+01 Polycyclic Organic Matter (H POM 2.20E-01 4.40E+02 2.20E-01 1927.20 2.20E-01 4.40E+02 8.8E-04 1.3E-04 Propionaldehyde (H 123386 3.25E-02 6.50E+01 3.25E-02 284.70 3.25E-02 6.50E+01 1.6E-04 Quinone (H 106514 4.00E-02 8.00E+01 4.00E-02 350.40 4.00E-02 8.00E+01 Selenium compounds (H SEC 1.75E-01 8.75E-05 0.77 8.75E-05 1.75E-01 3.5E-07 8.75E-05 9.6E-07 4.81E-01

Styrene (TH) 100425 2.40E-04 4.81E-01 2.40E-04 2.11 2.40E-04 4

SELOW STUTHETIC MINON UMITS OF 100 TONS /YR, EACH

| T-4 | 47.400.40 | | | | | | | 0.45.45 | | | |
|-------------------------------------------------------------|---------------------------|-------------|------------|----------|---------------------------------------|--------------------|-----------|------------------------------|--|--|--|
| Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH) | 1746016 | 5.25E-11 | 1.05E-07 | 5.25E-11 | 0.00 | 5.25E-11 | 1.05E-07 | 2.1E-13 | | | |
| Toluene (TH) | 108883 | 7.29E-01 | 1.46E+03 | 7.29E-01 | 6386.67 | 7.29E-01 | 1.46E+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 | | | |
| Trimethylpentane, 2,2,4- (H) | 540841 | 1.00E-02 | 2.01E+01 | 1.00E-02 | 87.85 | 1.00E-02 | 2.01E+01 | 4.0E-05 | | | |
| Xylene (TH) | 1330207 | 6.04E-02 | 1.21E+02 | 6.04E-02 | 528.72 | 6.04E-02 | 1.21E+02 | 2.4E-04 | | | |
| Xylene, o- (Ḥ) | 95476 | 2.57E-03 | 5.14E+00 | 2.57E-03 | 22.50 | 2.57E-03 | 5.14E+00 | 1.0E-05 | | | |
| <u>(2)</u> - 2007 (10 10 10 10 10 10 10 10 10 10 10 10 10 1 | أحمد أبأه | | | | | | | | | | |
| • | | | | | | | | | | | |
| Expected actual emissions after control | (lb/ton asphalt produced, | | | | | | | | | | |
| | | | | | | | | | | | |
| TOXIC AIR POLLUTANT | CAS Num. | lb/hr | lb/day | lb/yr | Modeling Required? | | | with Fabric filter controls) | | | |
| Acetaldehyde (TH) | 75070 | 3.25E-01 | 7.80E+00 | 6.50E+02 | NO. Based on facility-wide potential. | | | 1.30E-03 | | | |
| Acrolein (TH) | 107028 | 6.50E-03 | 1.56E-01 | 1.30E+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 | 2.80E-01 | YES. Modeling required | | | 5.60E-07 | | | |
| Benzene (TH) | [/] 71432 | 9.90E-02 / | 2.38E+00 | 1.98E+02 | YES. Modeling required | | | 3.96E-04 | | | |
| Benzo(a)pyrene (T) | 50328 | 4.41E-06 | 1.06E-04 | 8.82E-03 | NO. Based | on facility-wide p | otential. | 1.76E-08 | | | |
| Beryllium metal (unreacted) (TH) | 7440417 | 0.00E+00 | 0.00E+00 | 0.00E+00 | NO. Based | on facility-wide p | otential. | 0.00E+00 | | | |
| Cadmium metal (elemental unreacted) (TH) | 7440439 | 1.03E-04 | 7 2.46E-03 | 2.05E-01 | NO. Becaus | se of operating re | striction | 4.10E-07 | | | |
| Carbon disulfide (TH) | 75150 | 6.23E-04. | 1.49E-02 | 1.25E+00 | NO. Based on facility-wide potential. | | | 2.49E-06 | | | |
| Soluble Chromate compounds as Chrome (VI) (TH) | SOLCR6 | 1.13E-04 | . 2.70E-03 | 2.25E-01 | NO. Based on facility-wide potential. | | | 4.50E-07 | | | |
| Formaldehyde (TH) | 50000 | 7.97E-01 | / 1.91E+01 | 1.59E+03 | YES. Modeling required | | | 3.19E-03 | | | |
| Hexane, п- (ТН) | 110543 | 2.39E-01 | 5.74E+00 | 4.78E+02 | NO. Based on facility-wide potential. | | | 9.57E-04 | | | |
| Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) | 57653857 | 3.25E-10 | 7.80E-09 | 6.50E-07 | NO. Based on facility-wide potential. | | | 1.30E-12 | | | |
| Hydrogen Sulfide (T) | 7783064 | 1.37E-02 | 3.28E-01 | 2.74E+01 | NO. Based on facility-wide potential. | | | 5.47E-05 | | | |
| Manganese unlisted compounds (T) | MNC-other | 1-93E-03 | 4.62E-02 | 3.85E+00 | NO. Based on facility-wide potential. | | | 7.70E-06 | | | |
| / Mercury vapor (TH) | / 7439976 / | 6.50E-04 | / 1.56E-02 | 1.30E+00 | YES. Modeling required | | | 2.60E-06 | | | |
| Methylene chloride (TH) | 75092 | 8.23E-06 | 1.97E-04 | 1.65E-02 | NO. Based on facility-wide potential. | | 3.29E-08 | | | | |
| Methyl chioroform (TH) | 71556 | 1.20E-02 | 2.88E-01 | 2.40E+01 | NO. Based | on facility-wide p | otential. | 4.80E-05 | | | |
| Methyl ethyl ketone (TH) | 78933 | 6.70E-03 · | 1.61E-01 | 1.34E+01 | . NO. Based | on facility-wide p | otential. | 2.68E-05 | | | |
| / Nickel-metal (TH) | 7440020 / | 1.58E-02 | 7 3.78E-01 | 3.15E+01 | YES. | Modeling require | ed | 6.30E-05 | | | |
| Perchloroethylene (tetrachloroethylene) (TH) | 127184 | 8.01Ë-05 | 1.92E-03 | 1.60E-01 | NO. Based | on facility-wide p | otential. | 3.20E-07 | | | |
| Phenol (TH) | 108952 | 1.01E-03 | 2.41E-02 | 2.01E+00 | NO. Based | on facility-wide p | otential. | 4.02E-06 | | | |
| Styrene (TH) | 100425 | 2.40E-04 | 5.77E-03 | 4.81E-01 | NO. Based | on facility-wide p | otential. | 9.62E-07 | | | |
| Tetrachlorodibenzo-p-dioxin, 2,3,7,8+ (TH) | 1746016 | 5.25E-11 | 1.26E-09 | 1.05E-07 | | on facility-wide p | | 2.10E-13 | | | |
| Toluene (TH) | 108883 | 7.29E-01 | 1.75E+01 | 1.46E+03 | | on facility-wide p | | 2.92E-03 | | | |
| Trichloroethylene (TH) | 79016 | 0.00E+00 | 0.00E+00 | 0.00E+00 | | on facility-wide p | | 0.00E+00 | | | |
| Xylene (TH) | 1330207 | 6.04E-02 | 1.45E+00 | 1.21E+02 | | on facility-wide p | | 2.41E-04 | | | |
| 79,2.10 (111) | | 5.5 , E. VE | | 1.212.02 | | | | | | | |

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 INPUT SCREEN



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.

1. Fili in all BLUE cells. Instructions:

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.: | 1700016 |
| Permit No.: | 10628R00 |
| Facility City: | Burlington |
| Facility County: | Caswell |
| Spreadsheet Prepared by: | LLG |

| Is this spreadsheet b | 2. NO | | | |
|----------------------------------------|--------------------|-----------------------------------------|---------|--|
| Plant type: | Drum mix | ř. | | |
| Fuel type: | Natural gas-fired | | | |
| \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | KARAMANA. | 1////////////////////////////////////// | XIIIIII | |
| Controls: | Fabric filter cont | rols | 1.4 | |

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

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

| Silo | VEF | |
|----------|----------------------------------------|--|
| Filling? | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | |

| | ushing on te? | YES | | |
|---------------------|------------------|----------------|-------------------|---|
| Crushing Capacity? | 65 | tons per hour | No. of crushers: | 1 |
| Hours of operation: | 8760 | hours per year | No. of screens: | 1 |
| ŀ | | = | No. of conveyors: | 4 |

| A | sphalt 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 %) |
| L | 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 ye | ear |
|--------------------------------------------------------------|-----------------------------------------------------|
| Requested Annual Production Limit; 500,000 tons per year | ear (if none desired leave default value =8760*tph) |
| Requested Daily Production Limit: 6,000 tons per de | ay (if none desired leave default value = 24*tph) |
| <u> </u> | : |

| Is this plant NSPS Subpart I affected? | YES | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|
| Stack gas flow rate : | 68,145 | ACFM |
| Stack gas temperature : | 240 | oF . |
| Stack % moisture: | 33 | ገ% |
| Allowable emission rate under NSPS Subpart I: | 11.81 | ļb/hr |
| Control efficiency required: | 99.831 | % |
| Does Method 5 data already exist?: | NO | |
| अस्य प्रस्कृत कार्याय के उत्तरीहरू है जिल्ला के अध्याप के अध्याप के अध्याप के अध्याप के अध्याप के अध्याप के अध स्थाप के अध्याप के अ | ///40000/ | X(e)X(e) |
| Allowable omission role under 0 D. 0506 | FE 20 | llo/los |

| 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 | % |
| | | |

ATTACH MENT

| Criteria Pollutants | | | | | • | | | | | • |
|---------------------------------------|----------------------------------|------------------------|------------------|------------------------------------------------|-------------------------------------|----------------------------------------------------|--------------|-------------|-----------------------------------|--------------------------------------------------------|
| | | Cantrollari | 1 | | | | | T | | |
| | Uncontrolled | Controlled Emission | <u> </u> | | | Title V, Potential Emis | | | tial Emissions, | Synthetic Minor, Potential Emissions (tpy |
| | Emission Factor (lb/ton) | Factor | | emission rate /hr) | controlled emission rate (lb/hr) | (no controls, 8760 hou operation) | ırs per year | | controls, 8760 ear operation) | (with all operation restrictions) |
| Pollutant | <u> </u> | (lb/ton) | · · | <u>, </u> | • • | | | , | | |
| Condensible PM (or PM ₁₀) | | 0.0194 | | 3.35 | 4.85 | | 1111111 | | | |
| Filterable PM Filterable PM10 | | 0.014 0.0039 | | 200 | 3.5 | HHHHHH | | HILLER | | |
| | | 0.0039 | | 300 300 | 0.975 8,25 | <u> </u> | | 71111111 | | |
| Total PM Total PM10 | 28 6.5 | 0.033 | | 325 | 5,75 | 73.0 33.1 | | | 6.1 5.2 | 8.3 5.8 |
| | 0.0001 | 0.0001 | | .02 | 0.02 | 0.10 | | | | |
| SO2 CO | 0.0001 | 0.0001 | | 2.5 | 32.5 | 142.4 | | | .10 12.4 | 0.02 32.5 |
| NOx | 0.0260 | 0.026 | | 3.5 | 6.5 | 28.5 | | | 8.5 | 6.5 |
| VOC | 0.0320 | 0.032 | | 8 | 8 | 35.0 | | | 5.0 | 8,0 |
| HAPs, TOTAL | 1111111111 | 0.005 | minini | ummini. | 1.325 | 5.8 | | | 5.8 | 1.3 |
| | | | | | | | | · | | |
| Silo Filling plus Loa | id Out Emis: | sions, Crit | eria Pollutai | nts | | | | | | |
| | Emission | | | | | | | T | | |
| | Factor, | | | | | Title V, Potential Emiss (no controls, 8760 hou | | | tial Emissions, nours per year | Synthetic Minor, Potential Emissions (tpy) |
| • | combined | | | | emission rate (lb/hr) | operation) | is per year | | nours per year ation) | (with all operation restrictions) |
| Pollutant | (lb/ton) | | | | | , , | | | | |
| Total PM | | | XIIIIIII | IXIIIIIII | 2.77E-01 | 1.2 | | | .2 | 0.3 |
| CO | | | <u> </u> | MIIIIII | 6.32E-01 | 2.8 | | | 2.8 | 0.6 |
| VOC | | | XIIIIII | | 4.02E+00 | 17.6 | | | 7.6 | 4.0 |
| HAPs, TOTAL | 2.74E-04 | | | (XIIIIII) | 6.85E-02 | 0.3 | | | 0.3 | 0.1 |
| | | | | | | 1.7 | | | | |
| Rap Crusher Emiss | ions | ı | | | | | | | | |
| - | Emission | | | | | | ÷ | 1 | | |
| | Factor, all | | | | | Title V, Potential Emiss | sions (tav) | PSD. Potent | ial Emissions, | |
| | sources combined | | | | | (no cantrals, 8760 hou | | | nours per year | Synthetic Minor, Potential Emissions (tpy) |
| Pollutant | (lb/ton) | | | | emission rate (lb/hr) | operation) | | сре | ration) | (with all operation restrictions) |
| | 0.0424 | mm | ,,,,,,,,,,, | mmm. | 2.76E+00 | 12.1 | | 1 | 2.4 | |
| Total PM Total PM10 | 0.0424 | HHHH | HHHH | HHHH | 1.01E+00 | 4.4 | | | 2.1 I.4 | 2.8 1.0 |
| Otal PMTU | 0.0133 | <i>,,,,,,,,,,</i> | <i>XIIIIIIII</i> | MIIIIII | 1.012+00 | 4.4 | | | +, 4 | 1.0 |
| Asphalt Cement He | ter Emissic | ากร | | | | | · | ** | | |
| Topilal Comon To | atti Elillooit | ,,,, | | | | *, | | | | |
| | Uncontrolled | | | | | | | | | |
| | Emission | | | | | Title V, Potential Emiss | | | ial Emissions, | Synthetic Minor, Potential Emissions (tpy) |
| | Factor | | | | emission rate (lb/hr) | (no controls, 8760 hau | rs per year | | nours per year | (with all operation restrictions) |
| Pollutant | (lb/MMBtu) | | | • | | operation) | | opei | ation) | , , , , , , , , , , , , , , , , , , , , |
| Total PM | 0.0235714 | 11111111 | HIIIIIX | | 5.42E-02 | 0.2 | | Ö | .2 | 0.2 |
| Total PM10 | | 44444 | XIIIIII | MHHH. | 5.42E-02 | 0.2 | | | 1.2 | 0.2 |
| SO2 | 0.5071429 | 1111111 | Milli | Klilliki | 1.17E+00 | 5.1 | | | 5.1 | 5.1 |
| co | | ,,,,,,,,,, | Milli | XHHHH | 8.21E-02 | 0.4 | | | 1.4 | 0.4 |
| NOx | | 1111111 | XIIIII | XIIIIII | 3.29E-01 | 1.4 | | 1 | .4 | 1.4 |
| voc | | 1111111 | XIIIIII | XIIIIII | 5.59E-03 | 0.0 | | | 1.0 | 0.0 |
| | | | | | | 11 | 4. | | | 1 |
| Facility-wide Criteri | a Pollutant I | Emissions | Summary | | | <u> </u> | | | | |
| - | | | - | | | | | | | |
| | | | | | Controlled Emission Rate, | Title V, Potential Emiss | | | ial Emissions, | Synthetic Minor, Potential Emissions (tpy) |
| | | | | | lb/hr | (no controls, 8760 hou operation) | rs per year | | nours per year ation) | (with all operation restrictions) |
| Pollutant | | | | | | Cperation) | | uper | allonj | · |
| Total PM | | HHHH | HIIIIIX | KHHHHH | 1.11E+01 | 86.5 | | 4 | 9.7 | 11.5 |
| Total PM10 | | | XIIIIIX | XIIIII | 6.81E+00 | 38.9 | | | 1.0 | 7.3 |
| . 502 | | Milli | XIIIIIX | XIIIIII | 1.19E+00 | 5.2 | | | .2 | 5.1 |
| co | | HHH | XIIIIX | XIIIIX | 3.32E+01 | 145.5 | | 14 | 5.5 | 33.5 |
| NOx | | HIIII | HIIII | MIIIII | 6.83E+00 | 29.9 | | 2 | 9.9 | 7.9 |
| voc | | Mille | | XIIIIIX | 1.20E+01 | 52.7 | | 5: | 2.7 | 12.0 |
| HAPs; TOTAL | | HHHH | XIIIIIX | XIIIIIX | 1.39E+00 | 6.1 | | e | .1 | 1.4 |
| | | | | | | | | | | |
| Facility-wide Toxic | Air Pollutant | ts Summa: | ry | , | | | | | | |
| | | | | | | | | | _ | |
| TAP | | CAS No. | Action | | TAP | | CAS No. | Action | | <u> </u> |
| Ace | taldehyde (TH) | 75070 | NOTE 1 | IIIIIII | | Mercury, vapor (TH) | 7439976 | NOTE 1 | NOTE 1: In | nclude TAP in TPER stipulation. |
| • | Acrolein (TH) | 107028 | NOTE 1 | 11111111 | t | Methyl ethyl ketone (TH) | 78933 | NOTE 1 | NOTE I. II | icidde TAP III TPER supulation. |
| Arsenic unlisted cmpds (comp | of ASC) (TH) | ASC-other | NOTE 3 | | | Methylene chloride (TH) | 75092 | NOTE 1 | NOTE 2: In | actudo TAD in TRED atimulation |
| | Benzene (TH) | 71432 | NOTE 3 | | | Nickel metal (TH) | 7440020 | NOTE 3 | | nclude TAP in TPER stipulation tion tion restrictions. |
| Benz | o(a)pyrene (T) | 50328 | NOTE-1 | 111111111 | Perchloroethylene (to | etrachloroethylene) (TH) | 127184 | NOTE 1 | With operal | uon restrictions. |
| Beryllium metal (ı | inreacted) (TH) | 7440417 | NOTE 1 | 111111111 | | Phenal (TH) | 108952 | NOTE 1 | NOTE 3: N | lodeling Required. See "Toxic |
| Cadmium metal (elemental i | inreacted) (TH) | 7440439 | NOTE 2 | illilli | Soluble Chromate Compor | unds as Chrome VI (TH) | 7738945 | NOTE 1 | | s" worksheet. |
| | n disulfide (TH) | | NOTE 1 | IIIIIII | • | Styrene (TH) | 100425 | NOTE 1 | | |
| | naldehyde (TH) | 50000 | NOTE 3 | | Tetrachlomdibenzo | p-p-dioxin, 2,3,7,8- (TH) | 1746016 | NOTE 1 | | |
| Hexachlorodibenzo-p-dioxin | | | NOTE 1 | HHHH | . 5 2501041154124 | Toluene (TH) | 108883 | NOTE 1 | | İ |
| | lexane, n- (TH) | | NOTE 1 | | | Trichloroethylene (TH) | 79016 | NOTE 1 | | |
| | gen Sulfide (T) | | NOTE 1 | illilli. | | Xylene (TH) | | NOTE 1 | | |
| Manganese unlisted | - | | NOTE 1 | 11111111 | | Miene (10) | ZUI | | | • |
| , . | compounds (1) :hloroform (TH) | 71556 | NOTE 1 | illillili. | | | | | | |
| ivietriyi (| and ordine (TEI) | 1 1000 | 14V:L | umini. | | | | | | |

Dryer Emissions

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 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.

| (1) (1) (1) (1) (2) (2) (2) (2) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4 | | | | | | |
|------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------|-----|------------------|------|---------|
| COMPANY: | Carolina | Carolina Sunrock, LLC | | | IO.: | 1700016 |
| COMPANT. | Caronna | PERMIT NUMBER: | | 10628R00 | | |
| EMISSION SOURCE DESCRIPTION: | NSPS affected 250 tp | FACILITY CITY: | | Burlington | | |
| EMISSION SOURCE DESCRIPTION. | mmBtu/hr heat input, w/silofill, with RAP, sulfur=n/a%) | | | FACILITY COUNTY: | | Caswell |
| Annual Production Limit: 500 | ,000 ton/year | Daily Production Limit: | n/a | ton/day | | |
| | | | | | | |

SPREADSHEET PREPARED BY: LLG

| | ACTUAL EI | | 17 | | POTENTIAL I | | | III | 177 | iii | m | IIII |
|-----------------------------------------------------|---------------|----------|-----------|---------|------------------|-------|----------------|------|------|-------|-------------|-------|
| AIR POLLUTANT EMITTED | (AFTER CONTR | | / (BEI | FORE CO | NTROLS / LIM(TS) | I | ROLS / LIMITS) | | ''' | | <i>III.</i> | |
| | lb/hr | tons/yr | lb | /hr | tons/yr | lb/hr | tons/yr | | m | | | IIII |
| PARTICULATE MATTER (PM) | 1 1.06 | 11.52 | 11111 | | 86.48 | HHHH | 11.52 | IIII | m | 1111 | | IIII. |
| PARTICULATE MATTER<10 MICRONS (PM ₁₀) | 6.81 | 7.27 | | | 38.93 | | 7.27 | | ''' | Illi | | |
| PARTICULATE MATTER<2.5 MICRONS (PM _{2.5}) | | | | | HIHIIK | | | | ''' | | | |
| SULFUR DIOXIDE (SO2) | 1.19 | (5.13.) | 11111 | | 5.21 | | 5.13 | illi | M | Illi | III. | |
| NITROGEN OXIDES (NOx) | 6.83 | 7.94 | | IIIII | 29.91 | | 7.94 | III. | ''' | ://// | IIII | IIII. |
| CARBON MONOXIDE (CO) | 33.21 | 33.49 | IIII | IIII | 145.48 | | 33.49 | IIII | ''' | Illi. | IIIı | IIII |
| VOLATILE ORGANIC COMPOUNDS (VOC) | 12.03 | 12.05 | | IIII | 52.69 | | 12.05 | Illi | '''' | IIII | III | Illi |
| TOTAL HAP | 1.39 | 1.39 | | | 6.10 | | 1.39 | | M | Illi | III. | IIII |
| LARGEST HAP (formaldehyde) | 0.80 | 0.80 / | | | 3.49 | | 0.80 | | III | III | | IIII |

Attach INPUT worksheet

| | | • | | | | • | | EMISSION FACTOR |
|-----------------------------------------------------------|---------------|---------------|--------------|-------------|-----------------|--------------|---------------|----------------------------|
| | | ACTUAL EM | ISSIONS | ** | POTENTIAL E | MISSIONS | | (lb/ton asphalt produced |
| TOXIC / HAZARDOUS AIR POLLUTANT | CAS Number | (AFTER CONTRO | LŞ / LIMITS) | (BEFORE CON | TROLS / LIMITS) | (AFTER CONTR | OLS / LIMITS) | with Fabric filter control |
| | Number | lb/hr | lb/yr | lb/hr | lb/yr | lb/hr | lb/yr | with Pablic tilter control |
| Acetaldehyde (TH) | 75070 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00E+00 | 0.0E+00 |
| Acrolein (TH) | 107028 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | 0.00E+00 | . 0.00E+00 | 0.0E+00 |
| Antimony unlisted compounds (H) | SBC-other | 4.50E-05 | 9.00E-02 | 4.50E-05 | 0.39 | 4.50E-05 | 9.00E-02 | 1.8E-07 |
| Arsenic unlisted cmpds (comp. of ASC) (TH) | ASC-other | 1.40E-04 | 2.80E-01 | 1.40E-04 | 1.23 | 1.40E-04 | 2.80E-01 | 5.6E-07 |
| Benzene (TH) | 71432 | 9.90E-02 | 1.98E+02 | 9.90E-02 | 867.38 | 9.90E-02 | 1.98E+02 | 4.0E-04 |
| Benzo(a)pyrene (T) | 50328 | 4.41E-06 | 8.82E-03 | 4.41E-06 | 0.04 | 4.41E-06 | 8.82E-03 | 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 | 2.05E-01 | 1.03E-04 | 0.90 | 1.03E-04 | 2.05E-01 | 4.1E-07 |
| Carbon disulfide (TH) | 75150 | 6.23E-04 | 1.25E+00 | 6.23E-04 | 5.45 | 6.23E-04 | 1.25E+00 | 2.5E-06 |
| Chromium unlisted cmpds (add w/chrom acid to get CRC) (H) | CRC-other | 1.26E-03 | 2.53É+00 | 1.26E-03 | 11.06 | 1.26E-03 | 2.53E+00 | 5.1E-06 |
| Chromic acid (VI) (component of solCR6 and CRC) (TH) | 7738945 | 1.13E-04 | 2.25E-01 | 1.13E-04 | 0.99 | 1.13E-04 | 2.25E-01 | 4.5E-07 |
| Cobalt unlisted compounds (H) | COC-other | 6.50E-06 | 1.30E-02 | 6.50E-06 | 0.06 | 6.50E-06 | 1.30E-02 | 2.6E-08 |
| Cumene (H) | 98828 | 1.14E-03 | · 2.29E+00 | 1.14E-03 | 10.02 | 1.14E-03 | 2.29E+00 | 4.6E-06 |
| Ethyl benzene (H) | 100414 | 6.41E-02 | 1.28E+02 | 6.41E-02 | 561.24 | 6.41E-02 | 1.28E+02 | 2.6E-04 |
| Ethyl chloride (chlorcethane) (H) | 75003 | 2.18E-06 | 4.37E-03 | 2.18E-06 | 0.02 | 2.18E-06 | 4.37E-03 | 8.7E-09 |
| Formaldehyde (TH) | 50000 | 7.97E-01 | 1.59E+03 | 7.97E-01 | 6981.17 | 7.97E-01 | 1.59E+03 | 3.2E-03 |
| . Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) | 57653857 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00E+00 | 0.0E+00 |
| Hexane, n- (TH) | 110543 | 2.39E-01 | 4:78E+02 | 2.39E-01 | 2095.50 | 2.39E-01 | 4.78E+02 | 9.6E-04 |
| Hydrogen Chloride (hydrochloric acid) (TH) | 7647010 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00E+00 | 0.0E+00 |
| Hydrogen Sulfide (T) | 7783064 | 1.37E-02 | 2.74E+01 | 1.37E-02 | 119.84 | 1.37E-02 | 2.74E+01 | 5.5E-05 |
| Lead unlisted compounds (H) | PBC-other | 1.55E-04 | 3.10E-01 | 1.55E-04 | 1.36 | 1.55E-04 | 3.10E-01 | 6.2E-07 |
| Manganese unlisted compounds (T) | MNC-other | 1.93E-03 | 3.85E+00 | 1.93E-03 | 16.86 | 1.93E-03 | 3.85E+00 | 7.7E-06 |
| Mercury, vapor (TH) | 7439976 | 6.00E-05 | 1.20E-01 | 6.00⊑-05 | 0.53 | 6.00E-05 | 1.20E-01 | 2.4E-07 |
| Methyl bromide (H) | 74839 | 2.49E-04 | 4.98E-01 | 2.49E-04 | 2.18 | 2.49E-04 | 4.98E-01 | 1.0E-06 |
| Methyl chloride (H) | 74873 | 1.56E-04 | 3.12E-01 | 1.56E-04 | 1.37 | 1.56E-04 | 3.12E-01 | 6.2E-07 |
| Methyl chloroform (TH) | 71556 | 1.20E-02 | . 2.40E+01 | 1.20E-02 | 105.12 | 1.20E-02 | 2.40E+01 | 4.8E-05 |
| Methyl ethyl ketone (TH) | 78933 | 1.70E-03 | 3.40E+00 | 1.70E-03 | 14.87 | 1.70E-03 | 3.40E+00 | 6.8E-06 |
| Methylene chloride (TH) | 75092 | 8.23E-06 | 1.65E-02 | 8.23E-06 | 0.07 | 8.23E-06 | 1.65E-02 | 3.3E-08 |
| Napthalene (H) | 91203 | 2.47E-02 | 4.94E+01 | 2.47E-02 | 216.55 | 2.47E-02 | 4.94E+01 | 9.9E-05 |
| Nickel metal (TH) | 7440020 | 1.58E-02 | 3.15E+01 | 1.58E-02 | 137.97 | 1.58E-02 | 3.15E+01 | 6.3E-05 |
| Perchloroethylene (tetrachloroethylene) (TH) | 127184 | 8.01E-05 | 1.60E-01 | 8.01E-05 | 0.70 | 8.01E-05 | 1.60E-01 | 3.2E-07 |
| Phenol (TH) | 108952 | 1.01E-03 | 2.01E+00 | 1.01E-03 | 8.81 | 1.01E-03 | 2.01E+00 | 4.0E-06 |
| Phosphorus Metal, Yellow or White (H) | 7723140 | 7.00E-03 | 1.40E+01 | 7.00E-03 | 61.32 | 7.00E-03 | 1.40E+01 | 2.8E-05 |
| Polycyclic Organic Matter (H) | POM | 4.75E-02 | 9.50E+01 | 4.75E-02 | 416.10 | 4.75E-02 | 9.50E+01 | 1.9E-04 |
| Propionaldehyde (H) | 123386 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00E+00 | 0.0E+00 |
| Quinone (H) | 106514 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00E+00 | 0.0E+00 |
| Selenium compounds (H) | SEC | 8.75E-05 | 1.75E-01 | 8.75E-05 | 0.77 | 8.75E-05 | 1.75E-01 | 3.5E-07 |
| Styrene (TH) | 100425 | 2.40E-04 | 4.81E-01 | 2.40E-04 | 2.11 | 2.40E-04 | 4.81E-01 | 9.6E-07 |

| Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH) | 1746016 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00E+00 | 0.0E+00 |
|------------------------------------------------|-------------|-----------------|---------------|-------------|-----------------|--------------------|------------|------------------------------|
| Toluene (TH) | 108883 | 4.16E-02 | 8.31E+01 | 4.16E-02 | 364.17 | 4.16E-02 | 8.31E+01 | 1.7E-04 |
| Trichloroethylene (TH) | 79016 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | 0.00E+00 | . 0.00E+00 | 0.0E+00 |
| Trimethylpentane, 2,2,4- (H) | 540841 | 1.00E-02 | 2.01E+01 | 1.00E-02 | 87.85 | 1.00E-02 | 2.01E+01 | 4.0E-05 |
| Xylene (TH) | 1330207 | 6.04E-02 | 1.21E+02 | 6.04E-02 | 528.72 | 6.04E-02 | 1.21E+02 | 2.4E-04 |
| Xylene, a- (H) | 95476 | 2.57E-03 | 5.14E+00 | 2.57E-03 | 22.50 | 2.57E-03 | 5.14E+00 | 1.0E-05 |
| | | | | | | | | |
| | | | | • | | | | EMISSION FACTOR |
| Expected actual emissions after contri | ols and lin | nitations consi | sting of an a | nnual produ | uction limit of | 500000 tons | ₃. | (lb/ton asphalt produced, |
| TOWN AIR DOLLARS | I=+=+: | I b ma | | | | | | with Fabric filter controls) |
| TOXIC AIR POLLUTANT | CAS Num. | lb/hr | lb/day | √ib/yr | | eling Require | | |
| Acetaldehyde (TH) | 75070 | 0.00E+00 | 0.00E+00 | 0.00E+00 | | on facility-wide p | | 0.00E+00 |
| Acrolein (TH) | 107028 | 0.00E;+00 | 0.00E+00 | 0.00E+00 | | on facility-wide p | | 0.00E+00 |
| Arsenic unlisted cmpds (comp. of ASC) (TH) | | 1.40E-04 | 3.36E-03 | 2.80E-01 | | Modeling require | | 5.60E-07 |
| Benzene (TH) | | 9.90E-02 | 2.38E+00 | 1.98E+02 | | Modeling require | | 3.96E-04 |
| Benzo(a)pyrene (T) | 50328 | 4.41E-06 | 1.06E-04 | 8.82E-03 | | on facility-wide p | | 1.76E-08 |
| Beryllium metal (unreacted) (TH) | 7440417 | 0.00E+00 | 0.00E+00 | 0.00E+00 | | on facility-wide p | | 0.00E+00 |
| Cadmium metal (elemental unreacted) (TH) | 7440439 | 1.03E-Ó4 | 2.46E-03 | 2.05E-01 | | se of operating re | | 4.10E-07 |
| Carbon disulfide (TH) | 75150 | 6.23E-04 | 1.49E-02 | 1.25E+00 | | on facility-wide p | | 2.49E-06 |
| Soluble Chromate compounds as Chrome (Vt) (TH) | SOLCR6 | 1.13E-04 | 2.70E-03 | 2.25E-01 | NO. Based | on facility-wide p | otential. | 4.50E-07 |
| Formaldehyde (TH) | 50000 | 7.97E-01 | 1.91E+01 | 1.59E+03 | YES. | Modeling require | ed. | 3.19E-03 |
| Hexane, n- (TH) | 110543 | 2.39E-01 | 5.74E+00 | 4.78E+02 | NO. Based | on facility-wide p | ootential. | 9.57E-04 |
| Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) | 57653857 | 0.00E+00 | 0.00E+00 | 0.00E+00 | NO. Based | on facility-wide p | otential. | 0.00E+00 |
| Hydrogen Sulfide (T) | 7783064 | 1.37E-02 | 3.28E-01 | 2.74E+01 | NO. Based | on facility-wide p | otential. | 5.47E-05 |
| Manganese unlisted compounds (T) | MNC-other | 1.93E-03 | 4.62Ė-02 | 3.85E+00 | NO. Based | on facility-wide p | otential. | 7.70E-06 |
| Mercury, vapor (TH) | 7439976 | 6.00E-05 | 1.44E-03 | 1.20E-01 | NO. Based | on facility-wide p | otential. | 2.40E-07 |
| Methylene chloride (TH) | 75092 | 8.23E-06 | . 1.97E-04 | 1:65E-02 | NO. Based | on facility-wide p | otential. | 3.29E-08 |
| Methyl chloroform (TH) | 71556 | 1.20E-02 | 2.88E-01 | 2.40E+01 | NO. Based | on facility-wide p | otential. | 4.80E-05 |
| Methyl ethyl ketone (TH) | 78933 | 1.70E-03 | 4.07E-02 | 3.40E+00 | NO. Based | on facility-wide p | otential. | 6.79E-06 |
| Nickel metal (TH) | 7440020 | 1.58E-02 | 3.78E-01 | 3.15E+01 | YE\$. | Modeling require | ed | 6.30E-05 |
| Perchloroethylene (tetrachioroethylene) (TH) | 127184 | 8.01E-05 | 1.92E-03 | 1.60E-01 | NO. Based | оп facility-wide р | otential. | 3.20E-07 |
| Phenol (TH) | 108952 | 1.01E-03 | 2.41E-02 | 2.01E+00 | NO. Based | on facility-wide p | otential. | 4.02E-06 |
| Styrene (TH) | 100425 | 2.40E-04 | 5.77E-03 | 4.81E-01 | NO. Based | on facility-wide p | otential. | 9.62E-07 |
| Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH) | 1746016 | 0.00E+00 | 0.00E+00 | 0.00E+00 | NO. Based | on facility-wide p | otential. | 0.00E+00 |
| Toluene (TH) | 108883 | 4.16E-02 | 9.98E-01 | 8.31E+01 | NO. Based | on facility-wide p | otential. | 1.66E-04 |
| Trichloroethylene (TH) | 79016 | 0.00E+00 | 0.00E+00 | 0.00E+00 | NO. Based | on facility-wide p | otential. | 0.00E+00 |
| | | | | | | | | |

1.45E+00

1.21E+02

NO. Based on facility-wide potential.

1330207

Xylene (TH)

6.04E-02

2.41E-04

EXPECTED ACTUAL EMISSIONS - WASTE OIL /NO.4 to

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 INPUT SCREEN



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.: | 1700016 |
| Permit No.: | 10682R00 |
| Facility City: | Burlington |
| Facility County: | Caswell |
| Spreadsheet Prepared by: | LLG |

| | readsheet b missions inv | | | Harrio Harrio |
|---|-----------------------------|------------------------------------|------------|-----------------------|
| | Plant type: | Drum mix | Ş | |
| - | Fuel type: { | Waste, No.4 or No.6 fuel oil-fired | | |
| | Fuel Suif | ur Content: 0.50 | % | (default value is 0:5 |
| | Controls: | Fabric filter controls | 616 641 | |

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

| Asphalt Prop | erties | | |
|----------------------|--------|-----------|----------------------------------|
| Asphalt temperature: | 325 | degrees F | (default value of 325 degrees F) |
| Volatility loss (V): | -0.5 | % . | (default value of -0.5 %) |
| | | | |

| Silo | VEC | |
|----------|-----|--|
| Filling? | | |

| RAP crushing on site? | | |
|-----------------------------------------|-------------------|---|
| Crushing Capacity? 65 tons per hour | No. of crushers: | 1 |
| Hours of operation: 8760 hours per year | No. of screens: | 1 |
| | No. of conveyors: | 4 |

| | 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) |
| | | | | |
| . Ca | atculated Annual Production Limit: | 1,488,581 | tons per year | |
| Re | equested Annual Production Limit: | 500,000 | 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 | M |
|--------------------------------------------------------------------------------------------------------------------|--------|-----------|
| Stack gas flow rate : | 68,145 | ACFM |
| Stack gas temperature : | 240 | oF · |
| Stack % moisture: | 33 | 7% |
| Allowable emission rate under NSPS Subpart I: | 11.81 | lb/hr |
| Control efficiency required: | 99.831 | <u></u> % |
| Does Method 5 data already exist?: | NO | |
| श्रीहर गरांहर सार्व महाहार प्रशासकार हो महार्थ भी। सार्व र १९५१ तर महाहारा प्रशासकार स्वामकार स्वामकार स्वामकार | 99,429 | |
| | | |
| Allowable emission rate under 2 D .0506: | 55.39 | lb/hr |

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

ATTACHMENT E3

| Dryer Emissions Criteria Pollutant | 5 | | | | | | | | |
|---------------------------------------|--------------------------------------------------|----------------------------------------------|--------------------|-----------------------------------------|-------------------------------------|---------------------------------------------------------------------|-------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Pollutant | Uncontrolled Emission Factor (lb/ton) | Controlled Emission Factor (lb/ton) | uncontrolled (lb/ | | controlled emission rate (lb/hr) | Title V, Potential Emissi (no controls, 8760 hours operation) | | PSD, Potential Emissions (tpy) (with controls, 8760 hours per year operation) | Synthetic Minor, Potential Emissions (tpy) |
| Condensible PM (or PN | 110) 0.0654 | 0.0194 | 16. | 35 | 4.85 | | ,,,,,,,,,,, | | annananan da karan karan karan karan karan karan karan karan karan karan karan karan karan karan karan karan k |
| Filterable | 107 | 0.014 | 70 | | 3.5 | | HHH | | |
| Filterable PM | 110 6.4 | 0.0039 | 16 | 00 | 0.975 | | HHH | HHHHHH | |
| Total I | -м 28 | 0.033 | 70 | 00 | 8.25 | 73.0 | | 36.1 | 8,3 |
| Total PN | | 0.023 | 16: | | 5.75 | 33.1 | | 25.2 | 5,8 |
| s | 02 0.0837 | 0.0837 | 20. | 93 | 20.93 | 91.69 | | 91.69 | 20.93 |
| | 0.1300 | 0.130 | 32 | | 32.5 | 142.4 | | 142.4 | 32.5 |
| | Ox 0.0550 | 0.055 | 13. | | 13.75 | 60.2 | | 60.2 | 13.8 |
| | oc 0.0320 | 0.032 | 8 | | . 8 | 35.0 | | 35.0 | 8.0 |
| HAPs, TOT | ****** | 0.010 | illillilli. | ınının | 2.5 | 11.0 | | 11.0 | 2.5 |
| | | | | | | | | · · · · · · · · · · · · · · · · · · · | |
| Silo Filling plus L | oad Out Emis | sions, Crit | eria Pollutan | ts | | | | | |
| | | | 100 | | | · · · · · · · · · · · · · · · · · · · | · . | | |
| | Emission | | | | | Title V, Potential Emissi | ons (tov) | PSD, Potential Emissions. | · |
| | Factor, combined | | | | | (no controls, 8760 hours | | (tpy) (8760 hours per year | Synthetic Minor, Potential Emissions (toy) |
| Dellutest | (lb/ton) | | | | emission rate (lb/hr) | operation) | | operation) | (with all operation restrictions) |
| Pollutant | | ~~~~~~ | | ************ | A 77E A | | | | <u> </u> |
| Total f | | 1111111 | | | 2.77E-01 | 1.2 | | 1.2 | 0.3 |
| (| co 2.53E-03 | IIIIIII | | XIIIIIII | 6.32E-01 | 2.8 | | 2.8 | 0.6 |
| V | oc 1.61E-02 | | | $\chi(IIIIIII)$ | 4.02E+00 | 17.6 | | 17.6 | 4.0 |
| HAPs, TOT | AL <u>2.74E-04</u> | IIIIIIII | | XIIIIII | 6.85E-02 | 0.3 | | 0.3 | 0.1 |
| | <u> </u> | | | | | | | | |
| Rap Crusher Emis | Emission Factor, all |] | | | | | | | |
| Pollutant | sources combined (lb/tan) | | | | emission rate (lb/hr) | Title V, Potential Emission (no controls, 8760 hours operation) | | PSD, Potential Emissions, (tpy) (8760 hours per year operation) | Synthetic Minor, Potential Emissions (tpy) (with all operation restrictions) |
| Total F | M 0.0424 | mmm | mminn. | mmin. | 2.76E+00 | 12.1 | | 12.1 | 2.8 |
| Total PM | | HHHH | HHHHH | HHHH | 1.01E+00 | 4.4 | | 4.4 | 1.0 |
| . Julai Fivi | 10[0.0155 | VIIIIIIII | <i>y,,,,,,,,,,</i> | MIIIIII | 1.012100 | 4.4 | | 4.4 | 1.0 |
| Asphalt Cement F | lantar Emissi | 000 | | | | | | | |
| Aspilali Celifelif I | icate: Ellissi | UHS | | | | | | • | |
| - | Uncontrolled Emission Factor (lb/MMBtu) | | | | emission rate (lb/hr) | Title V, Patential Emissi (no controls, 8760 hours operation) | | PSD, Potential Emissions, (tpy) (8760 hours per year operation) | Synthetic Minor, Potential Emissions (tpy) (with all operation restrictions) |
| Pollutant | | | | | | | | | |
| . Total F | | HHHH | | XIIIIIII | 5,42E-02 | 0.2 | | 0.2 | 0:2 |
| Total PM | | | | $x_{IIIIIII}$ | 5.42E-02 | 0.2 | | 0.2 | 0.2 |
| S | 0.5071429 | IIIIIIII | | XIIIIIX | 1.17E+00 | 5.1 | | 5.1 | 5.1 |
| C | 0.0357143 | | | XIIIIIIX | 8.21E-02 | 0.4 | | 0.4 | 0.4 |
| Ņ | 0.1428571 | | | XIIIIII | 3.29E-01 | 1.4 | | . 1.4 | 1.4 |
| V | oc 0.0024286 | | | XIIIIX | 5.59E-03 | 0.0 | | 0.0 | 0,0 |
| | | | | | | ő | | · · · · · · · · · · · · · · · · · · · | |
| Facility-wide Crite | ria Pollutant | Emissions | Summary | | | , | | | |
| • | | | | | Controlled Emission Rate, | Title V, Potential Emission (no controls, 8760 hours | | PSD, Potential Emissions, (tpy) (8760 hours per year | Synthetic Minor, Potential Emissions (tpy) (with all operation restrictions) |
| Pollutant | | | | | | operation) | | operation) | <u> </u> |
| Total F | MIIIIII W | HHHH | | XIIIIIIX | 1.11E+01 | 86.5 | | 49.7 | 11.5 |
| Total PM | 10 [[[[[[]]]]] | THILLIA | ШППП | MIIIIX | 6.81E+00 | 38.9 | | 31.0 | 7.3 |
| S | 02/11/11/11/20 | MINITE | MINITE | MILLIAM | 2.21E+01 | 96.8 | | 96,8 | 26.0 |
| (| ंगिरिसि | MIIIII | HHHH | MIIIII | 3.32E+01 | 145.5 | | 145.5 | 33.5 |
| - N | /////////////////////xc | HIHIK | HIHHH | HIIIIX | 1.41E+01 | 61.7 | | 61.7 | 15.2 |
| VC | | | HIIIII | XIIIIX | 1.20E+01 | 52.7 | | 52.7 | 12.0 |
| HAPs, TOT | | KHHHH | HHHHH | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX | 2.57E+00 | 11.3 | | 11.3 | 2.6 |
| | | | | | | | | | |
| Facility-wide Toxi | c Air Pollutan | ts Summar | у | - | | | | | |
| TAP | | CAS No. | Action | NIIIIIII | TAP | ŀ | CAS No. | Action | |
| | Acetaldehyde (TH) | 75070 | NOTE 1 | | | Mercury, vapor (TH) | 7439976 | NOTE 3 | |
| | Acrolein (TH) | 107028 | NOTE 1 | 111111111 | | Methyl ethyl ketone (TH) | 78933 | NOTE 1 NOTE 1: I | nclude TAP in TPER stipulation. |
| Associa unitated associa (see | | | | 111111111 | | | | | |
| Arsenic unlisted cmpds (co | | | NOTE 3 | | | Viethylene chloride (TH) | 75092 | NOTE 1 NOTE 2: ! | nclude TAP in TPER stipulation |
| _ | Benzene (TH) | 71432 | NOTE 3 | HHHH | | Nickel metal (TH) | 7440020 | NUIE 3 with opera | ition restrictions. |
| | enzo(a)pyrene (T) | 50328 | NOTE 1 | IIIIIII) | Perchioroethylene (te | trachlomethylene) (TH) | 127184 | NOTE 1 | |
| | (unreacted) (TH) | | NOTE 1 | HHHH | | Phenol (TH) | 108952 | | Modeling Required. See "Toxic |
| Cadmium metal (elementa | al unreacted) (TH) | 7440439 | NOTE 2 | (1111111) | Soluble Chromate Compos | inds as Chrome VI (TH) | 7738945 | | ns" worksheet. |
| Car | boл disulfide (TH) | 75150 | NOTE 1 | (1111111) | | Styrene (TH) | 100425 | NOTE 1 | |
| | ormaldehyde (TH) | 50000 | NOTE 3 | (1111111) | Tetrachlorodibenzo | -p-dioxin, 2,3,7,8- (TH) | 1746016 | NOTE 1 | <i>'</i> • • |
| Hexachlorodibenzo-p-dioxi | | | NOTE 1 | HHHH | | Toluene (TH) | 108883 | NOTE 1 | |
| , and a second | Hexane, n- (TH) | 110543 | NOTE 1 | IIIIIIII | | Trichloroethylene (TH) | 79016 | NOTE 1 | |
| Like | drogen Sulfide (T) | | NOTE 1 | 11111111 | | | | | |
| • | | | | 11111111, | | Xylene (TH) | 1330207 | NOTE 1 | • |
| Manganese unliste | su compounds (T) | MNC-other | NOTE 1 | unini, | | | | | |
| | | | MOTE 4 | MILLIN. | | | | | |
| Meth | yl chloroform (TH) | 71556 | NOTE 1 | | | | | | |

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 OUTPUT SCREEN



TOTAL HAP

NITROGEN OXIDES (NOx) CARBON MONOXIDE (CO)

LARGEST HAP (formaldehyde)

VOLATILE ORGANIC COMPOUNDS (VOC)

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.

| | Carolina Sunrock LLC | | | | | NO.: IMBER: | 1700016 10682R00 |
|-----------------------------------------------------|-------------------------------------|---------------|----------------|----------------------|--------------|----------------|-----------------------|
| I EMICCIAN CALIDAE DECADIDITANA | | | | | | ITY: OUNTY: | Burlington Caswell |
| Annual Production Limit: 500,000 ton/ye | ar Daily Produ | iction Limit: | n | /a | ton/day | | |
| SPREADSHEET PREPARED BY: LLG | | | | | | _ | |
| uinen muundusta 160 | | | | POTENTIAL | | | |
| AIR POLLUTANT EMITTED | ACTUAL EN (AFTER CONTRO Ib/hr | | (BEFORE CON | rols/LIMITS) tons/yr | (AFTER CONTE | rols/LIMITS) | |
| PARTICULATE MATTER (PM) | 11.06 | 11.52 | | 86.48 | 111111111 | 11.52 | |
| PARTICULATE MATTER<10 MICRONS (PM ₁₀) | 6.81 | 7.27 | | 38.93 | | 7.27 | |
| PARTICULATE MATTER<2.5 MICRONS (PM _{2.5}) | | | | | | | |
| SULFUR DIOXIDE (SO2) | 22,10 | 26.04 \ | <i>HIIIIII</i> | 96.80 | | 26.04 | X |

0.80 Attach INPUT worksheet

15.19

33.49

12.05

2:57

14.08

33.21

12.03

2.57

0.80

61.66

145.48

52.69

11.25

3.49

15.19

33.49

12.05

2.57

0.80

| · | | | | | | | | EMISSION FACTOR |
|----------------------------------------------------------|-----------|----------------------|----------|---------------------|---------|---------------------------|-----------------------|----------------------------|
| | CAS | ACTUAL EMISSIONS | | POTENTIAL EMISSIONS | | | | (lb/ton asphalt produce |
| TOXIC / HAZARDOUS AIR POLLUTANT | Number | (AFTER CONTRO | | (BEFORE CONT | | (AFTER CONTROLS / LIMITS) | | with Fabric filter control |
| | | lb/hr | lb/yr | lb/hr | lb/yr | . lb/hr | lb/yr | i |
| Acetaldehyde (TH) | 75070 | 3.25E-01 | 6.50E+02 | 3.25E-01 | 2847.00 | 3.25E-01 | 6.50E+02 | 1.3E-03 |
| Acrolein (TH) | 107028 | 6.50E-03 | 1.30E+01 | 6.50E-03 | 56.94 | 6.50E-03 | 1.30E+01 | 2.6E-05 |
| Antimony unlisted compounds (H) | SBC-other | 4.50E-05 | 9.00E-02 | 4.50E-05 | 0.39 | 4.50E-05 | 9.00E-02 | 1.8E-07 |
| Arsenic unlisted cmpds (comp. of ASC) (TH) | ASC-ather | 1.40E-04 | 2.80E-01 | 1.40E-04 | 1.23 | 1.40E-04 | 2.80E-01 | 5.6E-07 |
| Benzene (TH) | 71432 | 9.90E-02 | 1.98E+02 | 9.90E-02 | 867.38 | 9.90E-02 | 1. 9 8E+02 | 4.0E-04 |
| Benzo(a)pyrene (T) | 50328 | 4.41E-06 | 8.82E-03 | 4.41E-06 | 0.04 | 4.41E-06 | 8.82E-03 | 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 | 2.05E-01 | 1.03E-04 | 0.90 | 1.03E-04 | 2.05E-01 | 4.1E-07 |
| Carbon disulfide (TH) | 75150 | 6.23E-04 | 1.25E+00 | 6.23E-04 | 5.45 | 6.23E-04 | 1.25E+00 | 2.5E-06 |
| hromium unlisted cmpds (add w/chrom acid to get CRC) (H) | CRC-other | 1.26E-03 | 2.53E+00 | 1.26E-03 | 11.06 | 1.26E-03 | 2.53E+00 | 5.1E-06 |
| Chromic acid (VI) (component of solCR6 and CRC) (TH) | 7738945 | 1.13E-04 | 2.25E-01 | 1.13E-04 | 0.99 | 1.13E-04 | 2.25⊟-01 | 4.5E-07 |
| Cobalt unlisted compounds (H) | COC-other | 6.50E-06 | 1.30E-02 | 6.50E-06 | 0.06 | 6.50E-06 | 1.30E-02 | 2.6E-08 |
| Cumene (H) | 98828 | 1.14E-03 | 2.29E+00 | 1.14E-03 | 10.02 | 1.14E-03 | 2.29E+00 | 4.6E-06 |
| Ethyl benzene (H) | 100414 | 6.41E-02 | 1.28E+02 | 6.41E-02 | 561.24 | 6.41E-02 | 1.28E+02 | 2.6E-04 |
| Ethyl chloride (chloroethane) (H) | 75003 | 2.18E-06 | 4.37E-03 | 2.18E-06 | 0.02 | 2.18E-06 | 4.37E-03 | 8.7E-09 |
| Formaldehyde (TH) | 50000 | 7.97E-01 | 1.59E+03 | 7.97E-01 | 6981.17 | 7.97E-01 | 1.59E+03 | 3.2E-03 |
| Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) | 57653857 | 3.25E-10 | 6.50E-07 | 3,25E-10 | 0.00 | 3.25E-10 | 6.50E-07 | 1.3E-12 |
| Hexane, n- (TH) | | 2.39E-01 | 4.78E+02 | 2.39E-01 | 2095.50 | 2.39E-01 | 4.78E+02 | 9.6E-04 |
| Hydrogen Chloride (hydrochloric acid) (TH) | | 5.25E-02 | 1.05E+02 | 5.25E-02 | 459.90 | 5.25E-02 | 1.05E+02 | 2.1E-04 |
| Hydrogen Sulfide (T) | | 1.37E-02 | 2.74E+01 | 1.37⊑-02 | 119.84 | 1.37E-02 | 2.74E+01 | 5.6E-05 |
| Lead unlisted compounds (H) | | 3.75E-03 | 7.50E+00 | 3.75E-03 | 32.85 | 3.75E-03 | 7.50E+00 | 1.5E-05 |
| Manganese unlisted compounds (T) | | 1.93E-03 | 3.85E+00 | 1.93E-03 | 16.86 | 1.93E-03 | 3.85E+00 | |
| Mercury, vapor (TH) | 7439976 | 6.50E-04 | 1.30E+00 | 6.50E-04 | 5.69 | 6.50E-04 | 1.30E+00 | 2.6E-06 |
| Methyl bromide (H) | | 2.49E-04 | 4.98E-01 | 2.49E-04 | 2.18 | 2.49E-04 | 4.98E-01 | 1.0E-06 |
| Methyl chloride (H) | | 1.56E-04 | 3.12E-01 | 1.56E-04 | 1,37 | 1.56E-04 | 3.12E-01 | 6.2E-07 |
| Methyl chloroform (TH) | | 1.20E-02 | 2.40E+01 | 1.20E-02 | 105.12 | 1.20E-02 | 2.40E+01 | 4.8E-05 |
| Methyl ethyl ketone (TH) | | 6.70E-03 | 1.34E+01 | 6.70E-03 | 58.67 | 6.70E-03 | 1.34E+01 | 2.7E-05 |
| Methylene chloride (TH) | | 8.23E-06 | 1.65E-02 | 8.23E-06 | 0.07 | 8.23E-06 | 1.65E-02 | 3.3E-08 |
| Napthalene (H) | | 1.65E-01 | 3.29E+02 | 1.65E-01 | 1442.95 | 1.65E-01 | 3.29E+02 | 6.6E-04 |
| Nickel metal (TH | | 1.58E-02 | 3.15E+01 | 1.58E-02 | 137.97 | 1.58E-02 | 3.15E+01 | 6.3E-05 |
| Perchloroethylene (tetrachloroethylene) (TH | | 8.01E-05 | 1.60E-01 | 8.01E-05 | 0.70 | 8.01E-05 | 1.60E-01 | 3.2E-07 |
| Phenol (TH) | | 1.01E-03 | 2.01E+00 | 1.01E-03 | 8.81 | 1.01E-03 | 2.01E+00 | 4.0E-06 |
| Phosphorus Metal, Yellow or White (H) | | 7.00E-03 | 1.40E+01 | 7.00E-03 | 61.32 | 7.00E-03 | 1.40E+01 | 2.8E-05 |
| Polycyclic Organic Matter (H | | 7.00E-03 2.20E-01 | 4.40E+01 | 2.20E-01 | 1927.20 | 2.20E-01 | 4.40E+01 | |
| | | | | 3.25E-02 | | 3.25E-02 | | 1.3E-04 |
| Propionaldehyde (H | | 3.25E-02 | 6.50E+01 | | 284.70 | | 6.50E+01 | 1.6E-04 |
| Quinone (H | | 4.00E-02 | 8.00E+01 | 4.00E-02 | 350.40 | 4.00E-02 | 8.00E+01 | |
| Selenium compounds (H | | 8.75E-05 | 1.75E-01 | 8.75E-05 | 0.77 | 8.75E-05 | 1.75E-01 | 3.5E-07 |
| Styrene (TH) | 100425 | 2.40E-04 | 4.81E-01 | 2.40E-04 | 2.11 | 2.40E-04 | 4.81E-01 | 9.6E-07 |

| Toluene (TH) | 108883 | 7.29E-01 | 1.46E+03 | 7.29E-01 | 6386.67 | 7.29E-01 | 1.46E+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 |
| Trimethylpentane, 2,2,4- (H) | 540841 | 1.00E-02 | 2.01E+01 | 1.00E-02 | 87.85 | 1.00E-02 | 2.01E+01 | 4.0E-05 |
| Xylene (TH) | 1330207 | 6.04E-02 | 1.21E+02 | 6:04E-02 | 528.72 | 6.04E-02 | 1.21E+02 | 2.4E-04 |
| Xylene, o- (H) | 95476 | 2.57E-03 | 5.14E+00 | 2.57E-03 | 22.50 | 2.57E-03 | 5.14E+00 | 1.0E-05 |
| | 7.75 | 4.5 | | | | | | |
| | | | | | | :. | | EMISSION FACTOR |
| Expected actual emissions after contr | ols and lin | nitations consi | sting of an a | nnual produ | iction limit of | 500000 tons | s. | (lb/ton asphalt produced |
| | | | . • | | | | | • • • |
| TOXIC AIR POLLUTANT | CAS Num. | lb/hr . | lb/day | lb/yr | Mode | eling Require | d? | with Fabric filter controls |
| Acetaldehyde (TH) | 75070 | 3.25E-01 | 7.80E+00 | 6.50E+02 | | on facility-wide p | | 1.30E-03 |
| Acrolein (TH) | | 6.50E-03 | 1.56E-01 | 1.30E+01 | NO. Based | on facility-wide p | otential. | 2.60E-05 |
| Arsenic unlisted cmpds (comp. of ASC) (TH) | ASC-other | 1.40E-04 | 3.36E-03 | 2.80E-01 | YES. | Modeling require | ed | 5.60E-07 |
| Benzene (TH) | 71432 | 9.90E-02 | 2.38E+00 | 1.98E+02 | YES. Modeling required | | 3.96E-04 | |
| Benzo(a)pyrene (T) | 50328 | 4.41E-06 | 1.06E-04 | 8.82E-03 | NO. Based | on facility-wide p | otential. | 1.76E-08 |
| Beryllium metal (unreacted) (TH) | 7440417 | 0.00E+00 | 0.00E+00 | 0.00E+00 | NO. Based on facility-wide potential. | | ootential. | 0.00E+00 |
| Cadmium metal (elemental unreacted) (TH) | 7440439 | 1.03E-04 | 2.46E-03 | 2.05E-01 | NO. Becaus | se of operating re | estriction | 4.10E-07 |
| Carbon disulfide (TH) | 75150 | 6.23E-04 | 1.49E-02 | 1.25E+00 | NO. Based | on facility-wide p | ootential. | 2:49E-06 |
| Soluble Chromate compounds as Chrome (VI) (TH) | SOLCR6 | 1.13E-04 | 2.70E-03 | 2.25E-01 | NO. Based | on facility-wide p | otential. | 4.50E-07 |
| Formaldehyde (TH) | 50000 | 7.97E-01 | 1:91E+01 | . 1.59E+03 | YES. | Modeling require | ed " | 3.19E-03 |
| Hexane, n- (TH) | 110543 | 2.39E-01 | 5.74E+00 | 4.78E+02 | NO. Based | on facility-wide p | otential. | 9.57E-04 |
| Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) | 57653857 | 3.25E-10 | 7.80E-09 | 6.50E-07 | NO. Based | on facility-wide p | otential. | 1.30E-12 |
| Hydrogen Sulfide (T) | 7783064 | 1.37E-02 | 3.28E-01 | 2.74E+01 | NO. Based | on facility-wide p | otential. | 5.47E-05 |
| Manganese unlisted compounds (T) | MNC-other | 1.93E-03 | 4.62E-02 | 3.85E+00 | NO. Based | on facility-wide p | ootential. | 7.70E-06 |
| Mercury, vapor (TH) | 7439976 | 6.50E-04 | 1.56E-02 | 1.30E+00 | YES. | Modeling require | ed | 2.60E-06 |
| Methylene chloride (TH) | 75092 | 8.23E-06 | ₫ 1.97E-04 | 1.65E-02 | NO. Based | on facility-wide p | otential. | 3.29E-08 |
| Methyl chloroform (TH) | 71556 | 1.20E-02 | 2.88E-01 | 2.40E+01 | NO. Based on facility-wide potential. | | 4.80E-05 | |
| Methyl ethyl ketоле (ТН) | 78933 | 6.70E-03 | 1.61E-01 | 1.34E+01 | NO. Based on facility-wide potential. | | 2.68E-05 | |
| Nickel metal (TH) | 7440020 | 1.58E-02 - | 3.78E-01 | 3.15E+01 | YES. Modeling required | | 6.30E-05 | |
| Perchloroethylene (tetrachloroethylene) (TH) | 127184 | 8.01E-05 | 1.92E-03 | 1.60E-01 | NO. Based on facility-wide potential. | | 3.20E-07 | |
| Phenol (TH) | 108952 | 1.01E-03 | 2.41E-02 | 2.01E+00 | NO. Based | on facility-wide p | otential. | 4.02E-06 |
| Styrene (TH) | 100425 | 2.40E-04 | 5.77E-03 | 4.81E-01 | NO. Based | on facility-wide p | otential. | 9.62E-07 |
| Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH) | 1746016 | 5.25E-11 | 1.26E-09 | 1.05E-07 | NO. Based | on facility-wide p | otential. | 2.10E-13 |
| Toluene (TH) | 108883 | 7.29E-01 | 1.75E+01 | 1.46E+03 | NO. Based | on facility-wide p | otential. | 2.92E-03 |
| Trichloroethylene (TH) | 79016 | 0.00E+00 | 0.00E+00 | 0.00E+00 | NO. Based | on facility-wide p | otential. | 0.00E+00 |
| Y 1 (TI) | | | | | | | | |

1.45E+00

1.21E+02

1.05E-07

5.25E-11

0.00

5.25E-11

NO. Based on facility-wide potential.

1.05E-07

2.1E-13

2.41E-04

Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH)

1746016

5.25E-11

6.04E-02

Xylene (TH)

1330207

POTENTIAL EMISSIONS - PETONG CONTROLS / LIMITS

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 INPUT SCREEN



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.: | 1700016 |
| Permit No.: | 10682R00 |
| Facility City: | Burlington |
| Facility County: | Caswell |
| Spreadsheet Prepared by: | LLG |

| | preadsheet b missions inv | | 2 NO | • | :080 :530 | |
|---|------------------------------|---------------------|---------------------|---|---------------|------------|
| | Plant type: | Drum mix | | | | ı |
| | Fuel type: | Waste, No.4 or No. | s,6 fuel of l-fired | | - | |
| • | Fuel Sulf | ur Content: | 2.10 | % | (default valu | e is 0.5 % |
| | Controls: | Fabric filter contr | ols | | | - |

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

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

| Silo | I (*** | . 12200 |
|----------|--------|----------|
| Eillings | YES | |
| ⊢iuing? | 1' | 03579694 |

| | ishing on te? | 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: | 4 |

| Asphalt Cement Heater | | | |
|-----------------------|------|----------------------|-------|
| AC heater heat input: | 10 | million Btu per hour | (No.2 |
| Fuel Sulfur Content: | 0.50 | % | (defa |
| Hours of operation: | 8760 | hours per year | (defa |

(No.2 or diesel fuel oil -fired assumed) (default value is 0.5 %) (default is 8760 hours per year unless specified otherwise)

| Calculated Annual Production Limit: | 254,532 | tons per year |
|-------------------------------------|-----------|----------------|
| Requested Annual Production Limit | 2,190,000 | ton's per year |
| Requested Daily Production Limit | 6,000 | tons per day |

INVALID ENTRY. Value must be less than or equal to 254532 tpy. (if none desired leave default value = 24*tph)

| Is this plant NSPS Subpart I affected? | YES | |
|-----------------------------------------------------------------------|-------------------|-----------|
| Stack gas flow rate : | 68,145 | ACFM |
| Stack gas temperature : | 240 | oF |
| Stack % moisture: | 33 | % |
| Allowable emission rate under NSPS Subpart I: | 11.81 |]lb/hr `. |
| Control efficiency required: | 99.831 | % |
| Does Method 5 data already exist?: | NO | |
| ets noissiné bannosies é barteil. Est res no basal variaidhs iomhá | 1 40.00 99.429 | |
| | | lu a |

| | | |
|----------------------------------------------|------------|-----------------------------|
| Allowable emission rate under 2 D .0506: | 55.39 | lb/hr |
| Does this plant emit less than this limit ?: | <u>Yes</u> | (based on emission factors) |
| Control efficiency required: | 99.209 | 1% |

ATTACHMENT EA

| | Dryer Emissions Criteria Pollutants | | | | | | | | |
|---|-----------------------------------------|--------------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------|-------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| | Pollutant | Uncontrolled Emission Factor (lb/ton) | Controlled Emission Factor (lb/ton) | uncontrolled emis | ssion rate | 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 | | inniminin in | |
| | Filterable PM | 28 | 0.0134 | 7000 | | 3.5 | | HHHHHH | HHHHHHHHHHH |
| | Filterable PM10 | 6.4 | 0.0039 | 1600 | | 0.975 | HHHHHHH | XHHHHHHX | |
| | Total PM | 28 | 0.033 | 7000 | | 8.25 | 73.0 | 36.1 | 36.1 |
| | Total PM10 | 6.5 | 0.023 | 1625 | | 5.75 | 33,1 | 25.2 | 25.2 |
| | SO2 | 0.6034 | 0.6034 | 150.84 | | 150.84 | 660,68 | 660.68 | 660.68 |
| | co | 0.1300 | 0.130 | 32.5 | | 32.5 | 142.4 | 142.4 | 142.4 |
| | NOx | 0.0550 | 0.055 | 13.75 | | 13.75 | 60.2 | 60.2 | 60.2 |
| | VOC | 0.0320 | 0.032 | 8 | | 8 | 35,0 | 35.0 | 35.0 |
| | HAPs, TOTAL | | 0.010 | llillillillillilli | <u> VIIIIII</u> | 2.5 | 11.0 | 11.0 | 11.0 |
| | Silo Filling plus Loa | d Out Emis | sions, Crite | eria Pollutants | | | | · · · · · · · · · · · · · · · · · · · | |
| | | Emission | | | | | Title V, Potential Emissions (tpy) | PSD, Potential Emissions, | |
| | Poliutant | Factor, combined (lb/ton) | | | | emission rate (lb/hr) | (no controls, 8760 hours per year operation) | (tpy) (8760 hours per year operation) | Synthetic Minor, Potential Emissions (tpy) (with all operation restrictions) |
| | , -,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 1.11E-03 | illillilli | rammini | tunni | 2.77E-01 | 1.2 | 1.2. | 1,2 |
| | CO | 2.53E-03 | 14444 | KHHHHK | (11111) | 6.32E-01 | 2.8 | 2.8 | 2.8 |
| | voc | 1.61E-02 | HHHH | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX | 1111111 | 4.02E+00 | 17.6 | 17.6 | 17.6 |
| | HAPs, TOTAL | 2.74E-04 | <i>[[[]]</i> | MHHHH | [[[[]]] | 6.85E-02 | 0.3 | 0.3 | 0.3 |
| | | | | | | | | | · |
| | Rap Crusher Emissi | Emission | | · | | | , | · . | |
| | Dally days | 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) |
| | Pollutant | · · · | mmi | | mm | 9.705±00 | | | " |
| | Total PM Total PM10 | 0.0424 | HHHH | KHHHHH | <i>HHHH</i> | 2.76E+00 1.01E+00 | 12.1 | 12.1 4.4 | 12.1 |
| | IDIAI PM 10 [| . 0.0100 | <i></i> | MIIIIIII XI | <i>willi</i> | 1.012700 | 1 4.4 | 4.4 | 4.4 |
| - | Asphalt Cement Hea | ter Emissic | ons | | | | · · · · · · · · · · · · · · · · · · · | ··· | |
| | | | | | | | | | • |
| | M -4 | 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) |
| | Pollutant | <u> </u> | ,,,,,,,,,,, | ammining | mm, | 2 265 04 | 10 | 1.0 | 4.0 |
| | | 0.0235714 | HHHH | <i>RHHHH</i> | 44444 | 2.36E-01 2.36E-01 | 1.0 | 1.0 | 1.0 |
| | Total PM10 SO2 | 0.0235714 | HHHH | KHHHHH | HHHH | 2.36E-01 5.07E+00 | 22.2 | 1.0 | 1.0 |
| | | 0.0357143 | HHHH | HHHHH | HHHH | 3.57E-01 | 1.6 | 1.6 | 1.6 |
| | | 0.1428571 | | MHHHH | HHH | 1.43E+00 | 6.3 | 6.3 | 6.3 |
| | | 0.0024286 | <i>(1111111)</i> | HHHHH | (11111) | 2.43E-02 | 0.1 | 0.1 | 0.1 |
| | .50[| | | *************************************** | ******** | | | **** | |
| | Facility-wide Criteria | Pollutant I | Emissions | Summary | | | | | |
| | • | | | • | | Controlled Emission Rate, | Title V, Potential Emissions (tpy) (no controls, 8760 hours per year | PSD, Potential Emissions, (tpy) (8760 hours per year | Synthetic Minor, Potential Emissions (tpy) (with all operation restrictions) |
| | Pollutant | | | | | IM/III - | operation) | operation) | (min on operation restrictions) |
| | Total PM | <i>Illiliin</i> | allilli | amminiki | llllll | 1.12E+01 | 87.3 | 50.5 | 50.5 |
| | Total PM10 | [[]][[]] | Millit | MAHHHA | [[[]]] | 6.99E+00 | 39.7 | 31.8 | 31.8 |
| | 502 | MILLI | MILLIA | MILLIA | 111114 | 1.56E+02 | 682.9 | 682.9 | 682.9 |
| | co | HIIIII | TITITITA | HIIIIIIKI | 1111111 | 3.35E+01 | 146.7 | 146.7 | 146.7 |
| | NOx | | HHHH | AHHHHA | IIIIII | 1.52E+01 | 66.5 | 66.5 | 66.5 |
| | VOC | HHHH | HHHH | <i>(XIIIIIII)</i> | HHH | 1.20E+01 | 52.8 | 52.8 | 52.8 |
| | HAPs, TO⊤AL | | MIIIIII | MINITED IN | <u> VIIIIII</u> | 2.57E+00 | <u>,</u> 11.3 | 11.3 | 11.3 |
| | Facility-wide Toxic A | Air Pollutan | ts Summar | у | | | | | |
| | . TAP | | CAS No. | Action | 11111111 | TAP | CAS No. | Action | |
| _ | Ace | taldehyde (TH) | 75070 | NOTE 1 | | | Mercury, vapor (TH) 7439976 | NOTE 3 | soludo TAD in TDED -# |
| | | Acrolein (TH) | | NOTE 1 | | N | lethyl ethyl ketone (TH) 78933 | NOTE 1 | nclude TAP in TPER stipulation. |
| A | rsenic unlisted cmpds (comp. | | | NOTE 3 | <i>IIIIII</i> , | · | Methylene chloride (TH) 75092 | NOTE 1 NOTE 2: In | nclude TAP in TPER stipulation |
| | | Benzene (TH) | | NOTE 3 | | | Nickel metal (TH) 7440020 | NUIE 3 with opera | tion restrictions. |
| | | o(a)pyrene (T) | | NOTE 1 | | Perchloroethylene (te | trachloroethylene) (TH) 127184 | NOTE 1 | |
| | Beryllium metal (u | | | NOTE 1 | IIIIII, | | Phenol (TH) 108952 | the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s | lodeling Required. See "Toxic |
| | Cadmium metal (elemental u | | | NOTE 3 | IIIIII | Soluble Chromate Compou | | | s" worksheet. |
| | | disulfide (TH) | | NOTE 1 | HHH), | | Styrene (TH) 100425 | NOTE 1 | |
| | | aldehyde (TH) | | NOTE 3 | 1111111, | Tetrachlorodibenzo | -p-dioxin, 2,3,7,8- (TH) 1746016 | NOTE 1 | |
| | Hexachlorodibenzo-p-dioxin 1 | | | NOTE 1 | | | Toluene (TH) 108883 | NOTE 1 | |
| | | exene, n- (TH) | | NOTE 1 | | • | Trichloroethylene (TH) 79016 | NOTE 1 | |
| - | | gen Sulfide (T) | | NOTE 1 | | | Xylene (TH) 1330207 | NOTE 1 | - |
| | Manganese unlisted o | compounds (T) hloroform (TH) | | NOTE 1 | 1111111; | | | | |
| | | | | | | | | | |

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 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.

| | se azerasa | | selfitial recommendation of the more relations of | 1.01.01.01.000 | FACILITY ID | NO · | 1700016 |
|-------------------------------|------------|----------------------|---------------------------------------------------|-----------------------|-------------|--------|------------|
| COMPANY: Carolina Sunrock LLC | | PERMIT NU | | 10682R00 | | | |
| EMISSION SOURCE DESCR | IDTION | NSPS affected 250 tp | oh Waste, No.4 or No.6 fuel oil-fi | red, Drum mix asphalt | FACILITY C | TY: | Burlington |
| EMISSION SOURCE DESCR | IF HON: | plant (80 mmBtu/hr h | eat input, w/silofill, with RAP, sul | fur=2.1%) | FACILITY C | DUNTY: | Caswell |
| Annual Production Limit: | 2,190 | ,000 ton/year | Daily Production Limit: | n/a | ton/day | | |

SPREADSHEET PREPARED BY: LLG

| | ACTUAL EN | ACTUAL EMISSIONS | | | POTENTIAL EMISSIONS | | | | | III. | | III |
|-----------------------------------------------------|---------------|------------------|-------|--------|---------------------|--------------|-------------|------|----------------------|-------------|------|-------|
| AIR POLLUTANT EMITTED | (AFTER CONTRO | DLS / LIMITS) | (BEFO | RE CON | ITROLS / LIMITS) | (AFTER CONTR | OLS/LIMITS) | III. | m | Illi | III. | Illi |
| | lb/hr | tons/yr | lb/h | ŗ | tons/yr | lb/hr | tons/yr | illi | ''' | III. | illi | III. |
| PARTICULATE MATTER (PM) | 11.24 | 50.45 | | | 87.28 / | ullillilli. | 50.45 | III | :/// | III | 1111 | III. |
| PARTICULATE MATTER<10 MICRONS (PM ₁₀) | 6.99 | 31.84 | | | 39.72 / | | 31.84 | | m | ''' | | |
| PARTICULATE MATTER<2.5 MICRONS (PM _{2.5}) | | | | | | | | | | | | |
| SULFUR DIOXIDE (SO2) | 155.91 | 682.89 | | IIII | 682.89 4 | | 682.89 | III. | $\prime\prime\prime$ | '''' | | 1111. |
| NITROGEN OXIDES (NOx) | 15.18 | 66.48 | | | 66.48 | | 66.48 | illi | 111. | III. | HH | III. |
| CARBON MONOXIDE (CO) | 33.49 | 146.68 | | IIII | 146.68 | | 146.68 | Illi | ''' | <i>III)</i> | III | IIII |
| VOLATILE ORGANIC COMPOUNDS (VOC) | 12.05 | 52.77 | | | 52.77 1 | | 52.77 | | III. | Illi | | Illi. |
| TOTAL HAP | 2.57 | 11.25 | | | 11.25 | | 11.25 | III. | ''' | HI | HH | ''' |
| LARGEST HAP (formaldehyde) | 0.80 | 3.49 | | | 3.49 / | | 3.49 | illi | 1111 | III. | IIII | 1111. |

Attach INPUT worksheet

| engangatangan nagori, as emigdos labolistados primeridas de Antibalis. | Skiller (F1) | | | ering Parapasiya | siskäria (jästö) | ovaj spej. Ši b i | A Marie Committee | and of the state of the |
|------------------------------------------------------------------------|--------------|---------------|----------|------------------|------------------|--------------------------|-------------------|-----------------------------|
| | | | | | | | | EMISSION FACTOR |
| | CAS | ACTUAL EM | | | POTENTIAL I | | | (lb/ton asphalt produced |
| TOXIC / HAZARDOUS AIR POLLUTANT | Number | (AFTER CONTRO | | | TROLS / LIMITS) | (AFTER CONTR | | with Fabric filter controls |
| | | lb/hr | lb/yr | lb/hr | lb/yr | lb/hr | lb/yr | |
| Acetaldehyde (TH) | 75070 | 3.25E-01 | 2.85E+03 | 3.25E-01 | 2847.00 | 3.25E-01 | 2.85E+03 | 1.3E-03 |
| Acrolein (TH) | 107028 | 6.50E-03 | 5.69E+01 | 6.50E-03 | 56.94 | 6.50E-03 | 5.69E+01 | 2.6E-05 |
| Antimony unlisted compounds (H) | SBC-other | 4.50E-05 | 3.94E-01 | 4.50E-05 | 0.39 | 4.50E-05 | 3.94E-01 | 1.8E-07 |
| Arsenic unlisted cmpds (comp. of ASC) (TH) | | 1.40E-04 | 1.23E+00 | 1.40E-04 | 1.23 | 1.40E-04 | 1.23E+00 | 5.6E-07 |
| Benzene (TH) | 71432 | 9.90E-02 | 8.67E+02 | 9.90E-02 | 867.38 | 9.90E-02 | 8.67E+02 | 4.0E-04 |
| Benzo(a)pyrene (T) | 50328 | 4.41E-06 | 3.86E-02 | 4.41E-06 | 0.04 | 4.41E-06 | 3.86E-02 | 1.8E-08 |
| Beryllium metal (unreacted) (TH) | | 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) | | 1.03E-04 | 8.98E-01 | 1.03E-04 | 0.90 | 1.03E-04 | 8.98E-01 | 4.1E-07 |
| Carbon disulfide (TH) | 75150 | 6.23E-04 | 5.45E+00 | 6.23E-04 | 5.45 | 6.23E-04 | 5.45E+00 | 2.5E-06 |
| Chromium unlisted cmpds (add w/chrom acid to get CRC) (H) | CRC-other | 1.26E-03 | 1.11E+01 | 1.26E-03 | 11.06 | 1.26E-03 | 1.11E+01 | 5.1E-06 |
| Chromic acid (VI) (component of solCR6 and CRC) (TH) | 7738945 | 1.13E-04 | 9.86E-01 | 1.13E-04 | 0.99 | 1.13E-04 | 9.86E-01 | 4.5E-07 |
| Cobalt unlisted compounds (H) | COC-other | 6.50E-06 | 5.69E-02 | 6.50E-06 | 0.06 | 6.50E-06 | 5.69E-02 | 2.6E-08 |
| Cumene (H) | 98828 | 1.14E-03 | 1.00E+01 | 1.14E-03 | 10.02 | 1.14E-03 | 1.00E+01 | 4.6E-06 |
| Ethyl benzene (H) | 100414 | 6.41E-02 | 5.61E+02 | 6.41E-02 | 561.24 | 6.41E-02 | 5.61E+02 | 2.6E-04 |
| Ethyl chloride (chloroethane) (H) | 75003 | 2.18E-06 | 1.91E-02 | 2.18E-06 | 0.02 | 2.18E-06 | 1.91E-02 | 8.7E-09 |
| Formaldehyde (TH) | | 7.97E-01 | 6.98E+03 | 7.97E-01 | 6981.17 | 7.97E-01 | 6.98E+03 | 3.2E-03 |
| Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) | 57653857 | 3.25E-10 | 2.85E-06 | 3.25E-10 | 0.00 | 3.25E-10 | 2.85E-06 | 1.3E-12 |
| Нехапе, п- (ТН) | 110543 | 2.39E-01 | 2.10E+03 | 2.39E-01 | 2095.50 | 2.39E-01 | 2.10E+03 | 9.6E-04 |
| Hydrogen Chloride (hydrochloric acid) (TH) | 7647010 | 5.25E-02 | 4.60E+02 | 5.25E-02 | 459.90 | 5.25E-02 | 4.60E+02 | 2.1E-04 |
| Hydrogen Sulfide (T) | 7783064 | 1.37E-02 | 1.20E+02 | 1.37E-02 | 119.84 | 1.37E-02 | 1.20E+02 | 5.5E-05 |
| Lead unlisted compounds (H) | PBC-other | 3.75E-03 | 3.29E+01 | 3.75E-03 | 32.85 | 3.75E-03 | 3.29E+01 | 1.5E-05 |
| Manganese unlisted compounds (T) | MNC-other | 1.93E-03 | 1.69E+01 | 1.93E-03 | 16.86 | 1.93E-03 | 1.69E+01 | 7.7E-06 |
| Mercury, vapor (TH) | 7439976 | 6.50E-04 | 5.69E+00 | 6.50E-04 | 5.69 | 6.50E-04 | 5.69E+00 | 2.6E-06 |
| Methyl bromide (H) | 74839 | 2.49E-04 | 2.18E+00 | 2.49E-04 | 2.18 | 2.49E-04 | , 2.18E+00 | 1.0E-06 |
| Methyl chloride (H) | . 74873 | 1.56E-04 | 1.37E+00 | 1.56E-04 | 1.37 | 1.56E-04 | 1.37E+00 | 6.2E-07 |
| Methyl chloroform (TH) | 71556 | 1.20E-02 | 1.05E+02 | 1.20E-02 | 105.12 | 1.20E-02 | 1.05E+02 | 4.8E-05 |
| Methyl ethyl ketone (TH) | 78933 | 6.70E-03 | 5.87E+01 | 6.70E-03 | 58.67 | 6.70E-03 | 5.87E+01 | 2.7E-05 |
| Methylene chloride (TH) | 75092 | 8.23E-06 | 7.21E-02 | 8.23E-06 | 0.07 | 8.23E-06 | 7.21E-02 | 3.3E-08 |
| Napthalene (H) | 91203 | 1.65E-01 | 1.44E+03 | 1.65E-01 | 1442.95 | 1.65E-01 | 1.44E+03 | 6.6E-04 |
| Nickel metal (TH) | 7440020 | 1.58E-02 | 1.38E+02 | 1.58E-02 | 137.97 | 1.58E-02 | 1.38E+02 | 6.3E-05 |
| Perchloroethylene (tetrachloroethylene) (TH) | 127184 | 8.01E-05 | 7.01E-01 | 8.01E-05 | 0.70 | 8.01E-05 | 7.01E-01 | . 3.2E-07 |
| Phenol (TH) | 108952 | 1.01E-03 | 8.81E+00 | 1.01E-03 | 8.81 | 1.01E-03 | 8.81E+00 | 4.0E-06 |
| Phosphorus Metal, Yellow or White (H) | 7723140 | 7.00E-03 | 6.13E+01 | 7.00E-03 | 61.32 | 7.00E-03 | 6.13E+01 | 2.8E-05 |
| Polycyclic Organic Matter (H) | POM | 2.20E-01 | 1.93E+03 | 2.20E-01 | 1927.20 | 2.20E-01 | 1.93E+03 | 8.8E-04 |
| Propionaldehyde (H) | 123386 | 3.25E-02 | 2.85E+02 | 3.25E-02 | 284.70 | 3.25E-02 | 2.85E+02 | 1.3E-04 |
| Quinone (H) | 106514 | 4.00E-02 | 3.50E+02 | 4.00E-02 | 350.40 | 4.00E-02 | 3.50E+02 | 1.6E-04 |
| Selenium compounds (H) | | 8.75E-05 | 7.67E-01 | 8.75E-05 | 0.77 | 8.75E-05 | 7.67E-01 | 3.5E-07 |
| Styrene (TH) | 100425 | 2.40E-04 | 2.11E+00 | 2.40E-04 | 2.11 | 2.40E-04 | 2.11E+00 | 9.6E-07 |

| Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH) | 1746016 | 5.25E-11 | 4.60E-07 | 5.25E-11 | 0.00 | 5.25E-11 | 4.60E-07 | 2.1E-13 |
|------------------------------------------------|-------------|-----------------|--------------|-------------|----------------|--------------------|-----------|---------------------------|
| Toluene (TH) | 108883 | 7.29E-01 | 6.39E+03 | 7.29E-01 | 6386.67 | 7.29E-01 | 6.39E+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 |
| Trimethylpentane, 2,2,4- (H) | 540841 | 1.00E-02 | 8.78E+01 | 1.00E-02 | 87.85 | 1.00E-02 | 8.78E+01 | 4.0E-05 |
| Xylene (TH) | 1330207 | 6.04E-02 | 5.29E+02 | 6.04E-02 | 528.72 | . 6.04E-02 | 5.29E+02 | 2.4E-04 |
| Xylene, o- (H) | 95476 | 2.57E-03 | 2.25E+01 | 2.57E-03 | 22.50 | 2.57E-03 | 2.25E+01 | 1.0E-05 |
| | | | | | | | | |
| **** | | | | | | | | EMISSION FACTOR |
| Expected actual emissions after contro | ls and limi | itations consis | ting of an a | nnual produ | ction limit of | 2190000 tons | s | (lb/ton asphalt produce |
| | | | _ | - | | | | |
| TOXIC AIR POLLUTANT | CAS Num. | lb/hr | lb/day | lb/yr | Mode | eling Required | 1? | with Fabric filter contro |
| Acetaldehyde (TH) | 75070 | 3.25E-01 | 7.80E+00 | 2.85E+03 | NO. Based | on facility-wide p | otential. | 1.30E-03 |
| Acrolein (TH) | 107028 | 6.50E-03 | 1.56E-01 | 5.69E+01 | NO. Based | on facility-wide p | otential. | 2.60E-05 |
| Arsenic unlisted cmpds (comp. of ASC) (TH) | ASC-other | 1.40E-04 | 3.36E-03 | 1.23E+00 | YES. | Modeling require | d | 5.60E-07 |
| Benzene (TH) | 71432 | 9.90E-02 | 2.38E+00 | 8.67E+02 | YES. | Modeling require | d | 3,96E-04 |
| Benzo(a)pyrene (T) | 50328 | 4.41E-06 | 1.06E-04 | 3.86E-02 | NO. Based | on facility-wide p | otential. | 1.76E-08 |
| Beryllium metal (unreacted) (TH) | 7440417 | 0.00E+00 | 0.00E+00 | 0.00E+00 | NO. Based | on facility-wide p | otential. | 0.00E+00 |
| Cadmium metal (elemental unreacted) (TH) | 7440439 | 1.03E-04 | 2.46E-03 | 8.98E-01 | YES. | Modeling require | ıd | . 4.10E-07 |
| Carbon disulfide (TH) | 75150 | 6.23E-04 | 1.49E-02 | 5.45E+00 | NO. Based | on facility-wide p | otential. | 2.49E-06 |
| Soluble Chromate compounds as Chrome (VI) (TH) | SOLCR6 | 1.13E-04 | 2.70E-03 | 9.86E-01 | NO. Based | on facility-wide p | otential. | 4.50E-07 |
| Formaldehyde (TH) | 50000 | 7.97E-01 | 1.91E+01 | 6.98E+03 | YES. | Modeling require | ıd | 3.19E-03 |
| Hexane, n- (TH) | 110543 | 2.39E-01 | 5.74E+00 | 2.10E+03 | NO. Based | on facility-wide p | otential. | 9.57E-04 |
| Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) | 57653857 | 3.25E-10 | 7.80E-09 | 2.85E-06 | NO. Based | on facility-wide p | otential. | 1.30E-12 |
| . Hydrogen Sulfide (Т) | 7783064 | 1.37E-02 | 3.28E-01 | 1.20E+02 | NO. Based | on facility-wide p | otential. | 5.47E-05 |
| Manganese unlisted compounds (T) | MNC-other | 1.93E-03 | 4.62E-02 | 1.69E+01 | NO. Based | on facility-wide p | otential. | 7.70E-06 |
| Mercury, vapor (TH) | 7439976 | 6.50E-04 | 1.56E-02 | 5.69E+00 | YES. | Modeling require | ıd | 2.60E-06 |
| Methylene chloride (TH) | 75092 | 8.23E-06 | 1.97E-04 | 7.21E-02 | NO. Based | on facility-wide p | otential. | 3.29E-08 |
| Methyl chlorofarm (TH) | 71556 | 1.20E-02 | 2.88E-01 | 1.05E+02 | NO. Based | on facility-wide p | otential. | 4.80E-05 |
| Methyl ethyl ketone (TH) | 78933 | 6.70E-03 | 1.61E-01 | 5.87E+01 | NO. Based | on facility-wide p | otential. | 2.68E-05 |
| Nickel metal (TH) | 7440020 | 1.58E-02 | 3.78E-01 | 1.38E+02 | YES. | Modeling require | d | 6.30E-05 |
| Perchloroethylene (tetrachloroethylene) (TH) | 127184 | 8.01E-05 | 1.92E-03 | 7.01E-01 | NO. Based | on facility-wide p | otential. | 3.20E-07 |
| Phenol (TH) | 108952 | 1.01E-03 | 2.41E-02 | 8.81E+00 | NO. Based | on facility-wide p | otential. | 4.02E-06 |
| Styrene (TH) | 100425 | 2.40E-04 | 5.77E-03 | 2.11E+00 | NO. Based | on facility-wide p | otential. | 9.62E-07 |
| Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH) | 1746016 | 5.25E-11 | 1.26E-09 | 4.60E-07 | NO. Based | on facility-wide p | otential. | 2.10E-13 |
| Toluene (TH) | 108883 | 7.29E-01 | 1.75E+01 | 6.39E+03 | NO. Based | on facility-wide p | otentiai. | 2.92E-03 |
| Trichloroethylene (TH) | 79016 | 0.00E+00 | 0.00E+00 | 0.00E+00 | | on facility-wide p | | 0.00E+00 |
| | | 6.04E-02 | 1.45E+00 | 5.29E+02 | | | otential. | 2.41E-04 |

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 INPUT SCREEN



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.

| Company Name: | Carolina Sunrock, LLC |
|--------------------------|-----------------------|
| Facility ID No.: | 1700016 |
| Permit No.: | 10682R00 |
| Facility City: | Burlington |
| Facility County: | Caswell |
| Spreadsheet Prepared by: | LT.C |

| readsheet b missions inv | | 2. NO | • | |
|---------------------------------|---------------------|---------------------|---|----------------------|
| Plant type: | Drum míx | | | |
| Fuel type: | Waste, No.4 or No. | o. 6 fuel oil-fixed | | |
| Fuel Sulf | ur Content: | 0.50 | % | (default value is 0. |
| Controls: | Fabric filter contr | rols | | |

| Dryer heat input: | · 80 | million Btu per hour | |
|------------------------------------|------|----------------------|---|
| Plant maximum production capacity: | 250 | tons per hour | _ |

| Asphalt Prop | erties | | |
|----------------------|--------|-----------|----------------------------------|
| Asphait temperature: | 325 | degrees F | (default value of 325 degrees F) |
| Volatility loss (V): | -0.5 | % | (default value of -0.5 %) |

| Silo | wer. | | E 410 |
|----------|------|---|--------------|
| Filling? | 152 | • | |

| j | ushing on ite? | YES | | |
|--------------------------|-------------------|----------------|-------------------|---|
| Crushing Capacity? | 65 | tons per hour | No. of crushers: | 1 |
| Hours of operation: 8760 | | hours per year | No. of screens: | 1 |
| 1 | | - | No. of conveyors: | 4 |

| 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: | | tons per year | |
|---|-------------------------------------|---------|---------------|-------------------------------------------------|
| | Requested Annual Production Limit | 500,000 | 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 : | 68,145 | ACFM |
| Stack gas temperature : | 240 | oF |
| Stack % moisture: | 33 | - |
| Allowable emission rate under NSPS Subpart l: | 11.81 | lb/hr . |
| Control efficiency required: | 99.831 | |
| Does Method 5 data already exist?: | NO | 25.7 |
| स्वास्त्र गठांकांपर्छ प्रवागांपर्धावात्र प्रवागांभागः व्यक्षण्यस्य गठां व्यक्षकांप्रास्त्र शिक्षकांत्रास्त्र शिक्षकांत्रा | 1 (40.00) 1 (40.429) | De la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de la company de |
| Allowable emission rate under 2 D 0508: | E5 30 | lh/hr |
| | | |

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

| Politulant Factor (black) Cache | Criteria Foliutants | | | | | | • | | • |
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| Asphalt Cement Heater Emissions Uncontrolled Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emission Emissio | | | 1111111 | HHHH | X11111X | | | | |
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| Acetaldehyde (TH) 75070 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 1 NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 | Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL | | | | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 | 96.8 145.5 61.7 52.7 | 96,8 145.5 61.7 52.7 | 26.0 33.5 15.2 12.0 |
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| Arsenic unlisted cmpds (comp. of ASC) (TH) | Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic A | | CAS No. | Action | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 96.8 145.5 61.7 52.7 11.3 | 96.8 145.5 61.7 52.7 11.3 | 26.0 33.5 15.2 12.0 |
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| Beryllium metal (unreacted) (TH) | Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL TAP Ace | taldehyde (TH) Acrolein (TH) of ASC) (TH) | CAS No. 75070 107028 ASC-other | Action NOTE 1 NOTE 1 NOTE 3 | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439976 Methyl ethyl ketone (TH) 78933 Methylene chloride (TH) 75092 | 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 3 | 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation |
| Cadmium metal (elemental unreacted) (TH) 7440439 NOTE 2 Soluble Chromate Compounds as Chrome VI (TH) 7738945 NOTE 1 NOTE 1 Styrene (TH) 100425 NOTE 1 Tetrachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) 1746016 NOTE 1 Trichloroethylene (TH) 100883 NOTE 1 N | Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace Arsenic unlisted cmpds (comp | taldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) | CAS No. 75070 107028 ASC-other 71432 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439976 Alethyl ethyl ketone (TH) 78933 Methylene chloride (TH) 75092 Nickel metal (TH) 7440020 | 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 2: I | 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation |
| Carbon disulfide (TH) 75150 NOTE 1 Styrene (TH) 100425 NOTE 1 Formaldehyde (TH) 50000 NOTE 3 Tetrachlorodibenzo-p-dioxin, 2,3,6,7,8 (TH) 1748016 NOTE 1 Toluene (TH) 109883 NOTE 1 NOTE 1 Trichloroethylene (TH) 79016 NOTE 1 NO | Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace Arsenic unlisted cmpds (comp | taldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) o(a)pyrene (T) | CAS No. 75070 107028 ASC-other 71432 50328 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439976 Methyl ethyl ketone (TH) 78933 Methylene chloride (TH) 75092 Nickel metal (TH) 7440020 Marachloroethylene) (TH) 127184 | 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 2: I with opera | 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation restrictions. |
| Hexachlorodibenzo-p-dioxin 1,2,3,6,78 (TH) 57653857 NOTE 1 Toluene (TH) 108883 NOTE 1 NOTE 1 Trichloroethylene (TH) 79016 NOTE 1 NOTE 1 NOTE 1 Xylene (TH) 1330207 NOTE 1 | Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace Arsenic unlisted cmpds (comp | taldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) o(a)pyrene (T) nreacted) (TH) | 75070 107028 ASC-other 71432 50328 7440417 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 743976 Methyl ethyl ketone (TH) 75092 Nickel metal (TH) 7440020 Atrachloroethylene) (TH) 127184 Phenol (TH) 108952 | 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3: NOTE 2: I | 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation restrictions. Modeling Required. See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required S |
| Hexane, n- (TH) 110543 NOTE 1 Trichloroethylene (TH) 79016 NOTE 1 Hydrogen Sulfide (T) 7783064 NOTE 1 Xylene (TH) 1330207 NOTE 1 Manganese unlisted compounds (T) MNC-other NOTE 1 | Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace Arsenic unlisted cmpds (comp Benz Beryllium metal (u | taldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) o(e)pyrene (T) inreacted) (TH) inreacted) (TH) | 75070 107028 ASC-other 71432 50328 7440417 7440439 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 2 NOTE 1 | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 743976 Methyl ethyl ketone (TH) 75092 Nickel metal (TH) 7440020 Merchloroethylene) (TH) 127184 Phenol (TH) 108952 nds as Chrome VI (TH) 7738945 | 96.8 145.5 61.7 52.7 11.3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 3: NOTE 1: I | 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation restrictions. Modeling Required. See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required S |
| Hydrogen Sulfide (T) 7783064 NOTE 1 Xylene (TH) 1330207 NOTE 1 Manganese unlisted compounds (T) MNC-other NOTE 1 | Total PM Total PM10 SO2 CO NOX VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace Arsenic unlisted cmpds (comp Benz Beryllium metal (ulcometal under the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of the composition of | taldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) Gelpyrene (T) nnreacted) (TH) n disulfide (TH) naldehyde (TH) | 75070 107028 ASC-other 71432 50328 7440417 7440439 75150 50000 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 2 NOTE 1 NOTE 3 | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439978 Aethyl ethyl ketons (TH) 78933 Methylene chloride (TH) 75092 Mickel metal (TH) 127184 Phenol (TH) 168952 Inds as Chrome VI (TH) 100425 | 96.8 145.5 61.7 52.7 11.3 NOTE 1 NOTE 3 NOTE 1 NOTE 1 | 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation restrictions. Modeling Required. See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required See "Toxional Required S |
| Manganese unlisted compounds (T) MNC-other NOTE 1 | Total PM Total PM10 SO2 CO NCx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace Arsenic unlisted cmpds (comp Benz) Beryllium metal (u Cadmium metal (elemental u Carbor Fom Hexachlorodibenzo-p-dioxin 1 | taldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) Genzene (TH) Inneacted) (TH) Inneacted) (TH) Indiadehyde (TH) Indiadehyde (TH) Indiadehyde (TH) Indiadehyde (TH) | 75070 107028 ASC-other 71432 50328 7440417 7440439 75150 50000 67653857 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 2 NOTE 1 NOTE 3 NOTE 1 | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439978 /ethyl ethyl ketone (TH) 78933 Methylene chloride (TH) 75092 Nickel metal (TH) 108952 rechloroethylene) (TH) 108952 rods as Chrome VI (TH) 100425 Styrene (TH) 100425 -p-dioxin, 2,3,7,8- (TH) 1746016 | 96.8 145.5 61.7 52.7 11.3 NOTE 1 NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 3 NOTE 1 NOTE 1 NOTE 3 NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 3 NOTE 1 NOTE 3 NOTE | 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation restrictions. Modeling Required. See "Toxic |
| | Total PM Total PM10 SO2 CO NCx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace Arsenic unlisted cmpds (comp Benz Beryllium metal (u Carbon Fom Hexachlorodibenzo-p-dioxin 1 | taldehyde (TH) Acrolein (TH) Of ASC) (TH) Benzene (TH) o(a)pyrene (T) nneacted) (TH) nneacted) (TH) nneacted) (TH) naldehyde (TH) 2,3,6,7,8 (TH) lexane, n- (TH) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 7440439 75150 50000 67653857 110543 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 2 NOTE 1 NOTE 3 NOTE 1 NOTE 1 NOTE 1 | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439976 Methyl ethyl ketone (TH) 78933 Methylene chloride (TH) 75092. Nickel metal (TH) 7440020 Marchloroethylene) (TH) 127184 Phenol (TH) 18952 rds as Chrome VI (TH) 7738945 Styrene (TH) 100425 -p-dioxin, 2,3,7,8- (TH) 1746016 Toluene (TH) 108883 Trichloroethylene (TH) 79016 | 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 | 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation restrictions. Modeling Required. See "Toxic |
| | Total PM Total PM10 SO2 CO NOx VOC HAPs, TOTAL Facility-wide Toxic A TAP Ace Arsenic unlisted cmpds (comp Benz Beryllium metal (u Cadmium metal (elemental u Carbor Fom Hexachlorodibenzo-p-dioxin 1 Hydro | taldehyde (TH) Acrolen (TH) Acrolen (TH) Orallon (TH) Benzene (TH) Orallon (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH) Inneacted) (TH | CAS No. 75070 107028 ASC-other 71432 50328 7440417 7440439 75150 50000 57653857 110543 7783064 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 | | 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439976 Methyl ethyl ketone (TH) 78933 Methylene chloride (TH) 75092. Nickel metal (TH) 7440020 Matechloroethylene) (TH) 127184 Phenol (TH) 18952 Inds as Chrome VI (TH) 7738945 Styrene (TH) 100425 -p-dioxin, 2,3,7,8- (TH) 1746016 Toluene (TH) 108883 Trichloroethylene (TH) 79016 | 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 | 26.0 33.5 15.2 12.0 2.6 nclude TAP in TPER stipulation restrictions. Modeling Required. See "Toxic |

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ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 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.

| COMPANY: Carolina Sunrock, LLC | | | | | | | NO.: | 1700016 |
|--------------------------------|--------------------------|------------------------|----------------|---------------|---------------------|---------------|------------------|---------|
| COMPANY: | | | | | | | | |
| EMICOLON COLUDOS DESCRIBITO | n mix asphalt | | | Burlington | | | | |
| EMISSION SOURCE DESCRIPTION | plant (80 mmBtu/r | nr heat input, w/silot | fill, with RAP | , sulfur=0.5% |) | FACILITY C | OUNTY: | Caswell |
| Annual Production Limit: 5 | 00,000 ton/yea | ar Daily Produ | ction Limit: | n | la | ton/day | | |
| SPREADSHEET PREPARED BY: | LLG | | | | | | • | |
| | | | | | ena ing wantaw, aga | 9918119611881 | ABBNE BBB, MELAN | |
| | | ACTUAL EN | IISSIONS | <u> </u> | POTENTIAL I | EMISSIONS | 5 i===-7 | |
| AIR POLLUTANT EMITTED | | (AFTER CONTRO | DLS / LIMITS) | | TROLS / LIMITS) 📝 | (AFTER CONTE | | |
| | | lb/hr | tons/yr | lb/hr | tons/yr | lb/hr | tons/yr | |
| PARTICULATE MATTER (PM) | | 11.06 | 11.52 | | 86.48 | | 11.52 | |
| PARTICULATE MATTER<10 MICRO | ONS (PM ₁₀) | 6.81 | 7.27 | | 38.93 | | 7.27 | |
| PARTICULATE MATTER<2.5 MICR | ONS (PM _{2.5}) | | | | | | | |
| SULFUR DIOXIDE (SO2) | | 22.10 | 26.04 | | 96.80 | | 1 26.04 ↓ | |
| NITROGEN OXIDES (NOx) | | 14.08 | 15.19 | | 61.66 | | 15.19 | |
| CARBON MONOXIDE (CO) | | 33.21 | 33.49 | | 145.48 | | 33.49 | |
| VOLATILE ORGANIC COMPOUND | S (VOC) | 12.03 | 12.05 | | 52.69 | | 12.05 | |
| TOTAL HAP | | 2.57 | 2.57 | | 11.25 | | 2.57 | |
| LARGEST HAP (formaldehyde) | | 0.80 | 0.80 | | 3.49 | | 0.80 | |
| • | | Attach II | NPUT wor | ksheet | | | | |

| | | | | | | | 1. | EMISSION FACTOR |
|-----------------------------------------------------------|---------------|---------------------------|------------|----------------------------|-------------|---------------------------|------------|------------------------------|
| | 242 | ACTUAL EM | ISSIONS | | POTENTIAL E | MISSIONS | | (lb/ton asphalt produced, |
| TOXIC / HAZARDOUS AIR POLLUTANT | CAS Number | (AETED CONTROLS / LIMITS) | | (BEFORE CONTROLS / LIMITS) | | (AFTER CONTROLS / LIMITS) | | with Fabric filter controls) |
| | Monnoe | lb/hr | b/yr | lb/hr | lb/уг | lb/hr | lb/yr | with abile line contects) |
| Acetaldehyde (TH) | 75070 | 3.25E-01 | 6.50E+02 | 3.25E-01 | 2847.00 | 3.25E-01 | 6.50E+02 | 1.3E-03 |
| Acrolein (TH) | 107028 | 6.50E-03 | 1.30E+01 | 6.50E-03 | 56.94 | 6.50E-03 | 1.30E+01 | 2.6E-05 |
| Antimony unlisted compounds (H) | SBC-ather | 4.50E-05 | 9.00E-02 | 4.50E-05 | 0.39 | 4.50E-05 | 9.00E-02 | 1.8E-07 |
| Arsenic unlisted cmpds (comp. of ASC) (TH) | ASC-other | 1.40E-04 | 2.80E-01 | 1.40E-04 | 1.23 | 1.40E-04 | 2.80E-01 | 5.6E-07 |
| Benzene (TH) | 71432 | 9.90E-02 | 1.98E+02 | 9.90E-02 | 867.38 | 9.90E-02 | 1.98E+02 | 4.0E-04 |
| Benzo(a)pyrene (T) | 50328 | 4.41E-06 | 8.82E-03 | 4.41E-06 | 0.04 | 4.41E-06 | - 8.82E-03 | 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 | 2.05E-01 | 1.03E-04 | 0.90 | 1.03E-04 | 2.05E-01 | 4.1E-07 |
| Carbon disulfide (TH) | 75150 | 6.23E-04 | 1.25E+00 | 6.23E-04 | 5.45 | 6.23E-04 | 1.25E+00 | 2.5E-06 |
| Chromium unlisted cmpds (add w/chrom acid to get CRC) (H) | CRC-other | 1.26E-03 | 2.53E+00 | 1.26E-03 | 11.06 | 1.26E-03 | 2.53E+00 | 5.1E-06 |
| Chromic acid (VI) (component of solCR6 and CRC) (TH) | 7738945 | 1.13E-04 | 2.25E-01 | 1.13E-04 | 0.99 | 1.13E-04 | 2.25E-01 | 4.5E-07 |
| Cobalt unlisted compounds (H) | COC-other | 6.50E-06 | 1.30E-02 | 6.50E-06 | 0.06 | 6.50E-06 | 1.30E-02 | 2.6E-08 |
| Cumene (H) | 98828 | 1.14E-03 | 2.29E+00 | 1.14E-03 | 10.02 | 1.14E-03 | 2.29E+00 | 4.6E-06 |
| Ethyl benzene (H) | 100414 | 6.41E-02 | 1.28E+02 | 6.41E-02 | 561.24 | 6.41E-02 | 1.28E+02 | 2.6E-04 |
| Ethyl chloride (chloroethane) (H) | 75003 | 2.18E-06 | 4.37E-03 | 2.18E-06 | 0.02 | 2:18E-06 | 4.37E-03 | 8.7E-09 |
| Formaldehyde (TH) | 50000 | 7.97E-01 | 1.59E+03 | 7.97E-01 | 6981.17 | 7.97E-01 | 1.59E+03 | 3.2E-03 |
| Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) | 57653857 | 3.25E-10 | 6.50E-07 | 3.25E-10 | 0.00 | 3.25E-10 | 6.50E-07 | 1.3E-12 |
| Hexane, n- (TH) | 110543 | 2.39E-01 | 4.78E+02 | 2.39E-01 | 2095.50 | 2.39E-01 | 4.78E+02 | 9.6E-04 |
| Hydrogen Chloride (hydrochloric acid) (TH) | 7647010 | 5:26E-02 | . 1.05E+02 | 5.25E-02 | 459.90 | 5.25E-02 | 1.05E+02 | 2.1E-04 |
| Hydrogen Sulfide (T) | 7783064 | 1.37E-02 | 2.74E+01 | 1.37E-02 | 119.84 | 1.37E-02 | 2.74E+01 | 5.5E-05 |
| Lead unlisted compounds (H) | PBC-other | 3.75E-03 | 7.50E+00 | 3.75E-03 | 32.85 | 3.75E-03 | 7.50E+00 | 1.5E-05 |
| Manganese unlisted compounds (T) | MNC-other | 1.93E-03 | 3.85E+00 | 1.93E-03 | 16.86 | 1.93E-03 | 3.85E+00 | 7.7E-06 |
| Mercury, vapor (TH) | 7439976 | 6.50E-04 | 1.30E+00 | 6.50E-04 | 5.69 | 6.50E-04 | 1.30E+00 | 2.6E-06 |
| Methyl bromide (H) | 74839 | 2.49E-04 | 4.98E-01 | 2.49E-04 | 2.18 | 2.49E-04 | 4.98E-01 | 1.0E-06 |
| Methyl chloride (H) | 74873 | 1.56E-04 | 3.12E-01 | 1.56E-04 | 1.37 | 1.56E-04 | 3.12E-01 | 6.2E-07 |
| Methyl chloroform (TH) | 71556 | 1.20E-02 | 2.40E+01 | 1.20E-02 | 105.12 | 1.20E-02 | 2.40E+01 | 4.8E-05 |
| Methyl ethyl ketone (TH) | 78933 | 6.70E-03 | 1.34E+01 | 6.70E-03 | 58.67 | 6.70E-03 | 1.34E+01 | 2.7E-05 |
| Methylene chloride (TH | 75092 | 8.23E-06 | 1.65E-02 | 8.23E-06 | 0.07 | 8.23E-06 | 1.65E-02 | 3.3E-08 |
| Napthalene (H | 91203 | 1.65E-01 | 3.29E+02 | 1.65E-01 | 1442.95 | 1.65E-01 | 3.29E+02 | 6.6E-04 |
| Nickel metal (TH) | 7440020 | 1.58E-02 | 3.15E+01 | 1.58E-02 | 137.97 | 1.58E-02 | 3.15E+01 | 6.3E-05 |
| Perchtoroethylene (tetrachloroethylene) (TH | 127184 | 8.01E-05 | 1.60E-01 | 8.01E-05 | 0.70 | 8.01E-05 | 1.60E-01 | 3.2E-07 |
| Phenoi (TH | 108952 | 1.01E-03 | 2.01E+00 | 1.01E-03 | 8.81 | 1.01E-03 | 2.01E+00 | 4.0E-06 |
| Phosphorus Metal, Yellow or White (H | 7723140 | 7.00E-03 | 1.40E+01 | 7.00E-03 | 61:32 | 7.00E-03 | 1.40E+01 | 2.8E-05 |
| Polycyclic Organic Matter (H |) POM | 2.20E-01 | 4.40E+02 | 2.20E-01 | 1927.20 | 2.20E-01 | 4.40E+02 | 8.8E-04 |
| Propionaidehyde (H | 123386 | 3.25E-02 | 6.50E+01 | 3.25E-02 | 284.70 | 3.25E-02 | 6.50E+01 | 1.3E-04 |
| Quinone (H | 106514 | 4.00E-02 | 8.00E+01 | 4.00E-02 | 350.40 | 4.00E-02 | 8.00E+01 | 1.6E-04 |
| Selenium compounds (H |) SEC | 8.75E-05 | 1.75E-01 | 8.75E-05 | 0.77 | 8.75E-05 | 1.75E-01 | 3.5E-07 |
| Styrene (TH | | 2.40E-04 | 4.81E-01 | 2.40E-04 | 2.11 | 2.40E-04 | 4.81E-01 | 9.6E-07 |

| <u> </u> | | | _ | | -7: - | | | • |
|------------------------------------------------|-------------|----------------|---------------|-------------|---------------------------------------|---------------------|-----------|---------------------------|
| Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH) | 1746016 | 5.25E-11 | 1.05E-07 | 5.25E-11 | 0.00 | 5.25E-11 | 1.05E-07 | 2.1E-13 |
| Toluene (TH) | | 7.29E-01 | 1.46E+03 | 7.29E-01 | 6386.67 | 7.29E-01 | 1.46E+03 | 2.9E-03 |
| Trichloroethylene (TH) | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00 | 0.00E+00 | 0.00E+00 | 0.0E+00 |
| Trimethylpentane, 2,2,4- (H) | 540841 | 1.00E-02 | 2.01E+01 | 1.00E-02 | 87.85 | 1.00E-02 | 2.01E+01 | 4.0E-05 |
| Xylene (TH) | 1330207 | 6.04E-02 | 1.21E+02 | 6.04E-02 | 528.72 | 6.04E-02 | 1.21E+02 | 2.4E-04 |
| Xylene, o- (H) | 95476 | 2.57E-03 | 5.14E+00 | 2.57E-03 | 22.50 | 2.57E-03 | 5.14E+00 | 1.0E-05 |
| | | | | | | | | |
| * | | | | - | | | | EMISSION FACTOR |
| Expected actual emissions after control | ols and lim | itations consi | sting of an a | nnual produ | ction limit of | f 500000 tons | | (lb/ton asphalt produce |
| | | | -, | - | 4 | | | |
| TOXIC AIR POLLUTANT | CAS Num. | lb/hr | lb/day | lb/yr | Mod | eling Required | 1? | with Fabric filter contro |
| Acetaldehyde (TH) | 75070 | 3.25E-01 | 7.80E+00 | 6.50E+02 | NO. Based | on facility-wide p | otential. | 1.30E-03 |
| Acrolein (TH) | 107028 | 6.50E-03 | 1.56E-01 | 1.30E+01 | NO. Based | on facility-wide p | otential. | 2.60E-05 |
| Arsenic unlisted cmpds (comp. of ASC) (TH) | ASC-other | 1.40E-04 | 3.36E-03 | 2.80E-01 | YES. | . Modeling require | d | 5.60E-07 |
| Вепхеле (ТН) | 71432 | 9.90E-02 | 2.38E+00 | 1.98E+02 | YES. | . Modeling require | d | 3.96E-04 |
| Benzo(a)pyrene (T) | 50328 | 4.41E-06 | 1.06E-04 | 8.82E-03 | 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 | 2.05E-01 | NO. Because of operating restriction | | | 4.10E-07 |
| Carbon disulfide (TH) | 75150 | 6.23E-04 | 1.49E-02 | 1.25E+00 | NO. Based on facility-wide potential. | | | 2.49E-06 |
| Soluble Chromate compounds as Chrome (VI) (TH) | SOLCR6 | 1.13E-04 | 2.70E-03 | 2.25E-01 | NO. Based on facility-wide potential. | | | 4.50E-07 |
| 5 Formaldehyde (TH) | 50000 | 7.97E-01 | 1.91E+01 | 1.59E+03 | YES. | Modeling require | d | 3.19E-03 |
| Hexane, n- (TH) | | 2.39E-01 | 5.74E+00 | 4.78E+02 | NO. Based | on facility-wide po | otential. | 9.57E-04 |
| Hexachlorodibenzo-p-dioxin 1,2,3,6,7,8 (TH) | 57653857 | 3.25E-10 | 7.80E-09 | 6.50E-07 | NO. Based | on facility-wide po | otential. | 1.30E-12 |
| Hydrogen Sulfide (T) | 7783064 | 1.37E-02 | 3.28E-01 | 2.74E+01 | NO. Based | on facility-wide po | otential. | 5.47E-05 |
| Manganese unlisted compounds (T) | MNC-other | 1.93E-03 | 4.62E-02 | 3.85E+00 | NO. Based | on facility-wide po | otential | 7.70E-06 |
| Mercury, vapor (TH) | 7439976 | 6.50E-04 | 1.56E-02 | 1.30E+00 | YES. | Modeling require | d | 2.60E-06 |
| Methylene chloride (TH) | 75092 | 8.23E-06 | 1.97E-04 | 1.65E-02 | NO. Based | on facility-wide po | otential. | 3.29E-08 |
| Methyl chloroform (TH) | 71556 | 1.20E-02 | 2.88E-01 | 2.40E+01 | NO. Based | on facility-wide po | otential. | 4.80E-05 |
| Methyl ethyl ketone (TH) | 78933 | 6.70E-03 | 1.61E-01 | 1.34E+01 | NO. Based | on facility-wide po | otential. | 2.68E-05 |
| Nickel metal (TH) | 7440020 | 1.58E-02 | 3.78E-01 | 3.15E+01 | YES. Modeling required | | 6.30E-05 | |
| Perchloroethylene (tetrachloroethylene) (TH) | 127184 | 8.01E-05 | 1.92E-03 | 1.60E-01 | NO. Based | on facility-wide po | otential. | 3.20E-07 |
| Phenol (TH) | 108952 | 1.01E-03 | 2.41E-02 | 2.01E+00 | NO. Based | on facility-wide po | otential. | 4.02E-06 |
| Styrene (TH) | 100425 | 2.40E-04 | 5.77E-03 | 4.81E-01 | NO. Based | on facility-wide po | otential. | 9.62E-07 |
| Tetrachlorodibenzo-p-dioxin, 2,3,7,8- (TH) | 1746016 | 5.25E-11 | 1.26E-09 | 1.05E-07 | NO. Based | on facility-wide po | otential. | 2.10E-13 |
| Toluene (TH) | 108883 | 7.29E-01 | 1.75E+01 | 1.46E+03 | NO. Based | on facility-wide po | otential. | 2.92E-03 |
| Trichloroethylene (TH) | 79016 | 0.00E+00 | 0.00E+00 | 0.00E+00 | NO. Based | on facility-wide po | otential. | 0.00E+00 |
| Vidono (TH) | 1000007 | 0.04E 00 | 4.455.00 | 4.045.00 | NO 0 1 | * *** | | |

1.45E+00

1.21E+02

NO. Based on facility-wide potential.

2.41E-04

Xylene (TH)

1330207

6.04E-02

POTENTIAL TAP PMISSIONS (NATURAL GAS)

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 INPUT SCREEN



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.

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.: | 1700016 |
| Permit No.: | 10682R00 |
| Facility City: | Burlington |
| Facility County: | Caswell |
| Spreadsheet Prepared by: | LLG |

| Γ | readsheet b | | 2. NO | | |
|---|-------------|--------------------|--------|-----------------------------------------|--|
| | Plant type: | Drum mix | | | |
| | Fuel type: | Natural gas-fired | | | |
| | 1/3/4/3/39 | ST STATES STATES | ////// | /////////////////////////////////////// | |
| | Controls: | Fabric fifter cont | rols ' | | |

| | Dryer heat input: | 80 | million Btu per hour |
|-----------|---------------------------|-----|----------------------|
| Plant max | imum production capacity: | 250 | tons per hour |
| | | | |

| ı | Asphalt Prop | erties | | |
|---|----------------------|--------|-----------|----------------------------------|
| ı | Asphalt temperature: | 325 | degrees F | (default value of 325 degrees F) |
| ı | Volatility loss (V): | -0.5 | % | (default value of -0.5 %) |

| Silo | wre | E vior |
|----------|-----|---------------|
| Filling? | "" | |

| 1 | ishing on te? | AE2 | 17 | |
|---------------------|------------------|----------------|-------------------|---|
| Crushing Capacity? | 65 | tons per hour | No. of crushers: | 1 |
| Hours of operation: | | hours per year | No. of screens: | 1 |
| 1 | | | No. of conveyors: | 4 |

| Asphalt Cement Heater | | <u> </u> |
|-----------------------|------|----------------------|
| AC heater heat input: | 2.3 | million Btu per hour |
| Fuel Sulfur Content: | 0.50 | % |
| Hours of operation: | 8760 | hours per vear |

(No.2 or diesel fuel oil -fired assumed) (default value is 0.5 %) (default is 8760 hours per year unless specified otherwise)

| Calculated Annual Production Limit: | 1,488,581 | tons per year | |
|-------------------------------------|-----------|---------------|--|
| Requested Annual Production Limit: | 500,000 | tons per year | |
| Requested Daily Production Limit: | | tons per day | |
| | | | |

(if none desired leave default value =8760*tph) (if none desired leave default value = 24*tph)

| Is this plant NSPS Subpart I affected? | YES | |
|-----------------------------------------------|-----------------|-------|
| Stack gas flow rate : | 68,145 | ACFM |
| Stack gas temperature : | 240 | oF |
| Stack % moisture: | 33 | % |
| Allowable emission rate under NSPS Subpart I: | 11.81 | lb/hr |
| Control efficiency required: | 99.831 | % |
| Does Method 5 data already exist?: | NO | |
| sist rojesino beninfeteto delition | 00.00 99.439 | |

| 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 | % |

ATTACHMENT E6

| Dryer Emissions Criteria Pollutants | | | • • | | | | | | | |
|----------------------------------------|---------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------|-------------------------------------|-------------------------------------------------------------------|------------|---------------|---------------------------------------------------|--------------------------------------------------------------------------------|
| | | | i . | | | | | | | · · · · · · · · · · · · · · · · · · · |
| Pollutant | Uncontrolled Emission Factor (lb/ton) | Controlled Emission Factor (lb/ton) | | emission rate /hr) | controlled emission rate (lb/hr) | Title V, Potential Emiss (no controls, 8760 hour operation) | | (tpy) (with o | ial Emissions, ontrols, 8760 ear operation) | Synthetic Minor, Potential Emissions (tp (with all operation restrictions) |
| Condensible PM (or PM ₁₀) | 0.0654 | 0.0194 | 16 | .35 | 4.85 | millionia | umm | innin | umm | |
| Filterable PM | 28 | 0.014 | | 100 | 3.5 | | HHH | HHHH | **** | |
| Filterable PM10 | 6.4 | 0.0039 | | 100 | 0.975 | HHHHHH | HHHH | HHHH | <i>HHHH</i> | |
| Total PM | 28 | 0.033 | 70 | 000 | 8.25 | 73.0 | | 3 | 3.1 | 8.3 |
| Total PM10 | 6.5 | 0.023 | 16 | 325 | 5.75 | 33.1 | | | 5.2 | 5.8 |
| SO2 | D.0001 | 0.0001 | 0. | 02 | . 0.02 | 0.10 | | 0. | 10 | 0.02 |
| co | 0.1300 | 0.130 | 32 | 2.5 | 32.5 | 142.4 | | 14 | 2.4 | 32.5 |
| NOx | 0.0260 | 0.026 | 6 | .5 | 6.5 | 28.5 | | 2 | 3.5 | 6.5 |
| voc | 0.0320 | 0.032 | | В | . 8 | 35.0 | | | 5.0 | 8.0 |
| HAPs, TOTAL | | 0.005 | | | 1.325 | 5.8 | • | 5 | .8 | 1.3 |
| Silo Filling plus Loa | d Out Emiss | sions, Crite | eria Poliutar | nts | er . | | | | ٠ | |
| | Emission Factor, | | | | | Title V, Potential Emiss | | | al Emissions, | Synthetic Minor, Potential Emissions (tp |
| Pollutant | combined (lb/ton) | | | | emission rate (lb/hr) | (no controls, 8760 hour operation) | s per year | | ours per year ation) | (with all operation restrictions) |
| Total PM | | 11111111 | 111111111 | MIIIII | 2.77E-01 | 1.2 | | | .2 | 0.3 |
| co | 2.53E-03 | | | TIIIIIXI | 6.32E-01 | 2,8 | | | .8 | 0.6 |
| voc | 1.61E-02 | | TITILLE | TITILIYI | 4.02E+00 | 17.6 | | | 7.6 | 4.0 |
| HAPs, TOTAL | 2.74E-04 | THILLI | THIIII | THIII W | 6.85E-02 | 0.3 | | 0 | .3 | 0.1 |
| Rap Crusher Emissi | nns | | | | | | | | | <u> </u> |
| Rap Orusilei Eillissi | Emission | | | | | | | | | T |
| | Factor, all sources | | | | | Title V., Potential Emiss (no controls, 8760 hour | | | ial Emissions, ours per year | Synthetic Minor, Potential Emissions (to |
| Pollutant | combined (ib/ton) | | | • | emission rate (lb/hr) | operation) | a pai yeai | | ation) | (with all operation restrictions) |
| Total PM | 0.0424 | ummi | mmm | <i>MIIIIII</i> | 2.76E+00 | 12.1 | | 12 | 2.1 | 2.8 |
| Total PM10 | 0.0155 | 7777777 | HHHH | XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX | 1.01E+00 | 4.4 | | | .4 | 1,0 |
| | | | | | | • | | • | | · |
| Asphalt Cement Hea | ter Emissio | ons | | | · | | | | | |
| | Uncontrolled Emission | | | | | Title V, Potential Emiss (no controls, 8760 hour | | | al Emissions, ours per year | Synthetic Minor, Potential Emissions (tp |
| Pollutant | Factor (lb/MMBtu) | | | | emission rate (lb/hr) | operation) | o por your | oper | ation) | (with all operation restrictions) |
| | 0.0235714 | | | | 5.42E-02 | 0.2 | | | .2 | 0.2 |
| Total PM10 | 0.0235714 | | | | 5.42E-02 | 0.2 | | | .2 | 0.2 |
| SO2 | 0.5071429 | | | | 1.17E+00 | 5.1 | | 5 | | 5.1 |
| CO | 0.0357143 | | | | 8.21E-02 | 0.4 | | | .4 | 0.4 |
| NOx | | HHHH | | | 3.29E-01 | 1,4 | | | .4 | 1.4 |
| , voc | 0.0024286 | | VIIIIIII | MIIIIII | 5.59E-03 | 0.0 | | 1 0 | .0 | 0,0 |
| Facility-wide Criteria | a Pollutant E | missions | Summary | | | - | | | | |
| | | | | | | Title V, Potential Emiss | ians (tpv) | PSD. Potenti | al Emissions, | |
| Pollutant | | | | | Controlled Emission Rate, lb/hr | (no controls, 8760 hour operation) | | (tpy) (8760 h | ours per year ation) | Synthetic Minor, Potential Emissions (tp: (with all operation restrictions) |
| Total PM | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | mm | anninininininininininininininininininin | iniiinii | 1.11E+01 | 86.5 | | 49 | 7 | 11,5 |
| Total PM10 | <i>HHHHH</i> | HHHH | <i>HHHH</i> | HHHH | 6.81E+00 | 38.9 | | | 1,0 | 7.3 |
| 802 | <i>(†††††††</i> | <i>HHHH</i> | <i>HHHH</i> | HHHH | 1.19E+00 | 5.2 | | | .2 | 5.1 |
| co | HHHH | 11111111 | <i>(1111111)</i> | HHHH | 3.32E+01 | 145.5 | | | 5.5 | 33,5 |
| NOx | Hillilli | HHHH | Millill | HHHH | 6.83E+00 | 29.9 | | | 3.9 | 7.9 |
| voc | | | Millill | XIIIIIX | 1.20E+01 | 52,7 | | 52 | | 12.0 |
| HAPs, TOTAL | | | HHHH | MIIIII | 1.39E+00 | 6.1. | | 6 | | 1.4 |
| Facility-wide Toxic | Air Pollutani | ts Summar | у | | | <u> </u> | • | | | |
| TAP | | CAS No. | Action | | TAP | | CAS No. | Action | | |
| Ace | taldehyde (TH) | 75070 | NOTE 1 | | | Mercury, vapor (TH) | 7439976 | NOTE 1 | NOTE 1: I | nclude TAP in TPER stipulation. |
| | Acrolein (TH) | 107028 | NOTE 1 | IIIIIIII | | Methyl ethyl ketone (TH) | 78933 | NOTE 1 | | Ert aupurauott. |
| Arsenic unlisted cmpds (comp | | | NOTE 3 | 11111111 | | Methylene chloride (TH) | 75092 | NOTE 1 | NOTE 2: In | nclude TAP in TPER stipulation |
| | Benzene (TH) | 71432 | NOTE 3 | IIIIIIII | | Nickel metal (TH) | 7440020 | NOTE 3 | | tion restrictions. |
| | o(a)pyrene (T) | 50328 | NOTE 1 | | Perchloroethylene (to | etrachioroethylene) (TH) | 127184 | NOTE 1 | | |
| Beryllium metal (u | | 7440417 | NOTE 1 | IIIIIII. | | Phenol (TH) | 108952 | NOTE 1 | | fodeling Required. See "Toxic |
| Cadmium metal (elemental u | | 7440439 | NOTE 2 | IIIIIIII. | Soluble Chromate Compou | | 7738945 | NOTE 1 | calculation | s" worksheet. |
| | n disulfide (TH) | 75150 | NOTE 1 | IIIIIIII | | Styrene (TH) | 100425 | NOTE 1 | | |
| | naldehyde (TH) | 50000 | NOTE 3 | | Tetrachlorodibenzo | o-p-dioxin, 2,3,7,8- (TH) | 1746016 | NOTE 1 | | |
| Hexachlorodibenzo-p-dioxin | | | NOTE 1 | | | Toluene (TH) | 108883 | NOTE 1 | | |
| | lexane, n- (TH) | 110543 | NOTE 1 | IIIIIIII. | | Trichloroethylene (TH) | 79016 | NOTE 1 | | |
| Hydro | gen Sulfide (T) | 7783064 | NOTE 1 | | | Xylene (TH) | 1330207 | NOTE 1 | | |
| | | | NOTE 1 | (1111111) | | | | | | |
| Manganese unlisted | compounds (1) chloroform (TH) | MNC-other 71556 | NOTE 1 | .11111111 | | | | | | |

Toxic Air Pollutant (TAP) emission rate calculations page

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

| | | | | | | <u> </u> | diver | | SIOFIE | . Bull | nopeol | dout | | total handling | Š | | | | | | | | |
|-------------------------------------------------|---------------|---------------------|---------------|-------------|-------------|----------|-----------------------------------------|-----------------------------|-----------------|---------------|-----------------|----------|----------------|---------------------------------------------|------------|------------|-----------------------|-----------------------------|----------------|---------------|----------------|--------------|------------|
| | | | | | | } | ⊬ | 1 | | | | C | | | | | | | Controlled | | | Confinding | |
| | emis | emissions emissions | sclons | | | | Controlled Friedrich Friedrich | Controlled Emission Boto | | Emission Rate | | | Emission Facio | Emission Rate Emission Factor Emission Rate | Controlled | Controlled | Controlled Controlled | Controlled Expenses Bate | will imfations | wd.imitations | Controlled | wLimilations | |
| | | | | | | T. | _ | | (actor (lb/lon) | (BAr.) | factor (Ib/Ibn) | (lb/hr) | (tp/pou) | (lb@nan) | 7 | (Inform) | (Index) | Althoraci | Emission Rate | | _ | ER greeter | Continents |
| | CAS No. dryer | | handling TPER | R Units | TPER | Units | | | | | | | | | | | (6) | (makes) | (lb/day) | | | han TPER? | |
| _ | | , yes | | 6.8 Duhr | | | | 0.00E+00 | | | | | | | 0.00€+00 | 0.00E+00 | D:00E+00 | 0.00E+00 | 0.00E+00 | 0.D0E+D0 | ₽ | | NOTE 1 |
| Ì | | se. | <u>.</u> | | | | _ | 0.00E+00 | | | | | | | 0,00E+00 | 0.00E+00 | 0.00E+D0 | 0.00E+00 | 0.00€+00 | 0.D0E+00 | 2 | | NOTE 1 |
| _} | | 706 | yes D | | | | 3.10E-03 | 7.75E-01 | 8,41E-05 | 2,10E-02 | 3.68E-08 | 9.15E-04 | 8.775E-0.5 | | 3.19E-03 | 7.975-01 | 1.81E+01 | 6,985+03 | 1.916+01 | 1.59E+03 | 74 488 | | KOTE 3 |
| _ | | . 2 | | _ | | | | | 0.00E+00 | 0.00E+00 | 4.02E-06 | 1.01E-03 | 4.02E-06 | 1.015-03 | 4.02E-06 | 1.01E-03 | 241E-02 | 8.81E+00 | 2.41E-02 | 2.01E+00 | ž | | NOTE 1 |
| ٦ | | ٤ | | 1 | 4 | 4 | | | 6.5BE-07 | 1,65E-04 | 3.04E-07 | 7.595-05 | 9.62E-07 | 1 | 9.62E-07 | 2.405-04 | 5.77E-03 | 2.11E+0D | 5.77E-03 | 4.81E-01 | ą. | | NOTE 1 |
| _ | | yes | | | • | | | 1,20E-02 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0,00E+00 | 0.00E+00 | Ĭ | 4.80E-05 | 1.20E-02 | 2.BBE-01 | 1.05E+02 | 2.88E-01 | 2.40E+01 | No No | ON | NOTE 1 |
| _ | | yes | | | | | _ | 0.00E+00 | 4.75E-06 | 1.19E-03 | 204E-06 | 5.095-04 | 6.79E-06 | | 6.79E-06 | 1.70E-03 | 4.07E-02 | 1.49E+01 | 4.07E-02 | 3,40E+00 | Š | S | NOTE 1 |
| _ | | yes. | | | | | | 3.75E-02 | 7.58E-06 | 1.89E-03 | 8.73E-06 | 2.185-03 | 1.63E-06 | | 1.86E-04 | 4.16E-02 | 9.98E-01 | 3.64E+02 | 9.98E-01 | 8,31E+01 | Q | S | NOTE 1 |
| _ | , | 983 | | | . | 4 | 2.00E-04 | 5.00E-02 | 2.44E-05 | 6.09E-03 | 1.71E-05 | 4.26E-03 | 4.14E-05 | | 2.41E-04 | 8.04E-02 | 1.45E+00 | 5.29E+02 | 1.45E+00 | 1.21E+02 | No | No | NOTE 1 |
| ↲ | | 2 | yes 0. | • | <u>8</u> | lb/year | | | 3,29E-08 | 8.23E-06 | 0.00E+00 | 0.00E+00 | 3,29E-08 | 8.23E-06 | 3.296-08 | 8.23E-06 | 1.97E-04 | 7.215-02 | 1.97E-04 | 1.65E-02 | No | No | NOTE 1 |
| _ | | sek | | _ | <u>/</u> /_ | | | 1.136-04 | | | | | | | 4.50E-07 | 1, 13E-04 | 2.70E-03 | 9.86E-01 | 2.70E-03 | 2.25E-01 | ટ | SK SK | NOTE 1 |
| _ | | yas | | | | [] | | 2.35E-01 | 1.22E-05 | 3.05E-03 | 6.24E-06 | 1.56E-03 | 1.B4E-05 | 6 4.61E-03 | 9.57E-04 | 2:38E-01 | 5.74E+00 | 2.10E+03 | 5.74E+00 | 4.78E+02 | No | Š | NOTE 1 |
| _ | _ | yes | | | //// | | | 1.93E-03 | | | | | | | 7,705-06 | 1.93E-03 | 4.62E-02 | 1.69E+01 | 4.62E-02 | 3.85€+00 | £ | ¥ | NOTE 1 |
| اِ | | se. | | | | | | 6.00E-05 | | | | | | | 2.40E-07 | 6.00E-05 | 1,44E-03 | 5.25E-01 | 1.44E-03 | 1.20E-01 | £ | 2 | NOTE 1 |
| 2 | | yes | e e | _ | | | 8.30E-05 | 1.585-02 | | | | | | | 6,30∈.05 | 1.58E-02 | 3.786-01 | 1.38E+02 | 3.78E-01 | 3.15E+01 | ×ec | Y es | NOTE 3 |
| L | | 2 | yes | 3.9 Ibiday | | | | | 1.95E-06 | 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 | 1,25€+00 | No | Š | NOTE 1 |
| - 1 | | yes | _ | | | | _ | 0.00E+00 | | | | | | | 0.00E+00 | 00+300'0 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | æ | ą | NOTE 1 |
| /* " · | 1 | 308 | | _ | | | _ | 1.406.94 | | | | | | 1 | 5,60E-07 | 1.40E-04 | 3.38E-03 | 1.23E+00 | 3,386-03 | 2.805-01 | Yes | Yes | NOTE 3 |
| ۵. | | 984 | | | Ź | | | 9.75=42 | 3.90E-08 | 8.75E-04 | 2.165-06 | 5.41E-04 | 90-390'9 | | 3,986-04 | 9.80E-02 | 2.38E+00 | 8.87E+02 | 2.38E+00 | 1.88E+02 | Yas | Yes | NOTE 3 |
| _ | | 906 | | • | | | | 2.45E-08 | 0.00E+00 | 0.00E+00 | 7.84E-09 | 1.96E-06 | 7.845-09 | | 1.76E-08 | 4.41E-D6 | 1.06E-04 | 3.86E-02 | 1.08E-04 | 8.82E-03 | 2 | S | NOTE 1 |
| _ | | Sec | | _ | | | | 1.30E-02 | 1,46E-06 | 3,656-04 | 1.465-06 | 3.65Е-04 | 2.92E-06 | 7.30E-04 | 5,47E-05 | 1.37E-02 | 3.28E-01 | 1.20E+02 | 3.28E-01 | 2.74€+01 | Νο | Š | NOTE 1 |
| Beryllium melal (unreacted) (TH) 74- | 7440417 | 596 | 2 : | 0.28 EAV | | | | 0.00E+00 | | | | | | | 0.00=+00 | 0.00E+00 | 0.005+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | N _o | 2 | NOTE 1 |
|) | | 98. | | O DOST BASE | | | A TUE OF | 1.03E-04 | | | | | | | 4.105-07 | 1.03E-04 | 2.48E-03 | 8.985-01 | 2.46E-03 | 2.05E-04 | , de | <u> </u> | NOTE 2 |
| * | i | 900 | | | | | | 000+000 | | | | | | | 0.000 | 0.000 | 0.005+00 | 0000 | 0.005+00 | 0.000 | 2 2 | 2 | NO IN |
| Perchioroethylene (tetrachloroethylene) (TH) 12 | 127184 | 9 | yes 13 | 13000 lb/yr | | | | | 0.005+00 | 0.005+00 | 3.20E-07 | 8.01E-05 | 3.20E-07 | 8.01E-05 | 3.20E-07 | 8.01E-05 | 1.92E-03 | 7.016-01 | 1.92E-03 | 1.80E-D1 | 2 | 1 | L L |
| | 79016 | Ou | | 4000 lb/yr | | | | | D:00E+00 | 0:00E+00 | D:00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.005+00 | 0.00E+00 | 0.000 | D.00E+00 | 0.00E+00 | 0.00E+00 | 2 | 2 | NOTE: |
| | | , sat | Se. | | | | 9.00E-05 | 2.25E-02 | 4.62E-06 | 1.16E-03 | 4.26E-06 | 1.07E-03 | 90-388F-06 | ı | 9.89E-05 | 2.47E-02 | 5.936-01 | 2.17E+02 | 5.93E-01 | 4.94E+01 | | | |
| = | | . 584 | 2 | | | | | 7.00E-03 | | | | | | | 2.B0E-05 | 7,00E-03 | 1.6BE-01 | 8,135+01 | 1.68E-01 | 1.40E+01 | | | |
| = | | yes yes | 2 | | | | | 4.75E-02 | | | | | | | 1.906-04 | 4.75E-02 | 1.14E+00 | 4.16E+02 | 1.14E+00 | 8.50E+01 | | | |
| Propionaldehyda (H) 12 | 123386 | . 88 | <u>∠</u> | | | | _ | 0.00E+00 | | | | | | | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | | | |
| - 6 | | 9 1 | 2 | | | | 0.00E+UD | 755.06 | | | | | | | 0.00=+00 | 0.000=+00 | 0.005+00 | 0.00E+00 | 0.00E+00 | 0000 | | | |
| . ~ | _ | SE | | | | | | 1.88.1 | 3.785-08 | 9746.00 | 7.49E-08 | 1876.06 | 1.138.0 | 282 | 3.30E-01 | 1.00E-02 | 2415-03 | 8.78E+01 | 2415-03 | 2015-01 | | | |
| _ | SBC-other) | | 2 | | | | | 4.50E-05 | | | | | | | 180F-07 | 4 50F.D6 | 1085-03 | 3 QUE.01 | + OBE-03 | 0000 | | | |
| _ | | Sed | 2 | | | | | 1.26E-03 | | | | | | | 5.05E-06 | 1.26E-03 | 3.03E-02 | 1.116+01 | 3.036-02 | 2.536+00 | | | |
| _ | _ | yes | 2 | | | | _ | 6.50E-06 | | | | | | | 2.60E-08 | 6.506-06 | 1.56E-04 | 5.89E-02 | 1.56E-04 | 1.30E-02 | | | |
| _ | | yes | <u>//</u> | | | | | 6.00E-02 | 4.83E-06 | 1.16E-03 | 1.16E-05 | 2.91E-03 | 1.63E-05 | 5 4.07E-03 | 2.58E-04 | 6.41E-02 | 1,54E+00 | 5.61E+02 | 1.54E+00 | 1.28E+02 | | | |
| _ | bx. | | <u>//</u> | | | | 6.205-07 | 1.55E.Q | | | | | | | 6.20E-07 | 1.558-04 | 3.72E-03 | 1.36E+00 | 3,72E-03 | 3.10E-01 | | | |
| _ | | | <u>//</u> | | | | | | 5.97E-07 | 1.49E-04 | 3.99E-07 | 9.9BE-05 | 9.96E-07 | 2.49E-04 | 9.96E-07 | 2.49E-04 | 5.98E-03 | 2.18E+00 | 5.98E-03 | Z 10-388-7 | | | |
| _ | | | <u>//</u> | | | | | | 0.00E+00 | 0.00E+00 | 4.57E-06 | 1.14E-03 | 4.57E-06 | 1.145-03 | 4.57E-06 | 1.14E-03 | 2.74E-02 | 1.00E+01 | 2.74E-02 | 2.28E+00 | | | |
| Ethyl Choride (Choridethale) (H) | 79003 | | <u>//</u> | | | | | | 0.00E+00 | 0.000 | 8.73E-09 | 2.186-06 | 8.736-09 | 2.185-06 | 8.73E-09 | 2.18E-06 | 5.24E-05 | 1.91E-02 | 5.24E-05 | 4.37E-03 | | | |
| | | 2 2 | <u>//</u> | | | | | | 5.00E+00 | 745-03 | 3335.06 | 1.56E-04 | 1.035.05 | 1.565-04 | 6.24E-07 | 1.366.04 | 3,74E-03 | 1.37E+00 | 3.746-03 | 3.12E-01 | | | |
| | l | | 1 | | | 1 | 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | 1 875 04 | 200 | 2000 | 0.025.00 | 1.03E-00 | ł | CD-150.1 | 2.37.5.03 | 0,100-02 | 2.235+01 | 6.16E-412 | 3 | | | |
| | | | | | | 1 | 70. | 20.00 | | 1,000 | COOF | Z.11E=0Z | 4-14E-D | 1 | 5.575-05 | 1.350+00 | 3.34E+U1 | 1.225.14 | 3.34E+U1 | 2.78E+03 | | | |

POTENTIAL TAN EMISSIONS (NO. 4/10 FUEL OIL)

ASPHALT EMISSIONS CALCULATOR REVISION G 08/30/2019 INPUT SCREEN



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.: | 1700016 |
| Permit No.: | 10682R00 |
| Facility City: | Burlington |
| Facility County: | Caswell |
| Spreadsheet Prepared by: | LLG |

| | readsheet b | | 2. NO | | |
|---|--------------|---------------------|--------------------|------|-----------------------|
| | Plant type: | Drum mix | | | |
| | Fuel type: { | Waste, No.4 or No. | s 6 fuel oil-fired | | |
| | Fuel Sulf | ur Content; | 0.50 | % | (default value is 0.5 |
| - | Controls: | Fabric filter contr | rois | ā. ā | · |

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

| Asphalt Prop | erties | | _ |
|----------------------|--------|-----------|----------------------------------|
| Asphalt temperature: | 325 | degrees F | (default value of 325 degrees F) |
| Volatility loss (V): | -0.5 | % | (default value of -0.5 %) |

| Silo | | 200 |
|----------|-----|-----|
| Filling? | YES | |

| | ushing on te? | YES | KZ . | |
|---------------------|---------------|----------------|-------------------|---|
| Crushing Capacity? | 65 | tons per hour | No. of crushers: | 1 |
| Hours of operation: | 8760 | hours per year | No. of screens: | 1 |
| · | | - | No. of conveyors: | 4 |

| 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: | 500,000 | 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 : | 68,145 | ACFM |
| Stack gas temperature : | 240 | oF . |
| Stack % moisture: | 33 | % |
| Allowable emission rate under NSPS Subpart I: | 11.81 | lb/hr |
| Control efficiency required: | 99.831 | <u></u> % |
| Does Method 5 data already exist?: | NO 202 | 2898411111111111111111111111111111111111 |
| व्यक्त १५६ व्यक्त प्रवासकार भवता है। | 1100.00 | |
| Allowable emission rate under 2 D .0506: | 55.39 | lb/hr |

| 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 | % | |
| | | | |

ATTACHMENT ET

| Dryer Emissions Criteria Pollutants | | | | | | | , | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| _ | | | | | | | | <u> </u> |
| | Uncontrolled Emission Factor (lb/ton) | Controlled Emission Factor (lb/ton) | uncontrolled (lb/l | | 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) | (with all operation restrictions) |
| Condensible PM (or PM ₁₀) | 0.0654 | 0.0194 | 16. | 35 | 4.85 | | mmmmmx | |
| Filterable PM | 28 | 0.014 | 700 | | 3.5 | | XHHHHHX | |
| Filterable PM10 | 6.4 | 0.0039 | | | | | | |
| Total PM | 28 | 0.033 | 700 | 00 | 8.25 | 73.0 | 36.1 | 8.3 |
| Total PM10 | 6.5 | 0.023 | 162 | 25 | 5.75 | 33.1 | 25.2 | 5.8 |
| . SO2 | 0.0837 | 0.0837 | | | 91.69 | 20.93 | | |
| · co | 0.1300 | 0.130 | 32 | | 32.5 | 142.4 | 142.4 | 32,5 |
| NOx | 0.0550 | 0.055 | 13. | | 13.75 | 60.2 | 60.2 | 13.8 |
| VOC HAPs, TOTAL | 0.0320 | 0.032 0.010 | | | 8 2.5 | 35.0 11.0 | 35.0 11.0 | 8.0 2.5 |
| Silo Filling plus Load | d Out Emiss | sions, Crite | eria Poliutan | ts | | | | |
| | Emission | • | | | | TH- V 6-1-16-17-16-16-16-16-16-16-16-16-16-16-16-16-16- | | |
| Pollutant | 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 yea operation) | |
| | 1.11E-03 | anninini | dillilli | MIIIII | 2.77E-01 | 1.2 | 1.2 | 0.3 |
| _ | 2.53E-03 | | HHHH | HHHHK | 6.32E-01 | 2.8 | 2.8 | 0.6 |
| _ | 1.61E-02 | | | MIIIII | 4.02E+00 | 17.6 | 17.6 | 4.0 |
| | 2.74E-04 | | | XIIIIIX | 6.85E-02 | 0.3 | 0.3 | 0.1 |
| Rap Crusher Emission | nns | | | | | | | |
| | | | | | | | | |
| | Emission Factor, all sources combined | | | | emission rate (lb/hr) | Title V, Potential Emissions (tpy) (no controls, 8760 hours per year | PSD, Potential Emissions (tpy) (8760 hours per yea | Synthetic Minor, Potential Emissions (t (with all operation restrictions) |
| . Pollutant | (lb/ton) | | | | | operation) | operation) | |
| Total PM | 0.0424 | HHHH | 444444 | HHHH | 2.76E+00 | 12.1 | 12.1 | 2.8 |
| Total PM10 | 0.0155 | | <u>illillilli</u> | MIIIIIIN | 1.01E+00 | 4.4 | 4.4 | 1.0 |
| | Uncontrolled Emission Factor | | | | 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 (to (with all operation restrictions) |
| Pollutant | (lb/MMBtu) | | | | | | | |
| | 0.0235714 | | | | 5.42E-02 | 0.2 | 0.2 | 0.2 |
| | 0.0235714 | | | | 5.42E-02 | 0.2 0.2 | | 0.2 |
| | 0.5071429 | | HHHH | | 1.17E+00 | | | 5.1 |
| <u> </u> | 0.0357143 | HHHH | HHHH | HHHH | 8.21E-02 3.29E-01 | 0.4 | 0.4 | 0.4 |
| _ | 0.0024286 | | HHHH | | 5.59E-03 | 0.0 | 0.0 | 0.0 |
| Facility-wide Criteria | Pollutant E | missions | Summary | | | | | |
| | | | | | | Title V, Patential Emissions (tpy) | PSD, Potential Emissions | |
| Pollutant | | | ÷ | | Controlled Emission Rate, lb/hr | (no controls, 8760 hours per year | (tpy) (8760 hours per year | Synthetic Minor, Potential Emissions (i (with all operation restrictions) |
| Total PM | | | | | | operation) | operation) | |
| Total PM10 | | | | | 1.11E+01 | 86.5 | 49.7 | 11.5 |
| | | | | | 6.81E+00 | 86.5 38.9 | 49.7 31.0 | 7.3 |
| 502 | | | | | 6.81E+00 2.21E+01 | 86.5 38.9 96.8 | 49.7 31.0 96.8 | 7.3 26.0 |
| co | | | | | 6.81E+00 2.21E+01 3.32E+01 | 86.5 38.9 96.8 145.5 | 49.7 31.0 96.8 145.5 | 7.3 26.0 33.5 |
| NOX | | | | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 | 86.5 38.9 96.8 145.5 61.7 | 49.7 31.0 96.8 145.5 61.7 | 7.3 26.0 33.5 15.2 |
| CO NOX VOC | | | | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 | 86.5 38.9 96.8 145.5 61.7 52.7 | 49.7 31.0 96.8 145.5 61.7 52.7 | 7.3 26.0 33.5 15.2 12.0 |
| CO NOX VOC HAPs, TOTAL | | | | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 | 86.5 38.9 96.8 145.5 61.7 | 49.7 31.0 96.8 145.5 61.7 | 7.3 26.0 33.5 15.2 |
| CO NOX VOC HAPs, TOTAL Facility-wide Toxic A | air Pollutani | | | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 | 49.7 31.0 96.8 145.5 61.7 52.7 11.3 | 7.3 26.0 33.5 15.2 12.0 |
| CO NOX VOC HAPs, TOTAL Facility-wide Toxic A TAP | | CAS No. | Action | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 | 49.7 31.0 96.8 145.5 61.7 52.7 11.3 | 7.3 26.0 33.5 15.2 12.0 2.6 |
| CO NOX VOC HAPs, TOTAL Facility-wide Toxic A TAP | aldehyde (TH) Acrolein (TH) | | | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 | 49.7 31.0 96.8 145.5 61.7 52.7 11.3 | 7.3 26.0 33.5 15.2 12.0 2.6 |
| CO NOX VOC HAPs, TOTAL Facility-wide Toxic A TAP | aldehyde (TH) Acrolein (TH) | CAS No. | Action NOTE 1 | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439976 | 49.7 31.0 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 | 7.3 26.0 33.5 15.2 12.0 2.6 |
| CO NOX VOC HAPs, TOTAL Facility-wide Toxic A TAP Aceta Arsenic unlisted cmpds (comp. | aldehyde (TH) Acrolein (TH) | CAS No. 75070 107028 | Action NOTE 1 NOTE 1 | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) Methyl lethyl ketone (TH) 78933 | 49.7 31.0 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1: | 7.3 26.0 33.5 15.2 12.0 2.6 Include TAP in TPER stipulation |
| CO NOX VOC HAPs, TOTAL Facility-wide Toxic A TAP Acet Arsenic unlisted empds (comp. | aldehyde (TH) Acrolein (TH) of ASC) (TH) | CAS No. 75070 107028 ASC-other | Action NOTE 1 NOTE 1 NOTE 3 | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) Methyl ethyl ketone (TH) Methylene chloride (TH) 75092 | 49.7 31.0 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1: | 7.3 26.0 33.5 15.2 12.0 2.6 |
| CO NOX VOC HAPs, TOTAL Facility-wide Toxic A TAP Acet Arsenic unlisted empds (comp. | aldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) i(a)pyrene (T) | CAS No. 75070 107028 ASC-other 71432 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439976 78933 Methylene chloride (TH) 76992 Nickel metal (TH) 7440020 | 49.7 31.0 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 2 with open | 7.3 26.0 33.5 15.2 12.0 2.6 Include TAP in TPER stipulation |
| CO NOX VOC HAPs, TOTAL Facility-wide Toxic A TAP Acett Arsenic unlisted cmpds (comp. Benzo | aldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) of apyrene (T) areacted) (TH) | CAS No. 75070 107028 ASC-other 71432 50328 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439976 78933 Methylene chloride (TH) 75092 Nickel metal (TH) 7440020 etrachloroethylene) (TH) 127184 Phenol (TH) 108952 | 49.7 31.0 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 2: with open NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 | 7.3 26.0 33.5 15.2 12.0 2.6 Include TAP in TPER stipulation ation restrictions. |
| Facility-wide Toxic A TAP Acetr Arsenic unlisted cmpds (comp. Benzo Beryllium metal (ur | aldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) of apyrene (T) areacted) (TH) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439976 78933 Methylene chloride (TH) 75092 Nickel metal (TH) 7440020 etrachloroethylene) (TH) 127184 Phenol (TH) 108952 | 49.7 31.0 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 2: with open NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 | 7.3 26.0 33.5 15.2 12.0 2.6 Include TAP in TPER stipulation. |
| Facility-wide Toxic A TAP Acete Arsenic unlisted cmpds (comp. Benzo Beryllium metal (ur. Cadmium metal (elemental ur. Carbon Formic | aldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) ((a)pyrene (T) reacted) (TH) reacted) (TH) disulfide (TH) aldehyde (TH) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 7440439 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 2 NOTE 1 NOTE 3 | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP Perchloroethylene (tx | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) Methylene chloride (TH) Nickel metal (TH) Phenol (TH) Phenol (TH) 108952 unds as Chrome VI (TH) 7738945 | 49.7 31.0 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 | 7.3 26.0 33.5 15.2 12.0 2.6 Include TAP in TPER stipulation include TAP in TPER stipulation ation restrictions. Modeling Required. See "Toxic |
| Facility-wide Toxic A TAP Acete Arsenic unlisted cmpds (comp. Benzo Beryllium metal (ur Cadmium metal (elemental ur Carbon Formet Hexachlorodibenzo-p-dioxin 1, | aldehyde (TH) Acrolein (TH) of ASC) (TH) Benzene (TH) nreacted) (TH) rreacted) (TH) disulfide (TH) aldehyde (TH) 2,3,6,7,8 (TH) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 7440439 75150 50000 57653857 | Action NOTE 1 NOTE 1 NOTE 3 NOTE 1 NOTE 1 NOTE 2 NOTE 1 NOTE 3 NOTE 1 | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP Perchloroethylene (tx | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) 7439976 Methyl ethyl ketone (TH) 76993 Methylene chloride (TH) 7440020 Nickel metal (TH) 7440020 etrachloroethylene) (TH) 108952 rinds as Chrome VI (TH) 7738945 Styrene (TH) 100425p-dioxin, 2,3,7,8- (TH) 1746016 Toluene (TH) 108883 | Action NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 | 7.3 26.0 33.5 15.2 12.0 2.6 Include TAP in TPER stipulation. |
| Facility-wide Toxic A TAP Acete Arsenic unlisted cmpds (comp. Benzo Beryllium metal (ur Cadmium metal (elemental ur Carbon Formic Hexachlorodibenzo-p-dioxin 1. | aldehyde (TH) Acrolein (TH) Acrolein (TH) Of ASC) (TH) Benzene (TH) O(a)pyrene (T) reacted) (TH) reacted) (TH) disulfide (TH) disulfide (TH) 2,3,6,7,8 (TH) exane, n- (TH) | CAS No. 75070 107028 ASC-other 71432 50328 7440417 7440439 75150 50000 57653857 110543 | Action NOTE 1 NOTE 3 NOTE 3 NOTE 3 NOTE 1 NOTE 1 NOTE 2 NOTE 1 NOTE 1 NOTE 1 NOTE 1 NOTE 1 | | 6.81E+00 2.21E+01 3.32E+01 1.41E+01 1.20E+01 2.57E+00 TAP Perchloroethylene (tx | 86.5 38.9 96.8 145.5 61.7 52.7 11.3 CAS No. Mercury, vapor (TH) Methyl etdone (TH) Nickel metal (TH) Phenol (TH) 108952 strachloroethylene) (TH) Toluena (TH) Toluena (TH) Toluena (TH) Toluena (TH) Toluena (TH) Tolena (TH) Tol | A9.7 31.0 96.8 145.5 61.7 52.7 11.3 Action NOTE 3 NOTE 1 NOTE 1 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 3 NOTE 1 NOTE 1 | 7.3 26.0 33.5 15.2 12.0 2.6 Include TAP in TPER stipulation. |
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Foxic Air Pollutant (TAP) emission rate calculations page

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

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| | Successions | ns emissions | 49 | | | Emission | _ | ate Emission | Cmission Kere | ente Emission | | Emission Fac | Emission Kale Emission Factor Emission Kate | | Emission Rate | ą | Emission Rate | well mitalions | _ | | willmianons | Comments |
| Politiant CAS No | | handling | TPER | Unile | TPER Units | Factor (Ibilion) | (Ipyponi) | | | | | | | Factor (lb/lon) | (Iphour) | (tp/day) | (lb/year) | (lb/day) | (lb/year) than TPER? | | from TPER? | |
| Ĺ | SEK. | 2 | 6.8 | l | | 1.30E-03 | ł | | | | | | | 1,30E-03 | 3.25E-01 | 7.80E+00 | 2.85E+03 | 7.80E+00 | 5.50E+02 | 2 | | NOTE 1 |
| 107028 T. Acrolein (T.H.) 107028 | 28 yes | 2 | 0.02 | | | 2.80E-05 | | 4 | | | | | | 2.60E-05 | 6.50E-03 | 1.56E-01 | 5.89E+01 | 1.56E-01 | 1.30E+01 | Z ₽ | | NOTE 1 |
| _ | - | | 0.04 | | | 3.105.63 | 7.75E-01 | 4 | | _ | | 90°3511'8 | 50 | 3.18E-03 | 7.87E-01 | 1.91 =+01 | 6.98E+03 | 1.91E+01 | 1.59E+03 | <i>//</i> | | NOTE 3 |
| | | | 0.24 | | | | | 0.000 | | _ | | 4.02E-08 | | 4,02E-06 | 1.01E-03 | 2.41E-02 | 8.876+00 | 2.41E-02 | 2.01E+00 | <u>2</u> | | NOTE 1 |
| | | | 7 | 4 | 1 | 4 | | T. | | | , | 8.62E-U7 | 2.40E-04 | 9.62E-07 | 2.40E-D4 | 5.77E-03 | 2.11E+00 | 5.77E-03 | 4.81E-01 | <u>د</u> و | | NOTE 1 |
| | | | 4 | | _ | | 1.205-02 | _ | | _ | _ | 0.005+00 | _ | 4.80E-05 | 1.20E-02 | 2.88E-01 | 1.05E+02 | 2.886-01 | 2.405+01 | ₽: | £: | NOTE THE |
| Matry etty (H1) and y etty Kellons (H1) | | | 7 | L . | | ay 2,000-45 | anne di | 4.735-16 | 1.196-43 | | | 6.785-00 | | 2.68E-05 | 6.70=03 | 1.61E-01 | 5.87E+01 | 1.61E-01 | 1.34E+D1 | 2 : | 9 | NOTE 1 |
| _ | 2 6 | 2 2 | 4.6 | | Sy code | | 5.00E-02 | - (4 | | 1.715-05 | 4.26E-03 | 4.14E-05 | -05 4.0/E-03 | 2416-04 | 6.045-02 | 1.45E+00 | 5.29E+02 | 1.45€+00 | 1.216+03 | 2 2 | 2 2 | 200 |
| L | | | 0.39 | | L | $\mathbf{\nu}$ | | | | ┝ | Ī | 3.2BE-08 | | 3.29E-08 | 8.23E-06 | 1.97E-04 | 7.21E-02 | 1.97E-04 | 1.65E-02 | æ | S S | NOTE 1 |
| Soluble Chromate compounds as Chrome (VI) (TH) SOLCRE | _ | | 0.013 | biday N | | 4.506-07 | 1.136-04 | μ | И | H | | | | 4.50E-07 | 1.13E-D4 | 2.70E-03 | 9.86E-01 | 2.70E-03 | 2.25E-01 | ş | ę | NOTE 1 |
| Haxane, n- (TH) 110543 | | 884 | S | Dyday | | 8.38E-04 | 2.35E-01 | 1.22E-05 | 5 3.05E-03 | 6.24E-06 | 1.56E-03 | 1.84E-05 | -05 4.61E-03 | 9.57E-04 | 2,395-01 | 5.74E+00 | 2.10E+03 | 5.74E+00 | 4.78E+02 | ā | 2 | NOTE 1 |
| 2 | | | 0.63 | | | 2,705-06 | 1.93E-03 | | | | | | | 7.70E-06 | 1.93E-03 | 4.62E-02 | 1.69E+01 | 4.62E-02 | 3.856+00 | ON | Š | NOTE 1 |
| ١. | | | 0.043 | | | 260E-08 | 6.50E-04 | | | | | | | 2.60E-06 | 6.50E-04 | 1.56E-02 | 5.69E+00 | 1.58E-02 | 1.30E+00 | Yes: | Yes | NOTE 3 |
| 7 | _ | | E.T. | | | | 1.585-02 | 4 | | 4 | | | | 6.30E-05 | 1.58E-02 | 3.78E-01 | 1.38E+02 | 3.78E-04 | 3.15E+01 | Ke) | 702 | NOTE 3 |
| . 1 | | 88 | 3.9 | 7 | | | | | 4.87E-04 | 5.41E-07 | 1,355-04 | 249E-08 | 6.23E-04 | 2.49E-06 | 8.236-04 | 1,49E-02 | 5.45E+00 | 1.49E-02 | 1.25E+00 | Š | £ | NOTE 1 |
| Tetrachiorodibenzo-p-dioxin, 2,3,7,8, (TH). 1746016 | 16 yes | 2 : | 0.0002 | ZZ | | 2.10E-13 | 5.25E-11 | | | | | | | 2.10E-13 | 5.25E-11 | 1.26E-09 | 4.60E-07 | 1.26E-09 | 1.05E-07 | 운 , | 운 ; | NOTE 1 |
| | | | 9 4 | | | | 1.455.04 | | | | | | | 20 UNIO R | 1.400.04 | 3.455-03 | 1.235400 | 3.365-03 | Z.BUE-01 | # ; | Yes | NOTE 3 |
| | | | | 1 | | 0 300 | 2 450.08 | ľ | ľ | + | l | 7 64 8 | • | 2017 | 4445 06 | 1 000 PA | 2065 00 | 4.000 | 201100 | į . | ž : | |
| | | | 1 - | ZZ Melona | | 7.48.5 | 1305.02 | 1 | ı | ╀ | ľ | 20.2000 | ı | 1.10E-06 | 275.00 | 3 305.01 | 3.90E-02 | 1.00m OF | 0.02E-03 | 2 1 | 2 1 | 2 |
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| ,,,, | _ | | 0.37 | | | 1 tole 5 | 1.035-04 | | | | | | | 4.10E-07 | 1,035-04 | 2.46E-03 | B.98E-01 | 2.46E-03 | 2.05F-01 | Š | 2 | Z E |
| Hexachlorodibanzo-p-dioxin 1,2,3,6,7,8 (TH) 57653857 | 22 | | 0.0051 | | | 1.305-12 | 3.255-10 | | | | | | | 1.30E-12 | 3.25E-10 | 7.80E-09 | 2.85E-06 | 7.80E-08 | 6.505-07 | 2 | £ | 1 E |
| 2 | | | 0.16 | | | 2.105-04 | 5.25E-02 | 4 | // | 4 | | | | 2.10E-04 | 5.25E-02 | 1.26E+D0 | 4.60E+02 | 1.26E+00 | 1.05E+02 | ş | | NOTE 1 |
| | Z | | 13000 | | | | | 0.000 + 0.00 | ı | 4 | ١ | 3.205-07 | | 3.205-07 | 8.01E-06 | 1.92E-03 | 7,01E-01 | 1.92E-03 | 1,605-01 | £ | No. | NOTE 1 |
| | | yes | 4000 | - Add | | | | ┪ | ı | 4 | | D.00E+00 | ١ | 0.00E+00 | 0.00⊆+00 | 0.00E+00 | 0.00E+00 | D.00E+00 | 0.00E+00 | 2 | No | NOTE 1 |
| | | | | | | 6.50E-04 | 1.635-01 | 4.62E-06 | 1.16E-03 | 4.2BE-06 | 1.07E-03 | 8.8BE-06 | -06 2.22E-03 | 8.59E-04 | 1.65E-01 | 3.95E+00 | 1,44E+03 | 3.95E+00 | 3.29E+02 | | | |
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| | | | | | | 130.00 | 3.25E-02 | | | | | | | 1305-04 | 3.255.07 | 7 805.01 | 5 BEC+02 | 2,405+00 | 20 E004-04 | | | |
| _ | | | | | | 1.805-04 | 4.00E-02 | | | | | | | 160E-04 | 4.00E-02 | 9.60E-01 | 3.50E+02 | 9.60E-01 | 8 00 8 | | | |
| _ | | | | | | 3.50€-07 | 8.75E-05 | 4 | | | | | | 3.50E-07 | 8.75E-05 | 2.10E-03 | 7.67E-D1 | 2.10E-03 | 1.75E-01 | | | |
| _ | 19. 3.65 | | | | | 4.00E-05 | 1.005-02 | 3.78E-09 | 9 8.44E-06 | 7.49E-08 | 1.87E-05 | 1.13E- | 07 2.62E-05 | 4.01E-05 | 1.00E-02 | 241E-01 | B.78E+01 | 2.41E-01 | 2.01E+01 | | | |
| Antimony unlisted compounds (H) SBC-other | her yes | 2 1 | | | | 1.806-07 | 4.506-05 | | | | | | | 1.80E-07 | 4,50E-05 | 1.08E-03 | 3.945-01 | 1.08E-03 | 8.00E-02 | | | |
| | | | | | | | 6.505-06 | | | | | | | 3.03E-0b | 20E-02 | 3.035-02 | 1,115+01 | 3.035-02 | 2.53E+00 | | | |
| | | | | | | 2.40E-04 | 6,00E-02 | 4.63E-06 | 1.16E-03 | 1,16E-05 | 2916-03 | 1635-05 | 4.07E-03 | 2.56E-04 | 6.416-02 | 154F+00 | 5.64F+02 | 1540 | 1.28E+02 | | | |
| Lead unlisted compounds (H) PBC-other | | | | | | 1,505-05 | 3.75E-03 | \mathbf{Z} | P | K | | | Ł | 1.505-05 | 3.75E-03 | 9.00E-02 | 3.29E+01 | 9 00E-02 | 7 50F±M | | | |
| Methy branide (H) 74839 | | 884 | 2 | | | | | 5.97E-07 | 1488-4 | 3.93E-07 | 9.98E-05 | 9.96E-D7 | 2.49F-DK | 8.96E-07 | 2.49E-04 | 5.98F-03 | 2 18F+00 | 5 985-03 | 4 98F 01 | | | |
| | | | | | | | | 0.00E+00 | - | _ | | 4.57E-06 | | 4.57E-08 | 1.14E-03 | 2.74E-02 | 1.00E+01 | 2.74E-02 | 2.29E+D0 | | | |
| _ | | 8 | | | | | | 0.00E+00 | _ | _ | | 8.73E-09 | N | 8.735-09 | 2.18E-D6 | 5.24E-05 | 1.91E-02 | 5.24E-05 | 4.37E-03 | | | |
| Methyl chonde (H) 74873 Xydore (H) 65478 | 2 8 | | | | | | | 0.005+00 | 0 0.00E+00 | 6.24E-07 | 1,586,04 | 6.246-07 | 1.566-04 | 6.24E-07 | 1.56E-04 | 3.74E-03 | 1.37E+D0 | 3.74E-03 | 3.125-01 | | | |
| ı | l | l | | | | | | 0.935-0 | ı | + | ľ | 1,035-05 | į | 00-00 | 2.5/E-US | 6.10E-02 | 2.25E+01 | 6.16E-02 | 81 | | | |
| 1000 600 | | | | | | 70-100 | S.doc.toc. | 1,01 | ı | ┨ | 5.11E-02 | 77.7 | ı | 1.035-412 | Z.3/E+00 | D.10E+U1 | 2.25=+1/4 | 5, T0E+U1 | 5.145+03 | | | |

FUEL OIL COMBUSTION EMISSIONS CALCULATOR REVISION G 11/5/2012 - INPUT SCREEN

The amission source / facility data on the "INPUT" tab/screen. The air emission results and summar

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: | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| COMPANY NAME: | Carolina Sunrock, LLC |
| FACILITY ID NUMBER; | 1700016 |
| PERMIT NUMBER | 10682R00 |
| FACILITY CITY: | Burlington |
| FACILITY COUNTY: | Caswell |
| SPREADSHEET PREPARED BY: | LLG |
| | |
| EMISSION SOURCE DESCRIPTION: | No. 2 dil-fired Boiler |
| EMISSION SOURCE ID NO.: | HMA-H1 |
| LATEST CONSTRUCTION/MODIFICATION DATE: | 2020 |
| SELECT THE TYPE OF BOILER FROM THE LISTS BELOW: | 28 |
| Boilers=>100 mmBtu/hr | Boilers=>100 mmBtu/hr (cont'd) |
| 1 = No. 6 oil-fired, normal firing (U) 2 = No. 6 oil-fired, normal firing (I) | 17 ≈ No. 2 oil-fired (C) |
| 3 = No. 6 oil-fired, normal firing (C) | 18 = No. 2 oil-fired, LNB/FGR (U) 19 = No. 2 oil-fired, LNB/FGR (I) |
| 4 = No. 6 oil-fired, normal firing, low Nox burner (U) 5 = No. 6 oil-fired, normal firing, low Nox burner (I) | 20 = No. 2 oil-fired, LNB/FGR (C) |
| 6 = No. 6 oil-fired, normal firing, low Nox burner (C) | 21 = Vertical fired utility boiler |
| 7 = No. 6 oil-fired, tangential firing (U) 8 = No. 6 oil fired, tangential firing, low Nox burner (U) | Small Boilers <100 mmBtu/hr |
| 9 = No. 5 oil-fired, normal firing (U) | 22 = No. 6 cil-fired (I) |
| 10 = No. 5 oil-fired, normal firing (I) 11 ≈ No. 5 oil-fired, tangential firing (U) | 23 = No. 6 cil-fired (C) 24 = No. 5 cil-fired (C) |
| 12 = No. 4 oil-fired, normal firing (U) | 25 = No. 4 oil-fired (C) |
| 13 = No. 4 ail-fired, normal firing (I) 14 = No. 4 ail-fired, tangential firing (U) | 26 = No. 2 oil-fired (I) 27 = No. 2 oil-fired (C) |
| 15 = No. 2 oil-fired (U) | |
| 16 = No. 2 all-fired (I) | 28 = Residential Furnace |
| Note: The emission factors for fuel oil-fired boilers depend on the boiler size and application type | be. In the listing of boiler types, the following notation is used: U = Utility boilers |
| (producing steam for the generation of electricity), I = Industrial bollers (generating steam or hollor institutional (used for space heating of commercial or institutional facilities) and residential (fur | t water for process heat, electricity generation, or space heat), C = Commercial rnaces used for space heating purposes). Please be sure to select the proper |
| boiler from the lists above. | |
| | N. A. C. |
| EMISSION SOURCE INPUT DATA | NO-2 FUEL OL USAGE, |
| MAXIMUM HEAT INPUT (MILLION BTU PER HOUR): | MMBTUHR LIM TEN TO 60,000 AL 12 |
| ACTUAL ANNUAL FUEL USAGE (GALLONS PER YEAR): | |
| ANTONE HOLL SOAGE (GALLONS PER TEAR). | 60,000.0 GALYR |
| MAXIMUM ANNUAL FUEL USAGE (GALLONS PER YEAR) | 80,000.0 GALYR TO LEEP BENZEVE |
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| MAXIMUM ANNUAL FUEL USAGE (GALLONS PER YEAR) MAXIMUM FUEL SULFUR CONTENT (%): FUEL HEATING VALUE FUEL HEATING VALUE (BTU/GAL): DEFAULT WILL APPEAR AS FOLLOWS (not used for Greenhouse Gas calcs - 150,000 BTU/GAL FOR No. 6, 5, and 4 FUEL OIL 140,000 BTU/GAL ALL OTHERS (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL AN IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C - www.eps.goviclimatechange/emissions/gingrulemaking.html NOTE: EF is "Emission Factor" SINCE TIER 3 IS NOT BEING USED, FUEL CARBON CONTENT WILL NOT BE USED SELECT FUEL TYPE HIGH HEAT VALUE (HHV) FOR GHGs FOR TIER 1 and TIER 3, the FUEL HEATING VALUE entered above is overriden FOR TIER 1 and TIER 3, the FUEL HEATING VALUE entered above is overriden | 75.095.7 0.50 %- (TYPEOVER IF NECESSARY - DEFAULT VALUE = 2.1 FOR RESIDUAL FUEL OIL OR 0.5 FOR STILLATE RUEL OIL 140.000 BTU/GAL See below for GHG defaults): PLOCATION OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF THE USE OF |
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Distillate Fuel Oil No. 2 DEFAULT HHV OF 0.138

FUEL OIL COMBUSTION EMISSIONS CALCULATOR REVISION G 11/5/2012 - 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 "QUTPUT" 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 ornissions that may be contained herein.

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|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------|---------|-----------|
| COMPANY: | Carolina Sunrock, LLC | MAX HEAT INPUT: | 1.20 | MMBTU/HR |
| FACILITY ID NO.: | 1700016 | FUEL HEAT VALUE: | 140,000 | BTU/GAL |
| PERMIT NUMBER: | 10682R00 | HHV for GHG CALCULATIONS: | 0.138 | mm BTU/GA |
| FACILITY CITY: | Burlington | ACTUAL ANNUAL FUEL USAGE: | 60,000 | GAL/YR |
| FACILITY COUNTY; | Caswell | MAXIMUM ANNUAL FUEL USAGE: | 75,086 | GAL/YR |
| USER NAME: | LLG | MAXIMUM SULFUR CONTENT: | 0.5 | % |
| EMISSION SOURCE DESCRIPTION: | No. 2 oil-fired Boiler | RABERTO DE TUDOS DESENTADOS RE | | |
| EMISSION SOURCE ID NO.: | HMA-H1 | MAX. FUEL USAGE: | 60,000 | GAL/YR |
| | | MAX. SULFUR CONTENT: | 0.5 | % |
| <u>iri</u> ghally albudg Guller I. | <u>un rejigit filik i dule Salar de en un ere jare in Meres</u> | | | · |
| <u> </u> | NONE/OTHER | PM | 0 | |
| | NONE/OTHER | SO2 | 0 | |
| | NONE/OTHER | NOx | 0 | |
| METHOD USED TO COMPUTE ACTU | JAL GHG EMISSIONS: TIER 1: DE | FAULT HIGH HEAT VALUE AND DEFAULT EF | - | |

CARBON CONTENT USED FOR GHGS (kg C/gal): CARBON CONTENT NOT USED FOR CALCULATION TIER CHOSEN

| • | ACTUAL E | MISSIONS | 1 | POTENTIAL E | RSSIONS | | EMISS | ON FACTOR |
|------------------------------------------------|--------------|----------------|-----------|-------------------|--------------|----------------|--------------|-----------------------|
| | (AFTER CONTI | ROLE / LIMITS) | (BEFORE C | ONTROLS / LIMITS) | (AFTER CONTR | ROLS / LIMITS) | (lb | /10 ³ gal) |
| AIR POLLUTANT EMITTED | lb/hr | tons/yr | lb/hr | tons/yr | lb/hr | tons/yr | uncontrolled | controlled |
| TOTAL PARTICULATE MATTER (PM) (FPM+CPM) | 0.03 | 0.10 | 0.03 | 0.12 | 0.02 | 0.10 | 3.30E+00 | 3.30E+00 |
| FILTERABLE PM (FPM) | 0.02 | 0.06 | 0.02 | 80.0 | 0.01 | 0.06 | 2.00E+00 | 2,00E+00 |
| CONDENSABLE PM (CPM) | 0.01 | 0.04 | 0.01 | 0.05 | 0.01 | 0.04 | 1.30E+00 | 1.30E+00 |
| FILTERABLE PM<10 MICRONS (PM ₁₀) | 0.01 | 0.03 | 0.01 | 0.04 | 0.01 | 0.03 | 1.00E+00 | 1.00E+00 |
| FILTERABLE PM<2.5 MICRONS (PM _{2.5}) | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.01 | 2.50E-01 | 2.50E-01 |
| SULFUR DIOXIDE (SO ₂) | 0.61 | 2.13 | 0.61 | 2.67 | 0.49 | 2.13 | 7.10E+01 | 7.10E+01 |
| NITROGEN OXIDES (NO _x) | 0.17 | 0.60 | 0.17 | 0.75 | 0.14 | 0.60 | 2.00E+01 | 2.00E+01 |
| CARBON MONOXIDE (CO) | 0.04 | 0.15 | 0.04 | 0.19 | 0.03 | 0.15 | 5.00E+00 | 5.00E+00 |
| VOLATILE ORGANIC COMPOUNDS (VOC) | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.01 | 2.00E-01 | 2.00E-01 |
| LEAD | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.26E-03 | 1.26E-03 |

| | | | ACTUAL E | MISSIONS | | POTENTIAL EN | ASSIONS | prim est | EMISSI | ON FACTOR | 1 |
|------------------------------------|--------|-----------|--------------|---------------|-----------|-------------------|--------------|---------------------|--------------|----------------------|----|
| | | CAS | (AFTER CONTR | OLB / LIMITS) | (BEFORE C | ONTROLS / LIMITE) | (AFTER CONTR | i IOLS/LIMITS) , | (lb/ | 10 ³ gat) | L |
| TOXIC / HAZARDOUS AIR POLLUTANT | | NUMBER | lb/hr | lb/yr | , Jb/hr | lb/yr | lb/hr | ""Ib/yr"" | uncontrolled | controlled | 1 |
| Antimony Unlisted Compounds | (H) | SBC-Other | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.00E+00 | 0.00E+00 | 1 |
| Arsenic Unlisted Compounds | (TH) | ASC-Other | 4.8E-06 | 3.4E-02 | 4.8E-06 | 4.2E-02 | 4.8E-06_ | _3.4E+02 | 5.60E-04 | 5.60E-04 | 1 |
| Benzene | (TH) | 71432 | 2.4E-05 | 1.7E-01 | 2.4E-05 | 2.1E-01 | 2.4E 05 | 1.7E-01 | > 2.75E-03 | 2.75E-03 | 1 |
| Beryllium Metal (unreacted) | (TH) | 7440417 | 3.6E-06 | 2.5E-02 | 3.6E-06 | 3.2E-02 | 3.6E-06 | .2.5E-02 | 4.20E-04 | 4.20E-04 | 1 |
| Cadium Metal (elemental unreacted) | (TH) | 7440439 | 3.6E-06 | 2.5E-02 | 3.6E-08 | 3.2E-02 | 3.6E-06 | 2.5E-02 | 4.20E-04 | 4.20E-04 | 1 |
| Chromic Acid (VI) | (TH) | 7738945 | 3.6E-06 | 2.5E-02 | 3.6E-06 | 3.2E-02 | 3.6E-06 | 2.5E-02 | 4.20E-04 | 4.20E-04 | 1 |
| Cobalt Unlisted Compounds | (H) | COC-Other | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.00E+00 | 0.00E+00 | 1 |
| Ethylbenzene | (H) | 100414 | 7.0E-06 | 4.9E-02 | 7.0E-06 | 6.1E-02 | 7.0E-06 | .4.9E-02 | 8.17E-04 | 8.17E-04 | 1 |
| Fluorides (sum fluoride compounds) | (T) | 16984488 | 3.2E-04 | 2.2E+00 | 3.2E-04 | 2.8E+00 | 3.2E-04 | 2.2E+00 | 3.73E-02 | 3.73E-02 | 1 |
| < Formaldehyde | Ŧ | 50000 | 4.1E-04 | 2.9E+00 | 4.1E-04 | 3.6E+00 < | 4.1E-04 | 2.9E+00 | 4.80E-02 | 4.80E-02 | 1 |
| Lead Unlisted Compounds | Œ | PBC-Other | 1.1E-05 | 7.6E-02 | 1.1E-05 | 9.5E-02 | 1.1E-05 | 7.6E-02 | 1.26E-03 | 1.26E-03 | 1 |
| Manganese Unlisted Compounds | (TH) | MNC-Other | 7.2E-06 | 5.0E-02 | 7.2E-06 | 6.3E-02 | 7.2E-06 | 5.0E-02 | 8.40E-04 | 8.40E-04 | 1 |
| Mercury, vapor | · (TH) | 7439976 | 3.6E-06 | 2.5E-02 | 3.6E-06 | 3.2E-02 / | 3.6E-06 | 2.5E-02 | 4.20E-04 | 4.20E-04 | 1. |
| Methyl chtoroform | (TH) | 71566 | 2.0E-06 | 1.4E-02 | 2.0E-06 | 1.8E-02 | 2.0E-06 | 1.4E-02 | 2.36E-04 | 2.36E-04 | 1 |
| Napthalene | (H) | 91203 | 2.9E-06 | 2.0E-02 | 2.9E-06 | 2.5E-02 | 2.9E-06 | 2.0E-02 | 3.33E-04 | 3.33E-04 | 1 |
| Nickle Metal , | (TH) | 7440020 | 3.6E-06 | 2.5E-02 | 3.6E-06 | 3.2E-02 < | 3.6E-06 | 2.5E-02 | 4.20E-04 | 4.20E-04 | 1、 |
| Phosphorus Metal, Yellow or White | (H) | 7723140 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.00E+00 | 0.00E+00 | 1 |
| POM rates uncontrolled | (H) | POM | 2.8E-05 | 2.0E-01 | 2.8E-05 | 2.5E-01 | 2.8E-05 | 2.0E-01 | 3.30E-03 | 3.30E-03 | 1 |
| Selenium compounds | (H) | SEC | 1.8E-05 | 1.3E-01 | 1.8E-05 | 1.6E-01 | 1.8E-05 | 1.3E-01 | 2.10E-03 | 2.10E-03 | 1 |
| Toluene | (H | 108883 | 6.8E-04 | 4.8E+00 | 6.8E-04 | 6.0E+00 | 6.8E-04 | 4.8E+00 | 7.97E-02 | 7.97E-02 | 1 |
| Xylene | (TH) | 1330207 | 1.2E-05 | 8.4E-02 | 1.2E-05 | 1.1E-01 | 1.2E-05 | 8.4E-02 | 1.40E-03 | 1.40E-03 | 1 |
| Total HAP | (H) | | 1.2E-03 | 8.6E+00 | 1.2E-03 | 1.1E+01 | 1.2E-03 | 8.6E+00 | 1.4E-01 | 1.4E-01 | 1 |
| Largest HAP | (H) | | 6.83E-04 | 4.78E+00 | 6.83E-04 | 5.98E+00 | 6.83E-04 | 4.78E+00 | 7.97E-02 | 7.97E-02 | 1 |
| 1 4 5 | | | | | | | | | | | |

| EXPECTED ACTUAL EMISSIONS AFTER CONTROLS / LIMITATIONS | | | | | | | EMISSION FACTOR (lb/10 ³ gal) | |
|--------------------------------------------------------|--------|-----------|----------------------------------------|----------|----------|--------------|---------------------------------------------|--|
| TOXIC AIR POLLUTANT | | CAS Num. | . (b/hr | lb/day | lb/yr | uncontrolled | controlled | |
| Arsenic Unlisted Compounds | (TH) | ASC-Other | 4.80E-06 | 1.15E-04 | 3.36E-02 | 5.60E-04 | 5.60E-04 | |
| Benzene | (TH) | 71432 | 2.36E-05 | 5.66E-04 | 1.65E-01 | 2.75E-03 | 2.75E-03 | |
| Beryllium Metal (unreacted) | (TH) | 7440417 | 3.60E-06 | 8.64E-05 | 2.52E-02 | 4.20E-04 | 4.20E-04 | |
| Cadium Metal (elemental unreacted) | (TH) | 7440439 | 3.60E-06 | 8.64E-05 | 2.52E-02 | 4.20E-04 | 4.20E-04 | |
| Soluble chromate compounds, as chromium (VI | (TH) | SolCR6 | 3.60E-06 | 8.64E-05 | 2.52E-02 | 4.20E-04 | 4.20E-04 | |
| Fluorides (sum fluoride compounds) | (T) | 16984488 | 3.20E-04 | 7.67E-03 | 2.24E+00 | 3.73 €-02 | 3.73E-02 | |
| Formaldehyde | (TH) | 50000 | 4.11E-04 | 9.87E-03 | 2.88E+00 | 4.80E-02 | 4.80E-02 | |
| Manganese Unlisted Compounds | (TH) | MNC-Other | 7.20E-06 | 1.73E-04 | 5.04E-02 | 8.40E-04 | 8.40É-04 | |
| Mercury, vapor | (TH) | 7439976 | 3.60E-06 | 8.64E-05 | 2.52E-02 | 4.20E-04 | 4.20E-04 | |
| Methyl chloroform | (TH) | 71566 | 2.02E-06 | 4.85E-05 | 1.42E-02 | 2.36E-04 | 2.36E-04 | |
| Nickie Metal | (TH) | 7440020 | 3.60E-06 | 8.64E-05 | 2.52E-02 | 4.20E-04 | 4.20E-04 | |
| Toluene | (TH) | 108883 | 6.83E-04 | 1.64E-02 | 4.78E+00 | 7.97E-02 | 7.97E-02 | |
| Xylene | (TH) | 1330207 | 1.20E-05 | 2.88E-04 | 8.40E-02 | 1.40E-03 | 1.40E-03 | |
| | 142516 | | :::::::::::::::::::::::::::::::::::::: | | | | | |

NO.2 FUELOIL ZUMIT: EQ.000 GALLYR.

-0.0000036 16/hx X24 > 0.000086 16/24ur.

40.0000036 16/h. X24=0.00006 16/24/w.

| (1) | | ACTUAL EMISSIONS | POTENTIAL EMISSION | S - utilize max heat | POTENTIAL EI | MISSIONS With | |
|----------------------|----------------|----------------------|------------------------------|----------------------|----------------|---------------|----------------|
| GREENHOUSE GAS | EPA N | MRR CALCULATION METH | Factors utilize requested ft | | | | |
| POLLUTANT |] | | | - | short tons/yr, | | short tons/yr, |
| | metric tons/yr | metric tons/yr, CO2e | short tons/yr | short tons/yr | CO2e | short tons/yr | CO2e |
| CARBON DIOXIDE (CO2) | 612.39 | 612.39 | 675.04 | 857.01 | 857.01 | 684.83 | 684.83 |
| METHANE (CH₄) | 2.48E-02 | 5.22E-01 | 2.74E-02 | 3.48E-02 | 7.30E-01 | 2.78E-02 | 5.83E-01 |
| NITROUS OXIDE (N₂O) | 4.97E-03 | 1.54E+00 | 5.48E-03 | 6.95E-03 | 2.16E+00 | 5.56E-03 | 1.72E+00 |
| | TOTAL | 614.45 | | TOTAL | 859.90 | TOTAL | 687.13 |

NOTES: 1) CO2e means CO2 equivalent
2) The DAQ Air Emissions Reporting Online (AERO) system requires short tons and the EPA MRR requires metric tons

POTENTIAL TAP EMISSIONS - HMA- H2

NGDENR

FUEL OIL COMBUSTION EMISSIONS CALCULATOR REVISION G 11/5/2012 - INPUT 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.

| | | | 1 • |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------|
| Directions: Enter and select information in the boxes that are highlighted in blue: | | | 1 |
| COMPANY NAME: | Carolina Sunrock, LLC | 1 | |
| FACILITY ID NUMBER: | 1700016 | | • |
| PERMIT NUMBER | 10682R00 | | |
| FACILITY CITY: | | | , |
| | Burlington | | |
| PACILITY COUNTY: | Caswell | | |
| SPREADSHEET PREPARED BY: | LLG | | |
| EMISSION SOURCE DESCRIPTION: | No. 2 oil-fired Boiler | | , |
| EMISSION SOURCE ID NO.: | HMA-H2 - | | |
| LATEST CONSTRUCTION/MODIFICATION DATE: | 2020 | | |
| SELECT THE TYPE OF BOILER FROM THE LISTS BELOW: | 26 | Ī | |
| | | | |
| Boilers=>100 mmBtu/hr 1 = No. 6 oil-fired, normal firing (U) | Boilers=>100 mmBtu/hr (cont'd) | | |
| 2 = No. 6 oil-fired, normal firing (I) | 17 = No. 2 all-fired (C) 18 = No. 2 all-fired, LNB/FGR (U) | | |
| 3 = No. 6 oil-fired, normal firing (C) | 19 = No. 2 dil-fired, LNB/FGR (I) | | |
| 4 = No. 6 oil-fired, normal firing, low Nox burner (U) 5 = No. 6 oil-fired, normal firing, low Nox burner (I) | 20 = No. 2 oil-fired, LNB/FGR (C) | | |
| 6 = No. 6 oil-fired, normal firing, low Nox burner (C) | 21 = Vertical fired utility boiler | | |
| 7 = No. 6 oil-fired, tangential firing (U) 8 = No. 6 oil fired, tangential firing, low Nox burner (U) | Small Boilers <100 mm8tu/hr | | |
| 9 = No. 5 oil-fired, normal firing (U) | 22 = No. 6 oil-fired (I) | | |
| 10 = No. 5 oil-fired, normal firing (I) 11 = No. 5 oil-fired, tangential firing (U) | 23 = No. 6 oil-fired (C) 24 = No. 5 oil-fired (C) | | |
| 12 = No. 4 oil-fired, normal firing (U) | 25 = No. 4 oil-fired (C) | | |
| 13 = No. 4 oil-fired, normal firing (I) 14 = No. 4 oil-fired, tangential firing (U) | 26 = No. 2 oil-fired (I) 27 = No. 2 oil-fired (C) | | |
| 15 = No. 2 oil-fired (U) | 27 - 140. 2 bil-1180 (c) | * | |
| 16 = No. 2 oil-fired (I) | 28 = Residential Furnace | | |
| Note: The emission factors for fuel oil-fired boilers depend on the boiler size and application ty | me. In the listing of boiler types, the following notation is used: LI = Littility boilers | | |
| (producing steam for the generation of electricity), i = Industrial boilers (generating steam or h | ot water for process heat, electricity generation, or space heat), C = Commercial | | |
| or institutional (used for space heating of commercial or institutional facilities) and residential (fi boiler from the lists above. | urnaces used for space heating purposes). Please be sure to select the proper | | |
| | · | | |
| EMISSION SOURCE INPUT DATA | NO.2-EXEC | ou. UK. | 4/ = |
| MAXIMUM HEAT INPUT (MILLION BTU PER HOUR): | 1.10 MMBTU/HR | | |
| ACTUAL ANNUAL FUEL USAGE (GALLONS PER YEAR): | 60,000,0 GAL/YR , W ITELY T | 0 00 x | DOU GAL/12. |
| MAXIMUM ANNUAL FUEL USAGE (GALLONS PER YEAR) | 68.828.6 GALYR TO LATED | 2-1 | A Prome |
| | 05,045.5 (C C C C C C C C C C C C C C C C C C | DONAL | NO |
| MAXIMUM FUEL SULFUR CONTENT (%): | %- (TYPEOVER IF NECESSARY - DEFAULT WALUE = 2.1 FOR RESIDUAL FUEL OIL OR 0.5 FOR DISTILLATE FUEL OIL) | | |
| FUEL HEATING VALUE FUEL HEATING VALUE (BTU/GAL): | 140,000 BTU/GAL POTEUTIAL | FAIRCE | adC |
| DEFAULT WILL APPEAR AS FOLLOWS (not used for Greenhouse Gas calcs | 10,000 | ונפן אות: | معديات الصاحبة |
| 150,000 BTU/GAL FOR No. 6, 5, and 4 FUEL OIL | | A LIM | DATE |
| 140,000 BTU/GAL ALL OTHERS | (| | A-1 61 - |
| | 3 A 17 L A | 71 1 3 1 | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) | (0.194 | (p/yr) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA | (0.194 | (P/YC) | y e |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) | Terricies will appear for each control device that is selected. The user may enter | (P/YC) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. | | (P/4C) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of | AVERAGE PARTICULATE CONTROL EFF.: | (PI46) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: | | (PIYO) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: | (P/10) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: | (6140) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: D AVERAGE SULFUR DIOXIDE CONTROL EFF.: | (6140) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: ***CONTROL:** TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL:** | AVERAGE PARTICULATE CONTROL EFF.: D AVERAGE SULFUR DIOXIDE CONTROL EFF.: | (6/40) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: **CONTROL:** TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL:** **LONGREPHIA** TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL:** | AVERAGE PARTICULATE CONTROL EFF.: O AVERAGE SULFUR DIOXIDE CONTROL EFF.: | (6/40) | |
| CONTROL DEVICE INPUT DATA CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: VOICE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: Insulation Insulatio | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 AVERAGE NITROGEN OXIDE CONTROL EFF.: | (b/YO) | |
| CONTROL DEVICE INPUT DATA CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: | AVERAGE PARTICULATE CONTROL EFF.: 0 AVERAGE SULFUR DIOXIDE CONTROL EFF.: 0 AVERAGE NITROGEN OXIDE CONTROL EFF.: | (P/YO) | |
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| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (CALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL / IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C - www.epa.gov/climatechange/emissions/ghgndlemaking.html | AVERAGE PARTICULATE CONTROL EFF.: | (P/16) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL / IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C - | AVERAGE PARTICULATE CONTROL EFF.: | (6/40) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (CALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL / IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C - www.epa.gov/climatechange/emissions/ghgndlemaking.html | AVERAGE PARTICULATE CONTROL EFF.: | (P/40) | |
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| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL / IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C- www.epa.gov/climatechange/emissions/ghgrulemaking.html NOTE: EF is "Emission Factor" SINCE TIER 3 IS NOT BEING USED. | AVERAGE PARTICULATE CONTROL EFF.: | (P/10) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL / IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C- www.epa.gov/climatschange/smissions/ghgrulemaking.html NOTE: EF is "Emilesion Factor" SINCE TIER 3 IS NOT BEING USED, FUEL CARBON CONTENT WILL NOT BE USED SELECT FUEL TYPE | AVERAGE PARTICULATE CONTROL EFF.: | (P/YC) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL / IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C - www.epa.gov/climatechange/emissions/ghgrulemaking.html NOTE: EF is "Emission Factor" SINCE TIER 3 IS NOT BEING USED, FUEL CARBON CONTENT WILL NOT BE USED SELECT FUEL TYPE HIGH HEAT VALUE (HHV) FOR GHGs FOR TIER 1 and TIER 3, the FUEL HEATING VALUE entered above is override. | AVERAGE PARTICULATE CONTROL EFF.: | | |
| CONTROL DEVICE INPUT DATA CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL. IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C- www.epa.gov/climatechange/emissions/ghgrulemaking.html NOTE: EF is "Emission Factor" SINCE TIER 3 IS NOT BEING USED, FUEL CARBON CONTENT WILL NOT BE USED SELECT FUEL TYPE HIGH HEAT VALUE (HHV) FOR GHGs FOR TIER 1 and TIER 3, the FUEL HEATING VALUE entered above is override Distillate Fuel Oil No. 2 0.138 mmBTU/gail THIS VALUE WILL BE US | AVERAGE PARTICULATE CONTROL EFF.: | (P/YC) | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL / IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C - www.epa.gov/climatechange/emissions/ghgrulemaking.html NOTE: EF is "Emission Factor" SINCE TIER 3 IS NOT BEING USED, FUEL CARBON CONTENT WILL NOT BE USED SELECT FUEL TYPE HIGH HEAT VALUE (HHV) FOR GHGs FOR TIER 1 and TIER 3, the FUEL HEATING VALUE entered above is override. | AVERAGE PARTICULATE CONTROL EFF.: | | |
| CONTROL DEVICE INPUT DATA CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL / IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandiatory Reporting Rule (MRR) Subpart C - www.epa.gov/climatechang/emissions/ghgrulemaking.html NOTE: EF is "Emission Factor" SINCE TIER 3 IS NOT BEING USED, FUEL CARBON CONTENT WILL NOT BE USED SELECT FUEL TYPE HIGH HEAT VALUE (HHV) FOR GHGs FOR TIER 1 and TIER 3, the FUEL HEATING VALUE entered above is override Distillate Fuel Oil No. 2 0.138 mmBTU/gail THIS VALUE WILL BE US Distillate Fuel Oil No. 4 0.146 mmBTU/gail | AVERAGE PARTICULATE CONTROL EFF.: | | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL /IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C - www.epa.goviclimatechange/emissions/gingrulemaking.html NOTE: EF is "Emission Factor" SINCE TIER 3 IS NOT BEING USED, FUEL CARBON CONTENT WILL NOT BE USED SELECT FUEL TYPE HIGH HEAT VALUE (HHV) FOR GHGs FOR TIER 1 and TIER 3, the FUEL HEATING VALUE entered above is overrided Distillate Fuel Oil No. 2 Distillate Fuel Oil No. 2 Distillate Fuel Oil No. 3 O.14 mmBTU/gal Residual Fuel Oil No. 5 O.14 mmBTU/gal Residual Fuel Oil No. 6 O.15 mmBTU/gal | AVERAGE PARTICULATE CONTROL EFF.: | | |
| (TYPE OVER NUMBER AT RIGHT IF YOU HAVE SITE SPECIFIC DATA) CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: TYPE OF POSTCOMBUSTION SULFUR DIOXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: TYPE OF NITROGEN OXIDE CONTROL: REQUESTED PERMIT LIMITATIONS (IF APPLICABLE) REQUESTED MAXIMUM FUEL USAGE LIMIT (GALLONS PER YEAR) REQUESTED MAXIMUM FUEL SULFUR CONTENT (%) (TYPEOVER IF NECESSARY - DEFAULT VALUES ARE THE CALCULATED POTENTIAL / IN THE EMISSION SOURCE INPUT DATA SECTION) ADDITIONAL INFORMATION FOR GREENHOUSE GAS EMISSIONS ENTER CALCULATION TIER from EPA Mandatory Reporting Rule (MRR) Subpart C- www.epa.goviclimatechange/emissions/ghgrulemaking.html NOTE: EF is "Emission Factor" SINCE TIER 3 IS NOT BEING USED, FUEL CARBON CONTENT WILL NOT BE USED SELECT FUEL TYPE HIGH HEAT VALUE (HHV) FOR GHGs FOR TIER 1 and TIER 3, the FUEL HEATING VALUE entered above is override Distillate Fuel Oil No. 2 0.138 mmBTU/gal THIS VALUE WILL BE US Distillate Fuel Oil No. 5 0.146 mmBTU/gal Residual Fuel Oil No. 5 0.146 mmBTU/gal | AVERAGE PARTICULATE CONTROL EFF.: | (P/40) | |
| CONTROL DEVICE INPUT DATA Note: Select the type of control devices from the pull-down menus below. Default control of a different control efficiency to override these values if site specific data is available. TYPE OF PARTICULATE CONTROL: CONTROL | AVERAGE PARTICULATE CONTROL EFF.: | (P/40) | |

ATTACHMENT E.g.

->

FUEL OIL COMBUSTION EMISSIONS CALCULATOR REVISION G 11/5/2012 - 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 aubject 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.

| COMPANY: | Carolina Sunrock, LLC | MAX H | HEAT INPUT: | | 1.10 | MMBTU/HR |
|-----------------------------|---------------------------|------------------|-----------------------|------------------|-----------|------------|
| FACILITY ID NO.: | 1700016 | FUEL | HEAT VALUE: | ** | 140,000 | BTU/GAL |
| PERMIT NUMBER: | 10682R00 | HHV fo | or GHG CALCULAT | IONS: | 0.138 | mm BTÜ/GAL |
| FACILITY CITY: | Burlington | ACTU | AL ANNUAL FUEL | JSAGE: | 60,000 | GALYR |
| FACILITY COUNTY: | Caswell | MAXIN | JUM ANNUAL FUE | _USAGE: | 68,829 | GAL/YR |
| USER NAME: | LLG | MAXIN | NUM SULFUR CON | TENT: | 0.5 | % |
| EMISSION SOURCE DESCRIPTION | V: No. 2 oil-fired Boiler | (32.5) | | | . 11.20 | <u> </u> |
| EMISSION SOURCE ID NO.: | HMA-H2 | | FUEL USAGE: | | 60,000 | GAL/YR |
| | | | SULFUR CONTENT | : | 0.5 | % |
| | | | | Sasta duit Maski | 14. | |
| | NONE/OTHER | | PM | | 0 | |
| | NONE/OTHER | | SO2 · | | 0 | |
| | NONE/OTHER | | NOx | | 0 | |
| METHOD USED TO COMPUTE ACT | TUAL GHG EMISSIONS: T | IER 1: DEFAULT I | HIGH HEAT VALUE | AND DEFAULT EF | | |
| CARRON CONTENT USED FOR GI | AGS (ka C/aal): | ADDON CONTENT | T NOT LICED FOR A | SALCHI ATION TIE | D CHOCKY: | |

CARBON CONTENT USED FOR GHGS (kg C/gal): CARBON CONTENT NOT USED FOR CALCULATION TIER CHOSEN

| • • | ACTUAL E | ACTUAL EMISSIONS | | POTENTIAL EMSSIONS | | | | EMISSION FACTOR | |
|------------------------------------------------|--------------|------------------|-----------|--------------------|--------------|----------------|--------------|-----------------------|--|
| | (AFTER CONTR | IOLS / LIMITS) | (BEFORE C | CNTROLS / LIMITS) | (AFTER CONTI | ROLS / LIMITS) | (lb. | /10 ³ gal) | |
| AIR POLLUTANT EMITTED | lb/hr | tons/yr | lb/hr | tons/yr | lb/hr | tons/yr | uncontrolled | controlled | |
| TOTAL PARTICULATE MATTER (PM) (FPM+CPM) | 0.03 | 0.10 | 0.03 | 0.11 | 0.02 | 0.10 | 3.30E+00 | 3.30E+00 | |
| FILTERABLE PM (FPM) | 0.02 | 0.06 | 0.02 | 0.07 | 0.01 | 0.06 | 2.00E+00 | 2.00E+00 | |
| CONDENSABLE PM (CPM) | 0.01 | 0.04 | 0.01 | 0.04 | 0.01 | 0.04 | 1.30E+00 | 1.30E+00 | |
| FILTERABLE PM<10 MICRONS (PM ₁₀) | 0.01 | 0.03 | 0.01 | 0.03 | 0.01 | 0.03 | 1.00E+00 | 1.00E+00 | |
| FILTERABLE PM<2.5 MICRONS (PM _{2.5}) | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.01 | 2.50E-01 | 2.50E-01 | |
| SULFUR DIOXIDE (SO ₂) | 0.56 | 2.13 | 0.56 | 2.44 | 0.49 | 2.13 | 7.10E+01 | 7.10E+01 | |
| NITROGEN OXIDES (NO _x) | 0.16 | 0.60 | 0.16 | 0.69 | 0.14 | 0.60 | 2.00E+01 | 2.00E+01 | |
| CARBON MONOXIDE (CO) | ~ 0.04 | 0.15 | 0.04 | 0.17 | 0.03 | 0.15 | 5.00E+00 | 5.00E+00 | |
| VOLATILE ORGANIC COMPOUNDS (VOC) | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.01 | 2.00E-01 | 2.00E-01 | |
| LEAD | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.26E-03 | 1.26E-03 | |

| - [| | | | ACTUAL EN | IISSIONS | | POTENTIAL EN | ASSIONS / | | > EMISSION | ON FACTOR |
|------|------------------------------------|--------|-----------|---------------|---------------|-----------|-----------------|--------------|----------------------|--------------|----------------------|
| - 1 | | | CAS | (AFTER CONTRO | OLS / LIMITS) | (BEFORE C | ONTROLS/LIMITS) | (AFTER CONTR | , OLS / L!MITS)"⊃ | / (lb/ | 10 ³ gat) |
| Ŀ | TOXIC / HAZARDOUS AIR POLLUTANT | | NUMBER | · Ib/hr | lb/yr | lb/hr | lb/yr | lb/hr | lb/ÿr | uncontrolled | controlled |
| | Antimony Unlisted Compounds | . (H) | SBC-Other | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.00E+00 | 0.00E+00 |
| | Arsenic Unlisted Compounds | (TH) | ASC-Other | 4.4E-06 | 3.4E-02 | 4.4E-06 | 3.9E-02 | 4.4E-06< | 3.4E-02 | 5.60E-04 | 5.60E-04 |
| | Benzene - | (TH) | 71432 | 2.2E-05 | 1.7E-01 | 2.2E-05 | 1.9E-01 | 2.2E-05 | .1.7E-01 | 2.75E-03 | 2.75E-03 |
| | Beryllium Metal (unreacted) | (TH) | 7440417 | 3.3E-06 | 2.5E-02 | 3.3E-06 | 2.9E-02 | 3.3E-06 | 2.5E-02 | 4.20E-04 | 4.20E-04 |
| ۷ | Cadium Metal (elemental unreacted) | (TH) | 7440439 | 3.3E-06 | 2.5E-02 | 3.3E-06 | 2.9E-02 | 3.3E-06 | 2.5E-02 | 4.20E-04 | 4.20E-04 |
| Ŀ | Chromic Acid (VI) | (TH) | 7738945 | 3.3E-06 | 2.5E-02 | 3.3E-06 | 2.9E-02 | 3.3E-06 | 2.5E-02 | 4.20E-04 | 4.20E-04 |
| Ŀ | Cobalt Unlisted Compounds | (H) | COC-Other | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.00E+00 | 0.00E+00 |
| | Ethylbenzene | (H) | 100414 | 6,4E-06 | 4.9E-02 | 6.4E-06 | 5.6E-02 | 6.4E-06 | 4.9E-02 | 8.17E-04 | 8.17E-04 |
| _ 1 | luorides (sum fluoride compounds) | (T) | 16984488 | 2.9E-04 | 2.2E+00 | 2.9E-04 | 2.6E+00 | 2.9E-04 | 2.2E+00 | 3.73E-02 | 3.73E-02 |
| 4.0 | ormaldehyde | (TH) · | 50000 | 3.8E-04 | 2.9E+00 | 3.8E-04 | 3.3E+00 / | 3.8E-04 | 2.9E+00 | 4.80E-02 | 4.80E-02 |
| Ŀ | ead Unilsted Compounds | (H) | PBC-Other | 9.9E-06 | 7.6E-02 | 9.9E-06 | 8.7E-02 | 9.9E-06 | 7.6E-02 | 1.26E-03 | 1.26E-03 |
| - [4 | Mangainese Unlisted Compounds | (TH) | MNC-Other | 6.6E-06 | 5.0E-02 | 6.6E-06 | 5.8E-02 | 6,6E-06 | 5.0E-02 | 8.40E-04 | 8.40E-04 |
| ال) | viercury, vapor > | (TH) | 7439976 | 3,3E-06 | 2.5E-02 | 3.3E-06 | 2.9E-02 d | 3.3E-06 | 2.5E-02 | 4.20E-04 | 4.20E-04 |
| 1 | viethyl chloroform | (TH) | 71566 | 1.9E-06 | 1.4E-02 | 1.9E-06 | 1.6E-02 | 1.9E-06 | 1.4E-02 | 2.36E-04 | 2.36E-04 |
| Ŀ | Vapthalene | (H) | 91203 | 2.6E-06 | 2.0E-02 | 2.6E-06 | 2.3E-02 | 2.6E-06 | 2.0E-02 | 3.33E-04 | 3.33E-04 |
| ા | vickle Metal > | (TH) | 7440020 | 3.3E-06 | 2.5E-02 | 3.3E-06 | 2.9E-02 < | 3.3E-06 | 2.5E-02 | 4.20E-04 | 4.20E-04 |
| - 1 | Phosphorus Metal, Yellow or White | (H) | 7723140 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.00E+00 | 0.00E+00 |
| _ 1 | OM rates uncontrolled | (H) | POM | 2.6E-05 | 2.0E-01 | 2.6E-05 | 2.3E-01 | 2.6E-05 | 2.0E-01 | 3.30E-03 | 3.30E-03 |
| Ŀ | Selenium compounds | (H) · | SEC | 1.7E-05 | 1.3E-01 | 1.7E-05 | 1.4E-01 | 1.7E-05 | 1.3E-01 | 2.10E-03 | 2.10E-03 |
| Ŀ | Toluene | (TH) | 108883 | 6.3E-04 | 4.8E+00 | 6.3E-04 | 5.5E+00 | 6.3E-04 | 4.8E+00 | 7.97E-02 | 7.97E-02 |
| Ŀ | Kylene | (TH) | 1330207 | 1.1E-05 | 8.4E-02 | 1.1E-05 | 9.6E-02 | 1.1E-05 | 8.4E-02 | 1.40E-03 | 1.40E-03 |
| Ŀ | Total HAP | (H) | | 1.1E-03 | 8.6E+00 | 1.1E-03 | 9.9E+00 | 1.1E-03 | 8.6£+00 | 1.4E-01 | 1.4E-01 |
| Ŀ | argest HAP | (H) | | 6.26E-04 | 4.78E+00 | 6.26E-04 | 5.48E+00 | 6.26E-04 | 4.78E+00 | 7.97E-02 | 7.97E-02 |

| | EXPE | TED ACTUAL EM | ISSIONS AFTER CONTROLS / LIMIT | TATIONS | | EMISSI | EMISSION FACTOR | |
|----------------------------------------------|-------|---------------|--------------------------------|----------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--|
| | | | | | | (lb | /10³ gai) | |
| TOXIC AIR POLLUTANT | | CAS Num. | lb/hr | lb/day | lb/yr | uncontrolled | controlled | |
| Arsenic Unlisted Compounds | (TH) | ASC-Other | 4.40E-06 | 1.06E-04 | 3.36E-02 | 5.60E-04 | 5.60E-04 | |
| Benzene | (TH) | 71432 | 2.16E-05 | 5.19E-04 | 1.65E-01 | 2.75E-03 | 2.75E-03 | |
| Beryllium Metal (unreacted) | (TH) | 7440417 | 3.30E-06 | 7.92E-05 | 2.52E-02 | 4.20E-04 | 4.20E-04 | |
| Cadium Metal (elemental unreacted) | (HI) | 7440439 | 3.30E-06 | 7.92E-05 | 2.52E-02 | 4.20E-04 | 4.20E-04 | |
| Soluble chromate compounds, as chromium (VI) | (TH) | SolCR6 | 3.30E-06 | 7.92E-05 | 2.52E-02 | 4.20E-04 | 4.20E-04 | |
| Fluorides (sum fluoride compounds) | (T) | 16984488 | 2.93E-04 | 7,03E-03 | 2.24E+00 | 3.73E-02 | 3.73E-02 | |
| Formaldehyde | (TH) | 60000 | 3.77E-04 | 9.05E-03 | 2.88E+00 | 4.80E-02 | 4.80E-02 | |
| Manganese Unlisted Compounds | (TH) | MNC-Other | 6.60E-06 | 1.58E-04 | 5.04E-02 | 8.40E-04 | 8.40E-04 | |
| Mercury, vapor | (TH) | 7439976 | 3.30E-06 | 7.92E-05 | 2.52E-02 | 4.20E-04 | 4.20E-04 | |
| Methyl chloroform | `(TH) | 71566 | 1.85E-06 | 4.45E-05 | 1.42E-02 | 2.36E-04 | 2.36E-04 | |
| Nickle Metal | (TH) | 7440020 | 3.30E-06 | 7.92E-05 | 2.52E-02 | 4.20E-04 | 4.20E-04 | |
| Toluene | (TH) | 108883 | 6.26E-04 | 1.50E-02 | 4.78E+00 | 7.97E-02 | 7.97E-02 | |
| Xylene | (TH) | 1330207 | 1.10E-05 | 2.64E-04 | 8.40E-02 | 1.40E-03 | 1.40E-03 | |
| | | | | 73772 | | 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 1000 | 5 2 X | |

No. 2 FUEL 014 > LIMIT: 60,000

 $\Rightarrow 0.000003316/hv.$ $\times 24 = 0.000079$ 7 16/24/hv40.00000033 15/hr X24 = 0.0000 79 16/24W.

| | ACTUAL EMISSIONS | | | POTENTIAL EMISSION: input capacity and EP | | POTENTIAL EMISSIONS With Requested Emission Limitation - utilize requested fuel limit and EPA MRR Emission Factors | |
|----------------------------------|------------------|------------------------------------|---------------|----------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------|
| GREENHOUSE GAS | EPA N | EPA MRR CALCULATION METHOD: TIER 1 | | | S MRK EMISSION | | |
| POLLUTANT | metric tons/yr | metric tons/yr, CO2e | short tons/yr | short tons/yr | short tons/yr, CO2e | short tons/vr | short tons/yr, CO2e |
| CARBON DIOXIDE (CO2) | 612.39 | 612.39 | 675.04 | 785.59 | 785.59 | 684.83 | 684.83 |
| METHANE (CH ₄) | 2.48E-02 | 5.22E-01 | 2.74E-02 | 3.19E-02 | 6.69E-01 | 2.78E-02 | 5,83E-01 |
| NITROUS OXIDE (N ₂ O) | 4.97E-03 | 1.54E+00 | 5.48E-03 | 6.37E-03 | 1.98E+00 | 5.56E-03 | 1.72E+00 |
| | TOTAL | 614.45 | | TOTAL | 788.24 | TOTAL | 687.13 |

NOTES: 1) CO2e means CO2 equivalent

²⁾ The DAQ Air Emissions Reporting Online (AERO) system requires short tons and the EPA MRR requires metric tons

POTENTIAL TAP EMISSION RATES (CARSENIC, CADMIUM, NICKEL)

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.

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Carolina Sunrock, LL0

10682R00

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

General Facility Information

COMPANY NAME:

FACILITY ID NUMBER:

PERMIT NUMBER

FACILITY CITY:

FACILITY COUNTY:

SPREADSHEET PREPARED BY:

General Facility Information

MAXIMUM HOURLY THROUGHPUT AT TRUCK LOAD OUT

ACTUAL ANNUAL PRODUCTION

MAXIMUM ANNUAL PRODUCTION*

(yd3/year) 1,051,200 *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 PERCENT OF ANNUAL LOADOUT THROUGH CENTRAL MIX

| 100 | (% by volume) | |
|-----|---------------|--|
| 0 | (% by volume) | |

(yd³/hour) (vd³/year)

Facility Emissions Control Information

IS THERE A CONTROL DEVICE ON THE TRUCK MIX? IS THERE A CONTROL DEVICE ON THE CENTRAL MIX?

Material Composition Information

Cement

Supplement

Coarse Aggregate

Sand

Water

| 2 | (1=No, 2=Yes) | |
|---|---------------|--|
| 1 | (1=No, 2=Yes) | |

| | Typical NC Comp.* |
|----------------|-------------------|
| 448 lbs | 410 lbs |
| 148 Ibs | 120 lbs |
| 1980 Ibs | 1884 lbs |
| 1440 Ibs | 1443 lbs |
| 140 lbs | 167 /bs |
| 4158 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"

Enter the process rate if different from default, otherwise leave blank Process Rate²

Maximum Allowable Emission Rate3 PM Emission Rate Before controls PM Emission Rate After Controls

Assumed control device efficiency for w Complies with 2D .0515? Control device required to comply?

| Cement Silo | Flyash silo | Sand&Agg Weigh hopper | Truck mix ¹ | Central mix ¹ | |
|----------------|----------------|--------------------------|---------------------------|-----------------------------|---------|
| | | | | | |
| | X (17) | | | | |
| 25 | 25 | 205.200 | 240.96 | 0.000 | tons/hr |
| 35.4 | 35.4 | 58.8 | 60.5 | 0.0 | lbs/hr |
| 18.250 | 78.500 | 0.985 | 52.210 | 0.000 | lbs/hr |
| 0.025 | 0.223 | 0.001 | 1.001 | 0.000 | lbs/hr |
| weigh hoppe | r ⁴ | 99.9% | | | • |
| yes | yes | yes | yes | yes | |
| no | yes | по | no | no | |

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

ATTACHMENT ELO

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.

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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General Facility Information

COMPANY NAME:

FACILITY ID NUMBER:

PERMIT NUMBER

FACILITY CITY:

FACILITY COUNTY:

SPREADSHEET PREPARED BY:

General Facility Information

MAXIMUM HOURLY THROUGHPUT AT TRUCK LOAD OUT

ACTUAL ANNUAL PRODUCTION

Facility Production Information

PERCENT OF ANNUAL LOADOUT THROUGH TRUCK MIX

PERCENT OF ANNUAL LOADOUT THROUGH CENTRAL MIX

Facility Emissions Control Information

IS THERE A CONTROL DEVICE ON THE TRUCK MIX?

IS THERE A CONTROL DEVICE ON THE CENTRAL MIX?

Material Composition Information

Cement

Supplement

Coarse Aggregate

Sand

Water

Total

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

| Carolina Sunrock | LLC | | |
|------------------|-----|--|--|
| 1700016 | | | |
| 10682R00 | | | |
| Burlington | | | |
| Caswell | | | |
| LLG | | | |

| | | |
|---------|-------------------------|------|
| 120 | (yd ³ /hour) | |
| 1051200 | (yd³/year) | |

| 100 | (% by volume) | |
|-----|---------------|--|
| 0 | (% by volume) | |

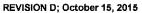
| 2 | (1=No, 2=Yes) | |
|---|---------------|--|
| 1 | (1=No, 2=Yes) | |

| | | Typical NC Comp.* |
|------|-----|-------------------|
| 448 | lbs | 410 lbs |
| 148 | lbs | 120 lbs |
| 1980 | lbs | 1884 lbs |
| 1440 | lbs | 1443 lbs |
| 140 | lbs | 167 lbs |
| 4158 | lbs | 4024 lbs |

| PARTICULATE EMISSION | ıe | ACTUAL EMISSIONS | | POTENTIAL EMISSIONS | | | |
|------------------------|-----------|------------------|------------------|---------------------|---------------|----------------|------------|
| PARTICOLATE LIMISSIONS | | (AFTER CON | ITROLS / LIMITS) | (BEFORE COA | TROLS/LIMITS) | (AFTER CONTROL | .S/LIMITS) |
| | Pollutant | | 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** | PM | 0.985 | 4.314 | 0.985 | 4.314 | 0.985 | 4.314 |
| [sand & aggr.] | 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 | 13.15 |
| | PM10 | 1.433 | 6.275 | 1.433 | 6.275 | 1.433 | 6.275 |
| TOTAL PM | PM | 5.095 | 22.318 | 1031704 | 44 222 | 5 095 | 22.31 |
| TOTAL PHIO | PM10 | 2 435 | | Bacel | a a faren | 2.435 | 10,88 |
| Title V Potential | PM10 | | | | | | 0.231 |

^{*}Actual/Potential weigh hopper (sand & aggr) emissions assumed uncontrolled since Al

CONCRETE BATCH PLANT EMISSIONS CALCULATOR - OUTPUT SCREEN





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| | | | | | <u> </u> | | |
|--------------------------------------|---------------|------------------|------------------|--------------------|----------------|---------------------------|----------|
| POLLUTANT | CAS NUMBER | ACTUAL EMISSIONS | | POTENTIAL EMSSIONS | | | |
| T OLLO IAM | SAD IVOINDEIX | (AFTER CON | (TROLS / LIMITS) | (BEFORE CON | NTROLS/LIMITS) | (AFTER CONTROLS / LIMITS) | |
| , | | lb/hr | lb/yr | ib/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 |
| Setenium 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 |

EXPECTED EMISSIONS AFTER CONTROLS / LIMITATIONS

(Daily calculations are based on maximum hourly plant capacity operating at 24 hours per day. If over the facility 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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| | | | | | | ydra Haerula | | | |
|-------------------|-----------|---------------------------|------------------|-------------|---------------------|---------------------------|----------|--|--|
| ARSENIC EMISSIONS | | ACTUAL | ACTUAL EMISSIONS | | POTENTIAL EMISSIONS | | | | |
| | | (AFTER CONTROLS / LIMITS) | | (BEFORE CON | NTROLS/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 EMISSIONS | | ACTUAL | ACTUAL EMISSIONS | | POTENTIA | L EMISSIONS | |
|---------------------|-----------|---------------------------|------------------|----------------------------|----------|---------------------------|----------|
| • | • | (AFTER CONTROLS / LIMITS) | | (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 | - | r | | - | - | - |
| 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 |

| CADMIUM EMISSIONS: / | | ACTUAL E | ACTUAL EMISSIONS | | POTENTI | ALEMISSIONS (| t 2 |
|----------------------|-----------|---------------------------|------------------|----------------------------|----------|---------------------------|---------|
| | | (AFTER CONTROLS / LIMITS) | | (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-0 |
| central mix | Cadmium | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+0 |
| cement silo | . Cadmium | - 1 | - | 6.29E-06 | 5.51E-02 | - | |
| supplement siło* | Cadmium | 1.76E-07 | 1.54E-03 | 1.76E-07 | 1.54E-03 | 1.76E-07 | 1.54E-0 |
| TOTAL | Cadmium | 5.00E-07 | 4.38E-03 | 7.69E-06 | 6.74E-02 | 5.00E-07 | 4.38E-0 |
| | | (Cadmium TPE | R: 0.37 lb/yr) | | - | ŧ | |

| CHROMIUM EMISSIONS | | ACTUAL EMISSIONS | | POTENTIAL EMISSIONS | | | | | |
|--------------------|-----------|---------------------------|----------|---------------------|-----------------|---------------------------|----------|--|--|
| | | (AFTER CONTROLS / LIMITS) | | (BEFORE CON | TROLS / 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 | | |

CONCRETE BATCH PLANT EMISSIONS CALCULATOR - TAP CALCULATIONS REVISION D; October 15, 2015



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|------------------|---------------------------|----------|------------------|------------------|---------------------------|----------------|----------|--|--|--|
| LEAD EMISSIONS | Ŷ. | ACTUAL | ACTUAL EMISSIONS | | POTENTIAL EMISSIONS | | | | | |
| d - | (AFTER CONTROLS / LIMITS) | | (BEFORE CON | ITROLS / LIMITS) | (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 | | | |

| 10000000 | | | | | A some Section | | | | |
|---------------------|---------------|---------------------------|------------------|---------------------|----------------|---------------------------|----------|--|--|
| MANGANESE EMISSIONS | | ACTUAL EMISSIONS | | POTENTIAL EMISSIONS | | | | | |
| | • | (AFTER CONTROLS / LIMITS) | | (BEFORE COM | ITROLS/LIMITS) | (AFTER CONTROLS / LIMITS) | | | |
| Source | Pollutant | lb/hr | lb/yr | lb/hr | lb/yr | . lb/hr | ib/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 si | lo* 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/da | ay) | | | | | |

| | NICKEL EMISSIONS | | MISSIONS | | (POTENTIAL EMISSIONS / | | | | | |
|-----------------|------------------|---------------------------|--------------|--------------|-------------------------|---------------------------|----------|--|--|--|
| | | (AFTER CONTROLS / LIMITS) | | (BEFORE CONT | ROLS/LIMITS) / | (AFTER CONTROLS / LIMITS) | | | | |
| Source | Pollutant | lb/hr | lb/yr | lb/hr | lb/yr | lb/hr | lb/уг | | | |
| ruck mix | Nickel | 1.71E-04 | 1.50E+00 | 4.26E-04 | 3.73E+00 | 1.71E-04 | 1.50E+00 | | | |
| entral mix | Nickel | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | | | |
| ement silo | Nickel | 1.12E-06 | 9.84E-03 | 4.73E-04 | 4.14E+00 | 1.12E-06 | 9.84E-03 | | | |
| upplement silo* | Nickel | 2.02E-05 | 1.77E-01 | 2.02E-05 | 1.77E-01 | 2.02E-05 | 1.77E-01 | | | |
| OTAL | 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) | • | L., | | 0192161 | | | |

| | | | | * | | | m i ca- last |
|----------------------|---------------------------|----------|-------------|-----------------|---------------------------|---------------|--------------|
| | | | | | | | |
| PHOSPHORUS EMISSIONS | | ACTUAL E | MISSIONS | | POTENT | IAL EMISSIONS | • |
| | (AFTER CONTROLS / LIMITS) | | (BEFORE CON | TROLS / LIMITS) | (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 |

| | | NEW TOWN | | | . Girk E Bat | | | | |
|--------------------|-----------|---------------------------|----------|---------------------|-----------------|---------------------------|----------|--|--|
| SELENIUM EMISSIONS | | ACTUAL EMISSIONS | | POTENTIAL EMISSIONS | | | | | |
| | | (AFTER CONTROLS / LIMITS) | | (BEFORE CON | TROLS / LIMITS) | (AFTER CONTROLS / LIMITS) | | | |
| Source | Pollutant | lb/hr | lb/yr | lb/hr | lb/yr | lb/ħr | 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 | - 1 | - | - | - | - | - | | |
| 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 | | |

| FACILITY | Carolina Sunrock - Burlington North |
|----------|-------------------------------------|
| LOCATION | Caswell . |

I.D. NO. PERMIT NO. 1700016 10628R00 DATE BY 2/7/2020 REV. 2/18/2020 £LG

FACILITY-WIDE EMISSIONS SUMMARY

ACTUAL EMISSIONS

| SOURCE | PM | PM10 | SO ₂ | NOx | CO | VOC | Total HAP | Highest HAP |
|-----------------------------------------|--------|--------|-----------------|-------------------|-----------|------------|-----------|-----------------------|
| | ton/yr | ton/yr | ton/yr | ton/yr | ton/yr | ton/yr | lb/yr | . lb/yr |
| HMA-1 | 11.52 | 7.27 | 26.04 | 15.1 9 | 33.49 | 12.05 | 5,140.00 | 1,600.00 Formaldehyde |
| * HMA-H1 / HMA-H2 | 0.08 | 0.02 | 1.75 | 0.49 | 0.12 | 0.00 | 7.10 | 3.93 Toluene |
| RMC - Conc. Plant | 22.32 | 10.67 | 0.00 | 0.00 | 0.00 | 0.00 | 14.90 | 6.56 Manganese |
| | | | | | | | | · · |
| | | | | | | | | |
| • | | | | | | | | |
| | | | | | | • | | |
| | | | | | | • | | |
| TOTALS | 33.92 | 17.96 | 27.79 | 15.68 | 33.61 | 12.05 | 5,162.00 | 1,600.00 Formaldehyde |
| * * * * * * * * * * * * * * * * * * * * | | | | | | | 2.5810 | 0.8000 |
| | | | | | | | ton/yr | ton/yr |
| | | | | | | | | |
| | | | POTENTIAL | EMISSIONS | BEFORE CO | ONTROLS/LI | MITS | |
| SOURCE | PM | PM10 | SO ₂ | NOx | co | voc | Total HAP | Highest HAP |
| | ton/yr | ton/yr | ton/yr | ton/yr | ton/yr | ton/yr | lb/yr | lb/yr |
| HMA-H1 | 87.28 | 39.72 | 682.89 | 66.48 | 145.68 | 52.77 | 22,500.00 | 6,980.00 Formaldehyde |
| * HMA-H1 & HMA-H2 | 0.24 | 0.07 | 5.11 | 1.44 | 0.36 | 0.01 | 21.00 | 11.50 Toluene |
| RMC - Conc. Plant | 454.22 | 172.23 | 0.00 | 0.00 | 0.00 | 0.00 | 128.00 | 67.20 Manganese |
| | | | | | | | | Ü |
| | | | | | | | | |
| | | | | | | | | |
| , | | | | | | | | |
| TOTALS | 541.74 | 212.02 | 688.00 | 67.92 | 147.04 | 52.78 | 22,649.00 | 6,980.00 Formaldehyde |
| ,1017163 | 371.7 | | (39.72 + 0.0 | | 117101 | 52.70 | 11.32 | 3.49 |
| | | 70.01 | (33.72 . 0.0 | , , 0.25, | | | ton/yr | ton/yr |
| | | | | | | | (31), 31 | 2011/ }1 |
| | | , | POTENTIAL | EMISSIONS | AFTER CO | NTROLS/LIN | 1ITS | • |
| | | | | | | | | |
| SOURCE | · PM | PM10 | SO ₂ | NOx | CO | VOC | Total HAP | Highest HAP |
| | ton/yr | ton/yr | ton/yr | ton/yr | ton/yr | ton/yr | lb/yr | lb/yr |
| HMA-1 | 11.52 | 7.27 | 26.04 | 15.19 | 33.49 | 12.05 | | 1,600.00 Formaldehyde |
| * HMA-H1 & HMA-H2 | 0.24 | 0.07 | 5.11 | 1.44 | 0.36 | 0.01 | 21.00 | 11.50 Toluene |
| RMC - Conc. Plant | 22.32 | 10.67 | 0.00 | 0.00 | 0.00 | 0.00 | 14.90 | 6.56 Manganese |
| | | | | | | | | |
| | | • | | | | | | |
| 4 | | | | | | | | • |
| | | | | | | | | , |
| TOTALS | 34.08 | 18.01 | 31.15 | 16.63 | 33.85 | 12.06 | 5,175.90 | 1,600.00 Formaldehyde |
| | | | (7.27 + 0.07 | | | ·=·- • | 2.5880 | 0.8000 |
| | | 3, | (2 | , | | | ton/yr | ton/yr |
| * F N- 2 F 01 C | | | | | | | cont 41 | -3-1/ F1 |

^{*} From No. 2 Fuel Oil Combustion

ATTACHMENT E11

^{**} For Title V applicability, only emissions from the cement and fly ash storage silos after controls are considered from the Concrete Batch Plant, because the EPA considers emissions from cement/fly ash scales (weigh batchers) and truck loading operations to be fugitive and uncontrolled. In addition, the EPA considers the bagfilter for the cement and fly ash silos to be integral. Therefore, the facility does not trigger Synthetic Minor for PM10.