

PRECONSTRUCTION ANALYSIS
FOR
GRAYSON CARTER & SON, INC.
708-0036
UNIT NO. X001

Grayson Carter & Son, Inc., of Athens, AL, has applied to the ADEM - Air Division for an Air Permit which would authorize the construction and operation of a limestone crushing, screening, and conveying circuit to be located at 7440 Mooresville Rd., Belle Mina, Limestone County, AL. Grayson Carter & Son, Inc., is applying for an Air Permit for the following circuit:

X001 – 800 TPH Crushing, Screening, and Conveying Circuit with Wet Suppression
(NSPS Subpart OOO/SIP)

X001 Process Description:

Aggregate material would be fed, by front end loader, into the crushing, screening, and conveying circuit. Material would flow through the circuit where it will be distributed into different sizing stockpiles. (See flow diagram in the application.)

All equipment associated with this process is subject to either the State Implementation Plan (SIP) or the New Source Performance Standards (40 CFR Part 60, Subpart OOO-Standards of Performance for Nonmetallic Mineral Processing Plants). NSPS Subpart OOO limits visible emissions from uncontrolled crushers to 12% opacity and limits visible emissions from grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck or railcar loading stations, or from any other affected facility to 7% opacity. Wet processes are exempt from regulation by this subpart. In addition to the opacity requirements, there are periodic monitoring and testing requirements, as well as recordkeeping requirements to remain in compliance with NSPS Subpart OOO, as promulgated on April 28, 2009. Monthly inspections are required for all spray nozzles in wet suppression areas and for areas controlled by carry over moisture from upstream wet suppression. If inspections of the upstream spray nozzles are not conducted, the carryover areas will be subject to the five year interval retest requirement. All areas not controlled by wet suppression or carry over shall be required to retest every five years. Records of all periodic monitoring inspections, dates, results, and any corrective action taken shall be kept at the facility site, available for inspection and shall be retained for a minimum of five years.

Grayson Carter & Son, Inc., will be required to conduct EPA Method 9 Visible Emissions Observations on the NSPS equipment associated with this circuit. Any equipment exempt from NSPS is subject to the State Implementation Plan (SIP).

Process X001

| <i>Manufacturer</i> | <i>Type</i> | <i>Maximum Operating Capacity</i> | <i>Manufacturer's Date</i> | <i>NSPS/SIP</i> | <i>Testing?</i> |
|---------------------|----------------------------|-----------------------------------|----------------------------|-----------------|-----------------|
| | Feed Hopper A | 800 TPH | 2024 | SIP | No |
| Astec | Vibrating Grizzly Feeder B | 800 TPH | 2024 | SIP | No |
| Astec | Jaw Crusher C | 800 TPH | 2024 | NSPS | Yes |
| TCI | Conveyor C1 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Conveyor C2 | 800 TPH | 2024 | NSPS | Yes |
| Astec | Screen D | 800 TPH | 2024 | NSPS | Yes |
| TCI | Under Screen Conveyor C3 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Transfer Conveyor C4 | 500 TPH | 2024 | NSPS | Yes |
| Astec | Split Hopper E | 500 TPH | 2024 | NSPS | Yes |
| TCI | Transfer Conveyor C5 | 500 TPH | 2024 | NSPS | Yes |
| TCI | Transfer Conveyor C6 | 500 TPH | 2024 | NSPS | Yes |
| Astec | Vibrating Grizzly Feeder F | 500 TPH | 2024 | NSPS | Yes |
| Astec | Impact Crusher G | 500 TPH | 2024 | NSPS | Yes |
| TCI | Transfer Conveyor C7 | 500 TPH | 2024 | NSPS | Yes |
| Astec | Split Hopper H | 500 TPH | 2024 | NSPS | Yes |
| TCI | Transfer Conveyor C8 | 500 TPH | 2024 | NSPS | Yes |
| TCI | Transfer Conveyor C9 | 500 TPH | 2024 | NSPS | Yes |
| TCI | Transfer Conveyor C13 | 500 TPH | 2024 | NSPS | Yes |
| Astec | Screen I | 800 TPH | 2024 | NSPS | Yes |
| Astec | Screen J | 800 TPH | 2024 | NSPS | Yes |
| TCI | Under Screen Conveyor C11 | 500 TPH | 2024 | NSPS | Yes |
| TCI | Transfer Conveyor C10 | 500 TPH | 2024 | NSPS | Yes |
| TCI | Transfer Conveyor C12 | 500 TPH | 2024 | NSPS | Yes |
| TCI | Transfer Conveyor C14 | 500 TPH | 2024 | NSPS | Yes |
| Astec | Surge Bin K | 800 TPH | 2024 | NSPS | Yes |

| | | | | | |
|-------|----------------------------|---------|------|------|-----|
| Astec | Vibrating Grizzly Feeder F | 500 TPH | 2024 | NSPS | Yes |
| Astec | Cone Crusher M | 400 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS1 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS2 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS3 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS4 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS5 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS6 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS7 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS8 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS9 | 800 TPH | 2024 | NSPS | Yes |
| Astec | Wash Screen N | 800 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS10 | 800 TPH | 2024 | NSPS | Yes |
| TCI | Radial Conveyor RS11 | 800 TPH | 2024 | NSPS | Yes |

The total expected fugitive emissions rate for the proposed plant X001 would be **20.26 TPY**. There is no allowable emissions rate for fugitive or dust emissions. Therefore, the uncontrolled, controlled, and expected emission rate calculations for this circuit can be found in Appendix A. Note: these calculations are furnished as public information and used to demonstrate the effectiveness of the wet suppression systems based on emissions factors taken from an EPA approved source of emission factors. By definition, fugitive emissions from this process would not be considered in determining Prevention of Significant Deterioration (PSD) or Title V applicability.

This facility is located within 100 km of the Sipsey Class I Wilderness. The construction and operation of this plant is not anticipated to significantly impact this area.

This facility would not be considered “major” for any criteria pollutant and, therefore, would not be required to undergo the PSD process. This site would be considered a Greenfield site and Grayson Carter & Son, Inc., would be required to complete a 30-day public comment period, a joint public notice with the Water Division.

An Environmental Justice analysis was performed utilizing EPA's EJSCREEN tool and the Council on Environmental Quality's Climate and Economic Justice (Justice 40) screening tool. Due to the low emissions expected from the operations at the proposed facility, it was determined that enhanced outreach is not necessary.

Based on this information, this analysis indicates that this source would meet the requirements of all ADEM - Air Division rules and regulations. I recommend that an Air Permit be issued to Grayson Carter & Son, Inc., incorporating the provisions of Appendix B and Appendix C, the cover letter.

Emily Williams

Emily Williams
Energy Branch
Air Division

11/27/2023
Date

Appendix A
CALCULATIONS
GRAYSON CARTER & SON, INC. 708-0036
UNIT X001

X001- 800 TPH Crushing, Screening, and Conveying Circuit with Wet Suppression (NSPS Subpart OOO/SIP).

Equipment: 3 Crushers, 4 Screens, and 32 Associated Belt Conveyors (including 3 Feeders, 3 Dump Hoppers, and 1 Surge Bin)

Hours of Operation: 11 hours/day x 5.5 days/week x 50 weeks/year = 3025 hours /year

Pollution Control: Wet Suppression

Allowable Emission: There is no allowable particulate emission rate limiting fugitive emissions for any of these processes.

Uncontrolled Emissions: Emission factors taken from EPA AP-42, Table 11.19.2-2

| Source | | | Uncontrolled | | Controlled | |
|--------------------------------------------------------|------------|------------|---------------|---------------|----------------|-----------------|
| | | Units | Total PM | PM-10 | Total PM | PM-10 |
| Crushing Emission Factor | | lb/Ton | 0.0054 | 0.0024 | 0.0012 | 0.00054 |
| Capacity | 800 | TPH | | | | |
| Total (# TPH * EF# lb/Ton) | | lb/hr | 4.32 | 1.92 | 0.96 | 0.432 |
| | 8760 | hrs/yr | | | | |
| Total (#lb/hr*#hrs/yr*(1/2000)Ton/lbs) | | TPY | 18.9216 | 8.4096 | 4.2048 | 1.89216 |
| | 3025 | hrs/yr | | | | |
| Expected (#lb/hr*exp#hrs/yr*(1/2000)Ton/lbs) | | TPY | 6.534 | 2.904 | 1.452 | 0.6534 |
| | | | | | | |
| | | | | | | |
| Screening Emission Factor | | lb/Ton | 0.025 | 0.0087 | 0.0022 | 0.00074 |
| Capacity | 800 | TPH | | | | |
| Total (# TPH * EF# lb/Ton) | | lb/hr | 20 | 6.96 | 1.76 | 0.592 |
| | 8760 | hrs/yr | | | | |
| Total (#lb/hr*#hrs/yr*1/2000Ton/lbs) | | TPY | 87.6 | 30.4848 | 7.7088 | 2.59296 |
| | 3025 | hrs/yr | | | | |
| Expected (#lb/hr*exp#hrs/yr*1/2000Ton/lbs) | | TPY | 30.25 | 10.527 | 2.662 | 0.8954 |
| | | | | | | |
| | | | | | | |
| Conveying/ Transfer Point Emission Factor | | lb/Ton | 0.003 | 0.0011 | 0.00014 | 0.000046 |
| Capacity | 800 | TPH | | | | |
| Total (# TPH * EF# lb/Ton) | | lb/hr | 2.4 | 0.88 | 0.112 | 0.0368 |
| | 8760 | hrs/yr | | | | |
| Total (#lb/hr*#hrs/yr*1/2000Ton/lbs) | | TPY | 10.512 | 3.8544 | 0.49056 | 0.161184 |
| | 3025 | hrs/yr | | | | |
| Expected (#lb/hr*exp#hrs/yr*1/2000Ton/lbs) | | TPY | 3.63 | 1.331 | 0.1694 | 0.05566 |
| | | | | | | |

X001 Fugitive Emissions Summary

Total Uncontrolled Emissions:

| | |
|------------------|----------------------------------------------|
| Crushing | 18.92 TPH x 3 crushers = 56.76 TPH |
| Screening | 87.6 TPH x 4 Screens = 350.4 TPH |
| <u>Conveying</u> | <u>10.51 TPH x 32 Conveyors = 336.32 TPH</u> |
| Total | 743. 48 TPY at 8760 hrs/yr |

Total Controlled Emissions:

| | |
|------------------|--------------------------------------------|
| Crushing | 4.2 TPH x 3 crushers = 12.6 TPH |
| Screening | 7.71 TPH x 4 Screens = 30.84 TPH |
| <u>Conveying</u> | <u>0.49 TPH x 32 Conveyors = 15.68 TPH</u> |
| Total | 59.12 TPY at 8760 hrs/yr |

Expected Emissions: Based on 3025 Actual Hours of Operation and the AP-42 total particulate controlled emission factor.

| | |
|------------------|-------------------------------------------|
| Crushing | 1.45 TPH x 3 crushers = 4.35 TPH |
| Screening | 2.66 TPH x 4 Screens = 10.64 TPH |
| <u>Conveying</u> | <u>0.17 TPH x 32 Conveyors = 5.44 TPH</u> |
| Total | 20.43 TPY at 3025 hrs/yr |

Appendix B
Grayson Carter & Son, Inc.
Limestone County, Alabama
Permit No. 708-0036-X001
Provisos

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. The permittee shall keep this permit under file or on display at all times at the site where the facility for which the permit is issued is located and shall make the permit readily available for inspection by any or all persons who may request to see it.
5. All air pollution control equipment shall be operated at all times while this process is operational. In the event of scheduled maintenance, unscheduled maintenance, or a breakdown of the pollution control equipment, the process shall be shut down as expeditiously as possible (unless this act and subsequent re-start would clearly cause greater emissions than continuing operations of the process for a short period). The Department shall be notified of all such events that exceed **1 hour within 24 hours**. The notification shall include all pertinent facts, including the duration of the process operating without the control device and the level of excess emissions which have occurred. Records of all such events, regardless of reporting requirements, shall be made and maintained for a period of five years. These records shall be available for inspection.
6. This process, including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
7. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
8. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction

Permit No.: 708-0036-X001

and/or operation without authorization could result in revocation of this permit.

9. Prior to a date to be specified by the Chief of the Air Division in the authorization to operate, emission tests are to be conducted by persons familiar with and using the EPA Sampling Train and Test Procedure as described in the Code of Federal Regulations, Title 40, Part 60, for the following pollutants. Written tests results are to be reported to the Air Division within 15 working days of completion of testing.

| | | | |
|----------------------------|-----|-------------------|-----|
| Particulates | () | Carbon Monoxide | () |
| Sulfur Dioxide | () | Nitrogen Oxides | () |
| Volatile Organic Compounds | () | Visible Emissions | (X) |

10. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
11. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
12. Nothing in this permit or conditions thereto shall negate any authority granted to the Department pursuant to the Alabama Environmental Management Act or regulations issued thereunder.
13. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
14. The Air Division must be notified in writing at least 10 working days in advance of all emission tests to be conducted and submitted as proof of compliance with the Department's air pollution control rules and regulations.

To avoid problems concerning testing methods and procedures, the following shall be included with the notification letter:

- (a) The date the test crew is expected to arrive, the date and time anticipated of the start of the first run, how many and which sources are to be tested, and the names of the persons and/or testing company that will conduct the tests.
- (b) A complete description of each sampling train to be used, including type of media used in determining gas stream components, type of probe lining, type of filter media, and probe cleaning method and solvent to be used (if test procedure requires probe cleaning).

Permit No.: 708-0036-X001

- (c) A description of the process(es) to be tested, including the feed rate, any operating parameter used to control or influence the operations, and the rated capacity.
- (d) A sketch or sketches showing sampling point locations and their relative positions to the nearest upstream and downstream gas flow disturbances.

A pretest meeting may be held at the request of the source owner or the Department. The necessity for such a meeting and the required attendees will be determined on a case-by-case basis. All test reports must be submitted to the Air Division within 15 days of the actual completion of the test, unless an extension of time is specifically approved by the Air Division.

- 15. Precautions to prevent fugitive dust shall be taken so that provisions of the Department's rules and regulations shall not be violated.
- 16. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.

Plant or haul roads and grounds shall be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:

- (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
- (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
- (c) by paving;
- (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;

Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.

- 17. If this plant relocates to another site, this plant's Air Permit remains valid for this site unless or until it is revoked for failure to comply with ADEM Air Division Rules and Regulations. The owner or operator of this plant must provide written notification of the intent to relocate the plant to this site at least two weeks in advance. The written notification should include the planned construction beginning date and the projected startup date.

Permit No.: 708-0036-X001

Failure to provide this written notification is a violation of this permit condition and is grounds for revocation of this permit.

18. Any performance tests required shall be conducted and data reduced in accordance with the test methods and procedures contained in each specific permit condition unless the Director (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method, the results of which he has determined to be adequate for indicating whether a specific source is in compliance.
19. All equipment associated with this process is subject to either the State Implementation Plan (SIP) or the New Source Performance Standards (40 CFR Part 60, Subpart OOO- Standards of Performance for Nonmetallic Mineral Processing Plants). This NSPS limits fugitive emissions from uncontrolled crushers to 12% opacity, and fugitive emissions from grinding mills, screening operations, bucket elevators, transfer points on belt conveyors, bagging operations, storage bins, enclosed truck or railcar loading stations, or from any other affected facility to 7 % opacity. This NSPS allows no emissions from wet screening operations.
20. Compliance with the opacity standards for sources subject to NSPS-Subpart OOO will be determined by conducting visible emission observations in accordance with EPA Reference Method 9 (40 CFR Part 60, Appendix A-4). When determining compliance with the fugitive emissions standard for grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins and enclosed truck and railcar loading stations or from any other affected facility of this circuit, the duration of the Method 9 observations are required to be 30 minutes or five six-minute averages. No more than 3 points may be tested concurrently by the same observer. The specified criteria of NSPS - Subpart OOO must be met.

The required performance testing will be conducted within 60 days of the source achieving maximum production rate but no later than 180 days of initial start-up of the facility. The test reports will be submitted to the Department within 15 days of the test date.

21. Recordkeeping is required for all monthly periodic monitoring inspections. Records shall be kept on the facility site, either in a handwritten logbook or in an electronic version suitable for inspection upon request by Air Division inspectors and will be retained for at least five (5) years following the date of the inspection. Records of the inspection date, results, and any corrective action taken shall be recorded. In addition, if wet suppression is not utilized during the inspection, any other control method used should be recorded or circumstances shall be noted.

Permit No.: 708-0036-X001

22. Periodic monitoring is required for all affected facilities controlled by direct wet suppression and/or water carryover. Each spray nozzle shall be examined monthly to assure water is appropriately supplied to the nozzle and that the water is sprayed from the nozzle correctly. Any corrective action indicated shall be taken within 24 hours of the inspection and completed as expeditiously as possible.
23. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
24. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.
25. Precautions shall be taken by the permittee and its personnel to ensure that no person shall ignite, cause to be ignited, permit to be ignited, or maintain any open fire in such a manner as to cause the Department's rules and regulations applicable to open burning to be violated.
26. Should this facility, at any time, exceed the limits set forth in this permit, this Department must be notified within ten (10) days of the exceedance.

Date



AIR PERMIT

PERMITTEE: GRAYSON CARTER & SON CONTRACTING, INC.
FACILITY NAME: BELLE MINA QUARRY
LOCATION: BELLE MINA, ALABAMA

| <u>PERMIT NUMBER</u> | <u>DESCRIPTION OF EQUIPMENT, ARTICLE OR DEVICE</u> |
|----------------------|------------------------------------------------------------------------------------------------|
| 708-0036-X001 | 800 TPH Crushing, Screening, and Conveying Circuit with Wet Suppression (NSPS Subpart OOO/SIP) |

In accordance with and subject to the provisions of the Alabama Air Pollution Control Act of 1971, Ala. Code §§ 22-28-1 to 22-28-23, as amended, the Alabama Environmental Management Act, Ala. Code §§ 22-22A-1 to 22-22A-17, as amended, and rules and regulations adopted there under, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to construct, install and use the equipment, device or other article described above.

ISSUANCE DATE: [Date]



Appendix C

[Date]

Mr. Halston Carter
Grayson Carter & Son Contracting, Inc.
146 Roy Long Road W
Athens, AL 35611

Dear Mr. Carter:

**RE: Facility No. 708-0036
Unit X001**

The enclosed Air Permit is issued pursuant to the Department's air pollution control rules and regulations. Please note the conditions (provisions) which must be met in order to retain this Air Permit.

New sources of air pollution receiving approval by an Air Permit must notify the Chief of the Air Division upon completion of construction and prior to operation. Authorization to Operate must then be received from the Chief of the Air Division. Failure to notify the Chief of the Air Division upon completion of construction and/or operation without authorization can result in the revocation of the Air Permit.

Upon receiving the enclosed Air Permit, please review **all** of the provisions.

Should you have any questions or if clarification of permit conditions is required, please do not hesitate to contact Emily Williams at (334) 270-5681 in Montgomery.

Sincerely,

Ronald W. Gore, Chief
Air Division

RWG/eww

Enclosures



CHECKLIST FOR ISSUANCE OF PERMITS

Permit No. 708-0036-X001 Type: Air

Company Grayson Carter & Son Contracting, Inc.

Location Belle Mina (Limestone County)

Description of Permit Unit: X001 – 800 TPH Crushing, Screening, and Conveying Circuit with Wet Suppression (NSPS Subpart OOO/SIP)

Pollutant Type:

| | | | | | |
|-----------------|-----------|----------------------|-----------|------------------|-----------|
| Particulates | 01 | Nitrogen Oxides | 05 | Chlorine | 09 |
| Sulfur Oxides | 02 | Total Reduced Sulfur | 06 | Hydrogen Sulfide | 10 |
| Carbon Monoxide | 03 | Asbestos | 07 | Lead | 11 |
| Hydrocarbons | 04 | Beryllium | 08 | Mercury | 12 |

| Pollutant Type | Reported Emissions lb/hr | Method Of Estimate | Uncontrolled Emissions lb/hr | Controlled Emissions lb/hr | Allowable Emissions lb/hr |
|-------------------------------------|--------------------------|--------------------|------------------------------|----------------------------|---------------------------|
| See Preconstruction Analysis | | | | | |

Operating Hours Per Year: 3,025

Provisos: See Preconstruction Analysis

Mail To: _____
Mr. Halston Carter
Grayson Carter & Son Contracting, Inc.
146 Roy Long Rd W
Athens, AL 35611

Engineer: E. Williams
 Date: _____

Type: PSD _____ SMS _____ NAME _____ MOD _____ TEMP _____ OTHER X
 Source: NSPS X NESHAP _____ SIP X OTHER _____