

## Air Permit Review

**Permit Issue Date:** *(Insert Issue Date)*

**Region:** Asheville Regional Office  
**County:** Rutherford  
**NC Facility ID:** 8100212  
**Inspector's Name:** NA  
**Date of Last Inspection:** NA  
**Compliance Code:** NA

<b>Facility Data</b>			<b>Permit Applicability (this application only)</b>
<b>Applicant (Facility's Name):</b> Long Branch Partners, LLC - Henrietta Quarry  <b>Facility Address:</b> Long Branch Partners, LLC - Henrietta Quarry <i>(Insert Street Address)</i> Henrietta, NC 28076  <b>SIC:</b> 1423 / Crushed And Broken Granite <b>NAICS:</b> 212313 / Crushed and Broken Granite Mining and Quarrying  <b>Facility Classification: Before:</b> NA <b>After:</b> Small <b>Fee Classification: Before:</b> NA <b>After:</b> Small			<b>SIP:</b> Yes <b>NSPS:</b> Yes, Subpart OOO <b>NESHAP:</b> No <b>PSD:</b> No <b>PSD Avoidance:</b> No <b>NC Toxics:</b> No <b>112(r):</b> No <b>Other:</b> No
<b>Contact Data</b>			<b>Application Data</b>
<b>Facility Contact</b>	<b>Authorized Contact</b>	<b>Technical Contact</b>	<b>Application Number:</b> 8100212.05A <b>Date Received:</b> 07/15/2005 <b>Application Type:</b> Greenfield Facility <b>Application Schedule:</b> State <b>Existing Permit Data</b> <b>Existing Permit Number:</b> NA <b>Existing Permit Issue Date:</b> NA <b>Existing Permit Expiration Date:</b> NA
Richard Magahey Vice President & COO (706) 867-6101 315 Red Oak Flats Road Dahlonega GA, 30533	Richard Magahey Vice President & COO (706) 867-6101 315 Red Oak Flats Road Dahlonega GA, 30533	Richard Magahey Vice President & COO (706) 867-6101 315 Red Oak Flats Road Dahlonega GA, 30533	
<b>Review Engineer:</b> Christopher Scott  <b>Review Engineer's Signature:</b> _____ <b>Date:</b> _____		<b>Comments / Recommendations:</b> <b>Issue:</b> 09545R00 <b>Permit Issue Date:</b> <i>(Insert Issue Date)</i> <b>Permit Expiration Date:</b> <i>(Insert Appropriate Date)</i>	

**1. Purpose of Application:**

Application made for construction and operation of a new native granite quarry and processing plant. The facility will be permitted for the following equipment:

Emission Source ID	Emission Source Description	Control System ID	Control System Description
One non-metallic mineral processing plant (2,160 tons per hour primary crushing capacity including grizzly by-pass, utilizing water suppression with no other control devices)			
ES-Crush	Crushing Operations	N/A	N/A
ES-Screen	Screening Operations	N/A	N/A
ES-Convey	Conveying Operations	N/A	N/A

**2. Application Chronology:**

June 8, 2005      Letter from Brooks and Medlock Engineering to Rutherford County Zoning Administrator requesting zoning consistency determination for the land on which the proposed quarry is to be located.

- July 13, 2005      DAQ letter issued acknowledging completed review of Dispersion Modeling Protocol for proposed quarry at Henrietta. Note that this modeling did not include data describing PM emissions from the operation of the proposed asphalt plant.
- July 19, 2005      DAQ received letter form Rutherford County stating that the proposed site of the quarry at Henrietta is not zoned
- July 28, 2005      DAQ received the initial permit application for Long Branch Partners, LLC; Air Quality Permit Application 8100212.05A
- August 23, 2005    DAQ received electronic copy of revised PM dispersion modeling analysis (1st revision of 2)
- September 15, 2005 DAQ received revised PM dispersion modeling analysis (2nd revision of 2)
- November 8, 2005   DAQ memo issued acknowledging completed review of Dispersion Modeling Protocol for proposed quarry and asphalt plant at Henrietta
- November 9, 2005   DAQ received technical information regarding the Jaw Crusher and grizzly feed for the proposed quarry at Henrietta. The application was considered complete with the receipt of this information.

**3. Regulatory Review**

The Company must comply with the following EMC Regulations for this application:

- 15A NCAC 2D .0409,"PM<sub>10</sub> Particulate Matter";
- 15A NCAC 2D .0510,"Particulates from Sand, Gravel, or Crushed Stone Operations";
- 15A NCAC 2D .0521,"Control of Visible Emissions";
- 15A NCAC 2D .0524,"New Source Performance Standards";
- 15A NCAC 2D .0535,"Excess Emissions Reporting and Malfunctions"; and
- 15A NCAC 2D .0540,"Particulates from Fugitive Non-process Dust Emission Sources".

**4. Compliance Determination**

According to information submitted to the DAQ by Richard Magahey on November 9, 2005, the maximum capacity of the primary crusher is 2,160 tons per hour at a jaw setting of 14 inches (this includes an estimated 940 tons per hour of crusher bypass material).

The plant is not expected to operate diesel generators. The following tables lists descriptions of specific equipment using information submitted in the application. All equipment is subject to NSPS, Subpart OOO. None of the equipment has been tested.

<b>Equipment list</b>				
Equipment Description	ID No.	Size/Capacity	Mfg Date	NSPS
<b>Crushers</b>				
20' x 20' Rock Hopper Stockpile	DH1	1200 tons/hr	TBD	Yes
60" x 10' Vibrating Grizzly Feeder	FD1	1200 tons/hr	TBD	Yes
42" x 48" Primary Crusher	JAW	1220 tons/hr	TBD	Yes
Cone Crusher	CC1	750 tons/hr	TBD	Yes
Cone Crusher	CC3	300 tons/hr	TBD	Yes
Cone Crusher	CC4	300 tons/hr	TBD	Yes

<b>Screens</b>				
Triple Deck Scalping Screen	SS1	6' x 20'	TBD	Yes
Double Deck Scalping Screen	SS2	6' x 20'	TBD	Yes
Triple Deck Dry Screen	DS3	6' x 16'	TBD	Yes
Triple Deck Dry Screen	DS4	6' x 16'	TBD	Yes
Triple Deck Wash Screen	WS5	6' x 16'	TBD	Yes
Triple Deck Wash Screen	WS6	6' x 16'	TBD	Yes
<b>Conveyors</b>				
Belt Conveyor	C1A	42" x 42'	TBD	Yes
Belt Conveyor	C1B	42" x 150'	TBD	Yes
Belt Conveyor	C2	36" x 52'	TBD	Yes
Belt Conveyor	C3	36" x 120'	TBD	Yes
Belt Conveyor	C4	42" x 200'	TBD	Yes
Belt Conveyor	C6	36" x 140'	TBD	Yes
Belt Conveyor	C7	30" x 161'	TBD	Yes
Belt Conveyor	C8	36" x 149'	TBD	Yes
Belt Conveyor	C10	30" x 113'	TBD	Yes
Belt Conveyor (wet)	C12	36" x 20'	TBD	Yes
Belt Conveyor (wet)	C13	24" x 147'	TBD	Yes
Belt Conveyor	C14	24" x 124'	TBD	Yes
Belt Conveyor (wet)	C15	24" x 125'	TBD	Yes
Belt Conveyor (wet)	C16	24" x 22'	TBD	Yes
Belt Conveyor (wet)	C17	30" x 150'	TBD	Yes
Belt Conveyor	C18	42" x 310'	TBD	Yes
Belt Conveyor	C19	42" x 430'	TBD	Yes
Belt Conveyor	C21	36" x 40'	TBD	Yes
Belt Conveyor	C22	42" x 108'	TBD	Yes
Belt Conveyor	C23	42" x 70'	TBD	Yes
Belt Conveyor	C24	36" x 100'	TBD	Yes
Belt Conveyor	C25	36" x 241'	TBD	Yes
Belt Conveyor	C26	30" x 50'	TBD	Yes
Belt Conveyor	C27	36" x 150'	TBD	Yes
Belt Conveyor	C28	42" x 40'	TBD	Yes
Belt Conveyor	C29	42" x 155'	TBD	Yes
Belt Conveyor	C30	30" x 20'	TBD	Yes
Belt Conveyor	C31	36" x 125'	TBD	Yes
Belt Conveyor	C33	36" x 70'	TBD	Yes
Belt Conveyor	C34	36" x 150'	TBD	Yes
Belt Conveyor (wet)	C35	24" x 125'	TBD	Yes
<b>Miscellaneous Equipment</b>				
Surge 1 Feeder A	S1FA	Seco Feeder	TBD	Yes
Surge 1 Feeder B	S1FB	Seco Feeder	TBD	Yes
Surge 2 Feeder A	S2FA	FMC Feeder	TBD	Yes
Surge 2 Feeder B	S2FB	FMC Feeder	TBD	Yes
Bin	B1		TBD	Yes
Bin	B2		TBD	Yes
Flop Gate	FG1		TBD	N/A
Sand Screw	Screw 1		TBD	N/A

2D .0409 - PM<sub>10</sub> Particulate Matter - This regulation requires the Permittee to comply with the 24-hour and annual ambient air quality standards. DAQ has reviewed dispersion modeling analysis conducted by HRP Associates, Inc. (consultant to Long Branch Partners). In a memorandum from Tom Anderson, a Meteorologist with AQAB, it was stated that the modeling adequately demonstrated compliance with TSP and PM<sub>10</sub> emission limits for North Carolina National Ambient Air Quality Standards, on a source-by-sources basis. Compliance with 2D. 0409 is expected.

2D .0510 - Particulates from Sand, Gravel, or Crushed Stone Operations - This regulation requires that all fugitive process dust emissions from crushers, conveyors, screens and transfer points be reduced to a minimum. Water sprays are required on crushers to aid in the control of particulate emissions. Compliance is expected and will be confirmed by inspection.

2D .0521 - Control of Visible Emissions - In order to comply with 2D .0521, the visible emissions from the facility shall not be more than 40 percent opacity when averaged over a six-minute period except that six-minute periods averaging not more than 87 percent opacity may occur not more than once in any hour nor more than four times in any 24-hour period for sources manufactured as of July 1, 1971. For sources at the facility manufactured after July 1, 1971, visible emissions shall not be more than 20 percent opacity when averaged over a six-minute period except that six-minute periods averaging not more than 87 percent opacity may occur not more than once in any hour nor more than four times in any 24-hour period. It is expected that all equipment at this facility will be new at the time of installation and construction, and all rock crushing equipment (crushers screens and belt conveyors) is subject to NSPS, Subpart OOO (ref. Permit Application dated June 27, 2005). Compliance with NSPS standards implies compliance with 2D .0521.

2D .0524 - New Source Performance Standards, Subpart OOO - This regulation applies to equipment manufactured after August 31, 1983, and stipulates that fugitive emissions from crushers may not exceed 15% opacity, that any transfer point on belt conveyors or any other affected facility must not exceed 10% opacity, and that wet processes may not exceed 0%. Because all equipment at this facility will be new at the time of installation and construction, all rock crushing equipment (crushers screens and belt conveyors) is subject to regulation under NSPS, Subpart OOO (ref. Permit Application dated June 27, 2005). This rule will require the Permittee to submit a construction notification within 30 days after the date of action, a startup notification within 15 days after the date of action, and conduct testing under EPA Reference Methods, contained in 40 CFR 60, Appendix A (Method 9) within 60 days after achieving the maximum production rate at which the facility will be operated, but not later than 180 days after the initial start-up of the affected facility. Compliance with 2D .0524 is expected.

2D .0535 - Excess Emissions Reporting and Malfunctions - This regulation requires timely reporting and appropriate actions during periods of excess emissions and malfunctions. The requirements of this regulation will be incorporated into the air permit.

2D .0540 - Particulates from Fugitive Non-process Dust Emission Sources - This is a complaint driven regulation designed to control non-process fugitive particulate emissions from areas such as process areas, haul roads, and stockpiles. If two substantive complaints of non-process fugitive particulate emissions are received within a 12-month period concerning the facility, the facility is required to write and implement a non-process fugitive particulate emissions control plan. Water sprays will aid in the control of fugitive emissions. Compliance with 2D .0540 is expected. This is a new facility (not operated yet) and thus no complaints have been received.

Zoning Review - In accordance with the requirements of the permit application procedure, Brooks and Medlock (consultant to Long Branch Partners) requested a zoning consistency statement on behalf of Long Branch Partners in a letter to the Rutherford County Zoning Administrator dated June 8, 2005. The letter included the air quality permit application and maps of the proposed quarry location. A copy of the response from Rutherford County Inspection and Planning Department was received by ARO on July 19, 2005. The response indicates that the site of the proposed facility is not a zoned area, however it states that the property is subject to the Rutherford County Watershed Protection Ordinance.

Public Notice in Areas Without Zoning - In accordance with the requirements of 2Q .0113, Brooks and Medlock (consultant to Long Branch Partners) submitted proof of compliance with public notification requirements on behalf of Long Branch Partners. This included pictures of signs posted at each of two accesses to the property and a copy of the notice that appeared in The Daily Courier (a newspaper of general circulation in Forest City, NC) on June 22, 2004. Mr. Troy Harrison and I visited the area of the proposed quarry and verified that the signs appeared to meet the requirements of this rule.

**5. NSPS, NESHAPS, PSD, Toxics and 112(r) and Attainment Status:**

The facility is not subject to the requirements of NESHAPS/MACT, Toxics or 112(r). Based on this facility's potential emissions shown below, this facility is not a PSD major source. The application submitted by the Permittee indicates that all equipment is "new" and identifies the manufacture date is yet to be determined. As such, all rock crushing equipment is subject to NSPS, Subpart OOO. See discussion in "Compliance Determination", regarding rule 15A NCAC 2D .0524.

**6. Facility Compliance Status:**

This is a new facility and has no inspection history.

**7. Facility Emissions Review:**

According to information submitted to the DAQ by Richard Magahey on November 9, 2005, the maximum capacity of the primary crusher is 2,160 tons per hour at a jaw setting of 14 inches (this includes an estimated 940 tons per hour of crusher bypass material). Based on the potential emissions shown below, this facility is classified as a small facility.

**Facility Emissions Summary**

The following table summarizes potential emissions. Detailed calculations follow.

<b>Pollutant</b>	<b>Potential Emissions w/ wet suppression</b>	<b>Potential Emissions w/o wet suppression</b>
TSP	124.22 tons	1,691.31 tons
PM <sub>10</sub>	42.43 tons	607.34 tons

**Potential Particulate Matter (PM) Emissions from the Aggregate Crushing**

**PM Emissions from the Aggregate Jaw Crusher**

The permit application identifies the one jaw crusher capable of processing 1,220 tons/hour of material to be operated at the permanent plant. Note that this is the maximum process capacity of the primary crushing operation (2,160 tons per hour), minus the estimated material bypass (940 tons per hour). AP-42 does not currently define an emission factor for particulate from primary crushing operations. In lieu of this data, the emission factor for uncontrolled emissions from primary crushing listed in the previously issued Chapter 11.19 of AP-42 (dated January 1995) will be used. To be conservative, all PM is assumed PM<sub>10</sub>. The following calculations estimate annual uncontrolled PM and PM<sub>10</sub> emissions from the plant crushing operation assuming a material flow-rate of 1,220 tons per hour and assuming a potential annual operating time of 8760 hours. Uncontrolled emissions assume no water spray.

$$0.00070 \text{ lb/ton} * 1,220 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/} 2000 \text{ lbs} = 3.74 \text{ tpy (PM/PM}_{10}\text{)}$$

Controlled potential emissions are estimated using the emission factor for PM<sub>10</sub> from controlled primary crushing, then multiplying the estimated PM<sub>10</sub> emissions by 2.1. Controlled emissions assume water spray is used.

$$0.000067 \text{ lb/ton} * 1,220 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/} 2000 \text{ lbs} = 0.36 \text{ tpy (PM}_{10}\text{)}$$

$$0.36 \text{ tpy PM}_{10} * 2.1 = 0.75 \text{ tpy (PM)}$$

#### PM Emissions from the Aggregate Cone Crushers

The permit application identifies the three standard cone crushers. One capable of processing 750 tons/hour of material and the other two capable of processing 300 tons per hour each. AP-42 does not currently define an emission factor for particulate from secondary crushing operations. In lieu of this data, the emission factor for PM<sub>10</sub> from tertiary crushing can be used as an upper limit for secondary crushing. The following calculations estimate uncontrolled PM and PM<sub>10</sub> emissions from the crushing operation assuming a combined material flow-rate of 1,350 tons per hour and assuming a potential annual operating time of 8760 hours. Uncontrolled emissions assume no water spray.

$$0.0054 \text{ lb/ton} * 1,350 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/} 2000 \text{ lbs} = 31.93 \text{ tpy (PM)}$$

$$0.0024 \text{ lb/ton} * 1,350 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/} 2000 \text{ lbs} = 14.19 \text{ tpy (PM}_{10}\text{)}$$

The potential annual particulate emissions from the controlled crushing operation are estimated using emission factors for PM and PM<sub>10</sub> from AP 42 Table 11.19.2-2 for controlled tertiary crushing. Controlled emissions assume water spray is used.

$$0.0012 \text{ lb/ton} * 1,350 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/} 2000 \text{ lbs} = 7.10 \text{ tpy (PM)}$$

$$0.00054 \text{ lb/ton} * 1,350 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/} 2000 \text{ lbs} = 3.19 \text{ tpy (PM}_{10}\text{)}$$

#### PM Emissions from the Aggregate Screening Operations

The permit application identifies two scalping screens, two dry screens and two wash screens to be operated at the facility. The wash screens are considered wet processes and emissions from the remaining screens are to be controlled with water sprays. The AP-42 emission factors for particulate emissions from screening operations are 0.025 lb/ton and 0.0087 lb/ton for PM and PM<sub>10</sub> respectively. The following calculations estimate uncontrolled PM and PM<sub>10</sub> emissions from the screening operations assuming the maximum possible material flow-rate of 2,160 tons per hour and assuming a potential annual operating time of 8760 hours. Uncontrolled emissions assume no water spray.

$$4 \text{ screens (} 0.025 \text{ lb/ton} * 2,160 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/} 2000 \text{ lbs)} = 946.08 \text{ tpy (PM)}$$

$$4 \text{ screens (} 0.0087 \text{ lb/ton} * 2,160 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/} 2000 \text{ lbs)} = 329.24 \text{ tpy (PM}_{10}\text{)}$$

The annual particulate emissions from the controlled screening operations are estimated using emission factors for PM and PM<sub>10</sub> from AP 42 Table 11.19.2-2 from controlled screening operations. Controlled emissions assume water spray is used.

$$4 \text{ screens (} 0.0022 \text{ lb/ton} * 2,160 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/} 2000 \text{ lbs)} = 83.26 \text{ tpy (PM)}$$

4 screens  $(0.00074 \text{ lb/ton} * 2,160 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/ 2000 lbs}) = 28.00 \text{ tpy (PM}_{10})$

#### PM Emissions from the Aggregate Conveyor Transfer Points

The permit application identifies the 31 conveyor belts to be operated at the facility. The application identifies 6 belts associated with wet processes and the other 25 are to be controlled by water sprays. The AP-42 emission factors for PM and PM<sub>10</sub> emissions from uncontrolled transfer points are 0.0030 lb/ton and 0.0011 lb/ton, respectively. For the purposes of calculating potential annual particulate emissions, the facility is assumed to operate 25 uncontrolled (dry) transfer points, each handling 2,160 tph of material for 8760 hrs/yr.

25 belts  $(0.0030 \text{ lb/ton} * 2,160 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/ 2000 lbs}) = 709.56 \text{ tpy (PM)}$

25 belts  $(0.0011 \text{ lb/ton} * 2,160 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/ 2000 lbs}) = 260.17 \text{ tpy (PM}_{10})$

Annual particulate emissions from controlled (wet) conveyor transfer points are estimated using emission factors for PM and PM<sub>10</sub> from AP 42 Table 11.19.2-2 from controlled conveyor transfer points. Controlled emissions assume water spray is used.

25 belts  $(0.00014 \text{ lb/ton} * 1,770 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/ 2000 lbs}) = 33.11 \text{ tpy (PM)}$

25 belts  $(0.000046 \text{ lb/ton} * 1,770 \text{ tph} * 8760 \text{ hrs/yr} * 1 \text{ ton/ 2000 lbs}) = 10.88 \text{ tpy (PM}_{10})$

#### 8. Stipulation Review:

DAQ recommends the issuance of Air Quality Permit 09545R00 for the operation of a new native granite quarry and processing plant.

#### 9. Conclusions, Comments, and Recommendations:

I checked the NC Secretary of State Webpage on November 1, 2005 and verified that Long Branch Partners, LLC, is registered as a North Carolina corporate entity. ARO recommends the issuance of Air Quality Permit No. 09545R00 to Long Branch Partners, LLC, in Rutherford County, North Carolina.