

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Southwest Regional Office

MEMO

TO Air Quality Permit File **PA-65-01128A**

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THROUGH **Edward F. Orris, P.E./EFO** **Mark R. Gorog, P.E./MRG**
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DATE December 23, 2021

RE Review of Plan Approval Application
Ligonier Stone & Lime Co., Inc.
SMT-East Non-Coal Surface Mine
Derry Township Westmoreland County
AUTH # 1369726; APS # 1047868; PFID # 852399

INTRODUCTION:

On September 3, 2021, the Department received a plan approval application from Earthtech, Inc. on behalf of Ligonier Stone & Lime Company (Ligonier Stone) for the SMT East Surface Mine (Mine Permit #65210301) to allow the installation and operation of a stationary stone aggregate processing facility. The site is located in Derry Township, Westmoreland County. On September 20, 2021, the plan approval application was determined to be administratively complete and a letter was sent to the applicant. On November 30, 2021, additional technical information was requested on November 30, 2021, and all the requested information was received on December 23, 2021.

BACKGROUND:

The Ligonier Stone facility will process limestone and sandstone, mined at SMT East quarry into marketable products for use at construction projects in the local area. The access road to the processing facility is a township road, Limestone Drive which is west of S.R. 217 and north of Torrance Road at latitude 40°24'49" and longitude -79°16'20". The mining permit application is currently being reviewed by the Department's mining program.

There will be two (2) processing plants at this facility: Primary Plant and Secondary Plant. The primary plant will consist of a jaw crusher and a screen followed by a secondary plant which includes cone crushing, secondary cone crushing for oversized material and screening (dry and wet). The primary plant will produce 2A, #3's and #1's whereas the secondary plant will produce washed sand, washed 1B, and washed 2B aggregates. Initially, the operator will generate approximately 1.0 million tons/year and will increase up to 2.1 million tons/year. Per applicant's email dated December 13, 2021, the facility will limit their emissions with a material throughput limit of 2,100,000 tpy (750 tph x 2,800 hours per year) at this time. It is noted that most of the processed raw stone will be originated from SMT-East or SMT quarries.

Large rock trucks will deliver the unprocessed rock from the on-site permitted large non-coal mine site and will dump into a hopper or when necessary a front-end-loader will feed unprocessed rock into the hopper. The applicant has noted that a minimum drop height will be maintained to load the hopper. The processed product material will be placed into conical shaped stockpiles to minimize surface area. The stone will drop from radial stacking conveyors to minimize drop heights. Water sprays will be used on as needed basis to minimize the fugitive dust from the stockpiles.

The applicant, has proposed ten (10) stockpiles of distinct sized product material which would include: 2A, #3's, #1's, R4's, AASHATO-10/antiskid, AASHATO-8/PennDOT 1B,s, AASHTO-57/PennDOT 2B's, Washed 57's/2B, Washed 8's/1B's and Sand/PennDOT Type #3. All of product material will be shipped off site by trucks. A front-end-loader will be used to load over-the-road trucks. There will be no railroad operations for this facility. It is estimated at 457 trucks per day could potentially be hauled out from the facility. The hours of operation will be 14 hours/day and 200 days per year i.e. 2,800 hours per year. According to e-mail dated December 13, 2021, Ligonier Stone & Lime is proposing to pave the haul road from the permit line at the existing cul-de-sac to just beyond the scale house shown on the provided mapping. The length of road paved will be over 500 feet. The paved portion of the haul road will be controlled with water sprays and swept with a road sweeper when necessary. The remainder of the haul road on the processing pad will be lined with stone and controlled with water sprays. Calculations for the updated haul road layout is provided with this submission.

The plant will be capable of processing 750 tons of material per hour for approximately 2,800 hours per year. It is estimated that 15 trucks per hour will provide raw material to achieve processing rate of 750 tons/hr. Signs will be posted directing drivers to use suitable cover tarps and facility speed limit restrictions. The use of radio communication will enforce these restrictions. The processing facility will operate on electricity supplied from the electric utility grid. The primary and secondary plants are separated by a surge tunnel with two pan feeders. According to the applicant's email dated December 17, 2021, Surge Tunnel is a way to transfer stockpiled aggregate using a tunnel (usually large diameter corrugated pipe or concrete) with a conveyor running inside of it. The initial portion of the conveyor is inside and protected by the corrugated pipe from the aggregate material stockpiled over the top of the "tunnel". The stockpiled aggregate gravity feeds into a hopper, which feeds onto a conveyor. The conveyor belt lifts the aggregate through the pipe to the next processing unit, usually a crusher. It eliminates the use of a front-end loader and provides for a more uniform loading of material to the downstream processing units. Upon having a sufficient "surge" stockpile, it would allow an operator to complete secondary processing even when primary processing (crusher/screen) is not up and running.

It is submitted that each major component has the capability to control fugitive particulate emissions with water sprays. Based on the design of the hopper, crushers, and screens, they would be described as partially enclosed; however, they will not be fully enclosed by a building. According to the flow diagram, the process line will be transferred into a dump truck hopper at the rate of 750 tph. The hopper will size the material with the undersize approximately 450 tph by passing the jaw crusher (CR-1) and then conveyed to a triple-deck screen (SCR-1). The material passing through the three-deck screen will be conveyed to the secondary plant. The material passing through the two-deck screen, 50% will be conveyed to the #3's stockpile at 62 tph and rest 50% will be dropped @ 62 tph and conveyed to the surge tunnel for further processing in the secondary plant. The material passing through a single deck, 25% will be conveyed to the #1's stockpile @ 47 tph and remaining material @ 141 tph will be mixed with oversized material that will be transferred to surge tunnel pile @ 423 tph. The facility will have the option to produce R4 size material by creating a separate stockpile from the surge tunnel stockpile. The material of surge stockpile will be transferred to the secondary plant by two pan feeders onto the C-11 conveyor that will conveyed to a cone crusher CR-2. The cone crusher will further reduce the size of the stone and

will be conveyed to a splitter (SPL-1) which can feed either to a triple-deck dry screen (SCR-2) or a wash plant screen.

The material passing through all three decks will be conveyed to the AASHTO-10/antiskid stockpile (107 tph). The material passing through two decks will be conveyed to the AASHTO-8/PennDOT 1B stockpile (119 tph). The material passing through a single deck will be conveyed to the AASHTO-57/PennDOT 2B stockpile (197 tph), or it can be transferred onto a conveyor with oversized material from SCR-2 per market demand. The oversized material (176 tph) is recirculated by conveyor to another cone crusher (CR-3) for the purpose of reducing the size of the stone before passing back through SCR-2.

The wash plant will produce the following stone products:

- Washed 57 (2B)
- Washed 8's (1B); and
- Washed Sand (PennDOT Type B #3 for bituminous concrete).

The oversize material from wash plant screen (SCR-3) will be dropped onto the conveyor recirculating the larger material back to the cone crusher (CR-3). The wash plant will have a sand wash plant with a retention/sedimentation pond and associated water source to make-up water lost during the washing process.

The applicant has noted that the particulate emissions will be controlled by water sprays installed at various locations throughout the processing facility and with a water spray truck equipped with a pressurized spray bar for the haul roads and stockpiles. The water controls will be used when necessary so that particulate matter/dust does not leave the property.

Emergency Generator:

Currently the applicant has no plans for an emergency generator. If an emergency generator is determined to be necessary in the future to power the scale house and office during power outages, the appropriate information and emission estimate calculations for the engine shall be provided to the Department via a Request For Determination, General Permit application or Air Quality Plan Approval application as applicable.

Haul Road:

As previously mentioned, the applicant has proposed to pave the haul road from the permit line at the existing cul-de-sac to just beyond the scale house shown on the provided mapping. The length of paved road will be greater than 500 feet. The remainder of the haul road on the processing pad will be lined with stone.

The following equipment will be deployed for processing Limestone and Sandstone:

Air Contamination Sources:

- CR-1; One (1) Telsmith 3450 Primary Jaw Crusher rated at 300 tph

- CR-2; One (1) Telsmith T400 Cone Crusher rated at 423 tph
- CR-3; One (1) Telsmith T300 Cone Crusher rated at 176 tph
- SCR-1; One (1) Triple-deck Telsmith 6203 Vibro-King Scalp Screen rated at 750 tph.
- SCR-2; One (1) JCI 8243 Horizontal Screen Plant
- SCR-3; One (1) JCI 8243 Horizontal Wet Screen Plant
- C-1; Conveyor included with CR-1 (dimensions unknown)
- C-2; 40" x 150' Screen Feed Conveyor
- C-3; 40" x 60' Transfer Conveyor
- C-4; 42" x 150' Radial Stacker Conveyor
- C-5; 30" x 30' Transfer Conveyor
- C-6; 30" x 80' Radial Stacker Conveyor
- C-7; 30" x 60' Transfer Conveyor
- C-8; 30" x 80' Radial Stacker Conveyor
- C-9; 30" x 40' Transfer Conveyor
- C-10; 30" x 100' Radial Stacker Conveyor
- C-11; 42" x 250' Stationary Conveyor
- C-12; Cone Crusher Discharge Conveyor
- C-13a; 36" x 130' Transfer Conveyor
- C-13b; 36" x 130' Transfer Conveyor
- C-14; 30" x 60' Transfer Conveyor
- C-15; 30" x 140' Transfer Conveyor
- C-16; 30" x 45' Transfer Conveyor
- C-17; 30" x 50' Transfer Conveyor
- C-18; 30" x 180' Transfer Conveyor
- C-19; 30" x 100' Radial Stacker Conveyor
- C-20; 30" x 70' Transfer Conveyor
- C-21; 30" x 100' Radial Stacker Conveyor
- C-22; 30" x 50' Transfer Conveyor
- C-23; 30" x 80' Radial Stacker Conveyor
- C-24; 30" x 50' Transfer Conveyor
- C-25; 30" x 100' Radial Stacker Conveyor
- C-26; 30" x 70' Transfer Conveyor
- C-27; 30" x 100' Radial Stacker Conveyor
- C-28; 30" x 80' Radial Stacker Conveyor
- C-29; 30" x 40' Transfer Conveyor
- C-30; 30" x 50' Transfer Conveyor
- C-31; 30" x 310' Transfer Conveyor
- C-32; 30" x 28' Transfer Conveyor
- 170' x 12' Surge Tunnel
- ST & PF; 170' x 12' Surge Tunnel
- ST & PF; Two (2) Telsmith 4272 Pan Feeders
- SPOL-1; Product Stationary Splitter
- HP; Truck Dump Hopper
- SWP; Kohlberg Model 5044-32T Sand Prep Wash Plant
- SB & PF Surge Bin w/Pan Feeder (S-36)
- Three (3) Front-end Loaders
- Unpaved Roadways

CONTROLS:

- Water Sprays on Processing Equipment; and
- Water Truck equipped with Pressurized Spray Bar/Cannon

NOTIFICATIONS:

The applicant has delivered municipal notifications to Westmoreland County and Derry Township on September 01, 2021, pursuant to 25 Pa Code § 127.43a. On December 23, 2021, the applicant submitted the revised municipal notifications and PHMC notification information.

REGULATORY ANALYSIS:

As part of this new limestone and sandstone processing operation the primary emissions will be primarily PM and PM₁₀. All of the plant equipment will be run via electric power that will be provided to the site via the electric utility grid. Front-end loaders (FEL) will be used to manipulate stockpiles, move material around the site, and for truck loading operations. There will be three (3) FEL operating at site, of different capacities i.e. 12 cu-yd³, 7 cu-yd³, and 6 cu-yd³.

The following processing operations will be performed at the plant:

- Crushing;
- Sizing;
- Washing;
- Storage; and
- Distribution aggregate material by truck to local market.

40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants (NESHAPS): There are no Federal NESHAP Standards in 40 CFR Part 63 that apply to Limestone Processing Plants. Particulate emissions from the above limestone processing facility are not hazardous in nature. This facility is not subject to NESHAP regulations as proposed.

40 CFR Part 60, Subpart OOO-Standard Performance for Nonmetallic Mineral Processing Plants was promulgated on August 1, 1985. Per §60.670(a), this subpart is applicable to the following affected facilities in fixed or portable non-metallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station. The maximum rated capacity of the above processing plant is 750 tph which is greater than 150 tph, therefore it is subject to this subpart [40 CFR 60.670(c)(2)]. The proposed one jaw crusher rated at 300 tph and two cone crushers rated at 423 tph and 176 tph meets the definition of a crusher per 40 CFR §60.670. Requirements include standards for particulate matter (PM) per § 60.672, monitoring of operations per § 60.674, test methods and procedures per § 60.675, and reporting and record keeping per § 60.676.

Per Table 3 to 40 CFR Part 60 Subpart OOO for Fugitive Emission Limits, the facility must meet the following requirements for facilities that commenced construction on or after April 22, 2008.

Table: 1

Grinding Mills, Screening Operations, Transfer points	Compliance
7 percent opacity	An initial performance test according to § 60.11 of this part and § 60.675 of this subpart; and periodic inspections of water sprays according to § 60.674(b) and § 60.676(b).

The facility is subject to the following requirements under NSPS 40 CFR Part 60 Subpart OOO:

- Monitoring operations per §60.674.
- Test methods and procedures per §60.675
- Reporting and recordkeeping per §60.676.

Prevention of Significant Deterioration (PSD) Requirements: The Federal PSD requirements 40 CFR Part 52 have been adopted in their entirety by the Department in 25 Pa. Code Subchapter D Sections 127.81 through 127.83. Because the limestone processing plant will be a natural minor source, PSD does not apply to this operation.

Non-attainment New Source Review (NNSR): For purposes of NNSR, a facility is major if the potential to emit exceeds 100 tons of NO_x or 50 tons of VOC per year. The major source threshold for Prevention of Significant Deterioration (PSD), for this type of facility, is potential emissions of 250 TPY of a single attainment pollutant. This facility will not have the potential to emit criteria and hazardous air emissions in excess of the thresholds for Title V, NNSR, and PSD and is not considered a Major Source by these programs. Therefore, it will not be subject to 25 PA Code Subchapter E requirements.

Title V Permit Requirements (40 CFR Part 70): The facility being a natural minor, not subject to Title V requirements for either criteria pollutants or HAPs.

Compliance Assurance Monitoring (CAM) Plans (40 CFR Part 64): The facility is not subject to CAM as it is a natural minor facility.

Pennsylvania State Requirements: The state regulations applicable to the proposed limestone processing plant are contained in 25 Pa. Code Section 121-143 and include:

25 Pa Code Sections 123.1 & 2, limit visible fugitive emissions to levels of minor significance, as determined by the Department, from the process after control and to zero at the property line from road use. Sections 123.1 & 2 have been included as plan approval conditions. Appropriate controls will limit visible fugitive emissions to zero from the process.

25 PA Code Section 123.1(c), the facility will be responsible for removal of earth or other material from the paved state roads which are transported by trucking or earth moving equipment, erosion by water from the site, or other means.

25 PA Code Section 123.13(c), this section applies to this facility. Per this section no person may permit the emission of particulate matter in effluent gas exceeds .04 gr/dscf.

25 Pa Code Section 123.21 and 123.22, the natural gas fired air heaters will be subject to the requirements of sulfur oxide provisions of the regulations.

25 Pa Code Section 123.31, per this section a person may not permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source, in such a manner that the malodors are detectable outside the property of the source.

25 Pa. Code §123.41 – Limitations will apply to this facility for visible emission limits. This regulation limits visible emissions to not exceed the following:

Table: 2
Visible Emission Standards

Source	Opacity Limit per 25 Pa. Code §123.41	Required BAT Opacity Limit
Processing Equipment	Not to exceed 20% for 3 minutes in any hour, or and 60% at any time	shall not equal or exceed 10%

The applicant will meet this requirement by conducting daily facility visible emission observation inspections for the presence of any visible emissions.

25 PA Code Section 127.1, new sources shall control emissions to the maximum extent, consistent with the best available technology (BAT) as determined by the Department as determined by the Department at the time of issuance of the Plan Approval. The proposed sources meet the definition of new sources as defined by Title 25 PA Code Section 121.1.

25 Pa Code Section 127.11, Plan Approval is required to allow construction of an air contamination source.

25 Pa §129.14 Open burning operations 25 Pa Code 129.14 (Open Burning Operations) The facility is not located in an air basin and is allowed to conduct open burning, subject to the requirements of this condition.

Best Available Technology (BAT):

25 PA Code Section 127.12(a)(5), all new sources are required to show that emissions will be the minimum attainable through the use of best available technology (BAT). Although the Department has not published a BAT policy for non-metallic mineral processing facilities, the BAT policy for limestone preparation plants suggests some guidelines. As the facility proposes processing more than 500,000 tons of material per year, the most stringent Limestone Prep design parameters should be considered. This site is designed in a manner that is equivalent to the Coal Prep BAT in many regards: radial stackers, naturally-occurring wind barriers resulting from existing topography and vegetation, use of water sprays, shielded conveyors, crushers, screens and transfer points, underground reclaim under the secondary processing feed stockpiles, adequate roadway construction and maintenance, and tarping requirements. In this instance a water spray system will control fugitive emissions and BAT for the process is to operate with zero fugitive emissions.

The applicant has submitted the following BAT techniques or control measures to be used at this facility:

- Transfer points will be kept to minimal drop distances.
- Water sprays located at appropriate locations prior to and after crushers and screens.

- Crushers and screens are manufactured in a way to provide partial enclosure (they will not be totally enclosed inside a building).
- Conveyors will have partial enclosure with sides.
- A truck speed limit of 15 mph will be posted.
- All trucks will be required to tarp their loads prior to leaving facility.
- Haul roads will either be paved, or stone lined.
- A water truck will be used to spray water on haul roads.
- A street sweeper will be available to remove particulate matter from the paved haul road when necessary.
- The haul road will be paved from the existing cul-de-sac to just beyond the scale house as shown on the provided Air Quality Site Map. The length of road paved will be over 500 feet. The fugitive particulate emissions from this roadway will be controlled with a water truck and road sweeper (when necessary). The remainder of the area routinely used by trucks hauling stone product will be covered with compacted stone and controlled with water sprays.
- Stockpile control by pressurized water truck with a water cannon.

In addition to the improve haul road surfaces, other BAT practices applied at this site are as follows:

- a) limit of truck speed to 15 mph; and
- b) Enforced tarping of truck loads.

All above controls are proposed as BAT for the purpose of preventing fugitive particulate emissions from crossing the property line.

Section 123.2 limits fugitive emissions from road use to zero at the property line. The requirement of testing for opacity by an independent third-party using EPA Reference Method 9 per 40 CFR Part 60 Section 60.675 was considered to determine if the proposed equipment is in compliance with 25 PA Code Section 123.1. However, per 25 PA Code §127.12b, daily, facility-wide observations for fugitive emissions, malodorous emissions and record keeping by the operator will be required as a plan approval condition. Stack testing of the equipment by a third party will be required if fugitive emissions greater than the requirements of 40 CFR Section 60.672 are noted during the initial operating permit inspection.

The crushers will be equipped with water sprays to control PM emissions. The facility will also have a wash plant associated with the secondary plant which will produce washed sand, 8's (1B), and 57's (2B). These control strategies represent BAT for this installation. Additionally, the facility is required to meet the New Source Performance Standards (NSPS) in 40 CFR Part 60 Subpart OOO for Non-metallic Mineral Processing Plants.

The limestone facility is not subject to NSR regulations or Title V permitting because emission rates, with control, will be below major source thresholds. The facility does not meet the definition of a major stationary source per 40 CFR Part 52.21(b)(1) because it does not belong to a listed source category and as such the PTE threshold is 250 tpy and fugitive emissions are not included in the determination. 25 PA Code Chapter 127 Subchapter E requirements do not apply since the facility is not a major of any non-attainment pollutant.

Per EPA guidance titled “Definition of regulated pollutants for particulate matter for purposes of Title V” dated October 16, 1995; in the relevant part “EPA has recently reevaluated this finding and has concluded that its definition of regulated air pollutant under Title V applies only to the emissions of PM₁₀... The federal minimum for applicability of Title V to sources of particulate matter should be based on the amount of PM₁₀, not particulate matter; the source has the potential to emit...” As this facility has a PTE below the major source threshold for PM₁₀ it is not subject to Title V permitting requirements.

EMISSIONS & CONTROLS:

Throughput at the proposed facility will be limited to 2.1 million tons per year of a variety of limestone products. The particulate matter emissions created during the crushing, sizing, and aggregate handling will be controlled by water sprays at each key (screen, crusher, transfer point, truck load, etc.) potential dust points. Roadways will be treated and watered on an as needed basis. The facility will also have a wash plant associated with the secondary plant which will produce washed sand, 1B, and 2B aggregates.

The particulate emission factors being used here are taken from EPA’s AP-42 volumes: 11.19 and 13.2. Uncontrolled and controlled emission factors are provided in these documents for a particular activity (i.e., crushing, screening, or conveyor transfer). The controlled E-factor was divided by the uncontrolled E-factor to obtain the percent (%) control.

**Table: 2
Uncontrolled and Controlled Emission factors**

Activity	AP-42	E.F. (PM ₁₀) Uncontrolled	E.F. (PM ₁₀) Controlled	% Control	E.F. (PM ₃₀) Uncontrolled	E.F. (PM ₃₀) Controlled	% Control
Rock Truck Dump to Hopper	11.19.2	0.000016	0.000016	0	0.000016	0.000016	0
Transfer Points	11.19.2	0.0011	0.000046	96	0.003	0.00014	95
Crusher	11.19.2	0.0024	0.00054	78	0.0054	0.0012	78
Screen	11.19.2	0.0087	0.00074	91	0.025	0.0022	91
Stockpile Manipulation & Handling	13.2.4	0.012	0.025	77	0.025	0.006	76
Haul Roads	13.2.1 & 2	-	-	75	-	-	75

1. Unpaved Roadways:

All the aggregates produced at the SMT-East Mine Facility will be shipped off site by trucks. Loading and unloading operations will be performed on unpaved roadways. Emission Factor (E.F.) for these operations are based on AP-42, 13.2.2 unpaved roads (Nov. 2006). A round trip is considered from the beginning of access road at permit line into the processing area and then out to north side across the scale and then back to the mine permit line. It is noted that there will total 457 trucks that will potentially enter

and exit the facility every day or 14 hours which equates to 32.6 round trips per hour hauling 23-ton loads. The estimated distance truck will travel during a round trip is 0.286 miles (unloaded) and 0.125 miles (loaded).

Vehicle Miles Travelled (VMT) is calculated for unloaded and loaded trucks as below:

$$32.6 \text{ trip/hr} \times 0.286 \text{ miles} = 9.32 \text{ VMT/hr (unloaded)}$$

$$32.6 \times 0.125 \text{ miles} = 4.08 \text{ VMT/hr (loaded)}$$

2. Paved Roadways:

Ligonier Stone & Lime is proposing to pave the haul road from the existing cul-de-sacto just beyond the scale house over 500 feet. Loading and unloading operations will also be performed on paved roadways. Emission Factor (E.F.) for these operations are based on AP-42, 13.2.2 paved roads (Nov. 2006). A round trip is considered from the beginning of access road at permit line into the processing area and then out to north side across the scale and then back to the mine permit line. It is noted that there will total 457 trucks will enter and exit the facility every day or 14 hours which equates to 32.6 round trips per hour hauling 23-ton loads. The estimated distance truck will travel during a round trip is 0.106 miles (unloaded) and 0.12 miles (loaded).

Vehicle Mile Travelled (VMT) is calculated for unloaded and loaded trucks as below:

$$32.6 \text{ trip/hr} \times 0.106 \text{ miles} = 3.46 \text{ VMT/hr (unloaded)}$$

$$32.6 \times 0.12 \text{ miles} = 3.91 \text{ VMT/hr (loaded)}$$

Un-controlled PM₃₀:

The applicant has calculated uncontrolled and controlled PM₃₀ emissions by using emission factors from AP-42 Section 11.19.2 for Crushed Stone Processing and Pulverized Mineral Processing Table 11.19.2-2; Section 13.2.4 for Aggregate Handling and Storage Piles; and Section 13.2.2 for Unpaved Roads Table 13.2.2-2.

From Unpaved Roadways:

(i) PM₃₀ emissions (unloaded trucks) = 8.34 lb/VMT or 8.34 lb/mile x 9.32 mile/hr = 77.73 lb/hr x 2,800 hrs/year /2,000 lbs/ton = 108.8 tpy

(ii) PM₃₀ emissions (loaded trucks) = 13.19 lb/VMT or 13.19 lb/mile x 4.08 mile/hr = 53.82 lb/hr x 2,800 hrs /year /2,000 lbs/ton = 75.3 tpy

$$\text{PM}_{30} \text{ from unpaved roadways} = 184.10 \text{ tpy}$$

From Paved Roadways:

(iii) PM₃₀ emissions (unloaded trucks) = 1.02 lb/VMT or 1.02 lb/mile x 3.46 mile/hr = 3.53 lb/hr x 2,800 hrs/year /2,000 lbs/ton = 4.9 tpy

(iv) PM₃₀ emissions (loaded trucks) = 2.9lb/VMT or 2.9 lb/mile x 3.91 mile/hr = 11.34 lb/hr x 2,800 hrs /year /2,000 lbs/ton = 15.9 tpy

$$\text{PM}_{30} \text{ from paved roadways} = 20.8 \text{ tpy}$$

From Transfer points, Crushers, Screens etc., and stockpiles:

(v) Total PM₃₀ emissions per Attachment F, Spreadsheet D, = 123.22 tpy

Total uncontrolled PM₃₀ = 184.10+20.80+123.22= 328.12 tpy

Controlled PM₃₀:

- (i) PM₃₀ emissions (unpaved) applying 75% control with water sprays = 25% x 184.10 tpy = 46 tpy
- (ii) PM₃₀ emissions (paved) applying 75% control with water sprays = 25% x 20.8 tpy = 5.2 tpy
- (iii) PM₃₀ emissions from transfer points, stockpiles per Attachment F, Spreadsheet D, = 17.55 tpy

Total controlled PM₃₀ = (i) + (ii) + (iii) = 68.75 tpy

Un-controlled PM₁₀:

The applicant has calculated uncontrolled and controlled PM₁₀ emissions by using emission factors from AP-42 Section 11.19.2 for Crushed Stone Processing and Pulverized Mineral Processing Table 11.19.2-2; Section 13.2.4 for Aggregate Handling and Storage Piles; and Section 13.2.2 for Unpaved Roads Table 13.2.2-2.

From Unpaved Roadways:

- (i) PM₁₀ emissions (unloaded trucks) = 2.46 lb/VMT or 2.46 lb/mile x 9.32 mile/hr = 22.9 lb/hr x 2,800 hrs/year /2,000 lbs/ton = 32.1 tpy
- (ii) PM₁₀ emissions (loaded trucks) = 3.9 lb/VMT or 3.9 lb/mile x 4.08 mile/hr = 15.9 lb/hr x 2,800 hrs /year /2,000 lbs/ton = 22.3 tpy

PM₁₀ from unpaved roadways = 54.4 tpy

From Paved Roadways:

- (iii) PM₁₀ emissions (unloaded trucks) = 0.2 lb/VMT or 0.2 lb/mile x 3.46 mile/hr = 0.69 lb/hr x 2,800 hrs/year /2,000 lbs/ton = 1.0 tpy
- (iv) PM₁₀ emissions (loaded trucks) = 0.58 lb/VMT or 0.58 lb/mile x 3.91 mile/hr = 2.27 lb/hr x 2,800 hrs /year /2,000 lbs/ton = 3.20 tpy

PM₁₀ from unpaved roadways = 4.20 tpy

From Transfer points, Crushers, Screens etc., and stockpiles:

(v) Total PM₃₀ emissions per Attachment F, Spreadsheet D, = 52.03 tpy

Total uncontrolled PM₁₀ = 54.40+4.20+52.03= 110.63 tpy

Controlled PM₁₀:

- (i) PM₁₀ emissions (unpaved) applying 75% control with water sprays = 25% x 54.4 tpy = 13.6 tpy

- (ii) PM₁₀ emissions (paved) applying 75% control with water sprays = 25% x 4.2 tpy = 1.05 tpy
- (iii) PM₁₀ emissions from transfer points, stockpiles per Attachment F, Spreadsheet D, = 7.36 tpy

Total controlled PM₁₀ = (i) + (ii) + (iii) = 22.01 tpy

The applicant has proposed 1.2 million tons of material throughput per year for this facility. The controlled PM₃₀ and PM₁₀ emissions from the facility based on the throughput are 68.75 tpy and 22.01 tpy respectively.

CONCLUSION:

The applicant has met BAT for dust suppression with the use of water sprays on processing equipment and water truck with pressurized spray bar/cannon. I recommend the issuance of the Plan Approval (PA-65-01128A) to Ligonier Stone & Lime Co., Inc. for a period of 18-month from the date of issuance. This plan approval is subject to the following special conditions.

SPECIAL CONDITIONS:

Section C – Site Level Requirements

1. This Plan Approval is to allow the construction and temporary operation of a new Non-Metallic Mineral Processing Plant named ‘SMT-East Non-Coal Surface Mine’ located in Derry Township Westmoreland County [25 PA Code §127.12b].
2. Air contamination sources at the facility are as follows [25 PA Code §127.12b]:
 - CR-1; One (1) Telsmith 3450 Primary Jaw Crusher rated at 300 tph
 - CR-2; One (1) Telsmith T400 Cone Crusher rated at 423 tph
 - CR-3; One (1) Telsmith T300 Cone Crusher rated at 176 tph
 - SCR-1; One (1) Triple-deck Telsmith 6203 Vibro-King Scalp Screen rated at 750 tph.
 - SCR-2; One (1) JCI 8243 Horizontal Screen Plant
 - SCR-3; One (1) JCI 8243 Horizontal Wet Screen Plant
 - C-1; Conveyor included with CR-1 (dimensions unknown)
 - C-2; 40” x 150’ Screen Feed Conveyor
 - C-3; 40” x 60’ Transfer Conveyor
 - C-4; 42” x 150’ Radial Stacker Conveyor
 - C-5; 30” x 30’ Transfer Conveyor
 - C-6; 30” x 80’ Radial Stacker Conveyor
 - C-7; 30” x 60’ Transfer Conveyor
 - C-8; 30” x 80’ Radial Stacker Conveyor
 - C-9; 30” x 40’ Transfer Conveyor
 - C-10; 30” x 100’ Radial Stacker Conveyor
 - C-11; 42” x 250’ Stationary Conveyor
 - C-12; Cone Crusher Discharge Conveyor
 - C-13a; 36” x 130’ Transfer Conveyor
 - C-13b; 36” x 130’ Transfer Conveyor

- C-14; 30" x 60' Transfer Conveyor
- C-15; 30" x 140' Transfer Conveyor
- C-16; 30" x 45' Transfer Conveyor
- C-17; 30" x 50' Transfer Conveyor
- C-18; 30" x 180' Transfer Conveyor
- C-19; 30" x 100' Radial Stacker Conveyor
- C-20; 30" x 70' Transfer Conveyor
- C-21; 30" x 100' Radial Stacker Conveyor
- C-22; 30" x 50' Transfer Conveyor
- C-23; 30" x 80' Radial Stacker Conveyor
- C-24; 30" x 50' Transfer Conveyor
- C-25; 30" x 100' Radial Stacker Conveyor
- C-26; 30" x 70' Transfer Conveyor
- C-27; 30" x 100' Radial Stacker Conveyor
- C-28; 30" x 80' Radial Stacker Conveyor
- C-29; 30" x 40' Transfer Conveyor
- C-30; 30" x 50' Transfer Conveyor
- C-31; 30" x 310' Transfer Conveyor
- C-32; 30" x 28' Transfer Conveyor
- 170' x 12' Surge Tunnel
- ST & PF; 170' x 12' Surge Tunnel
- ST & PF; Two (2) Telsmith 4272 Pan Feeders
- SPOL-1; Product Stationary Splitter
- HP; Truck Dump Hopper
- SWP; Kohlberg Model 5044-32T Sand Prep Wash Plant
- SB & PF Surge Bin w/Pan Feeder (S-36)
- Three (3) Front-end Loaders
- Unpaved Roadways

3. Air cleaning devices at the facility include the following [25 PA Code §127.12b]:

- a. Transfer points will be kept to minimal drop distances.
- b. Water sprays located at appropriate locations prior to and after crushers and screens.
- c. Crushers and screens are manufactured in a way to provide partial enclosure.
- d. Conveyors will have partial enclosure with sides.
- e. A truck speed limit of 15 mph will be posted.
- f. All trucks will be required to tarp their loads prior to leaving facility.
- g. Haul roads will either be paved, or stone lined.
- h. A water truck will be used to spray water on haul roads.
- i. A street sweeper will be available to remove particulate matter from the paved haul road when necessary.
- j. The haul road will be paved over 500 feet from the existing cul-de-sac to the scale house. The remainder of the area routinely used by trucks hauling stone product will be covered with compacted stone and controlled with water sprays.
- k. The facility will pave and maintain the first 500 feet of the access road off of the public highway.
- l. The fugitive particulate emissions from in-plant roadways will be controlled with a water truck and road sweeper (when necessary).

4. There shall be no fugitive emissions from the facility contrary to 25 PA Code §123.1 & §123.2.

Throughput Restrictions:

5. Throughput of raw limestone material at the facility shall not exceed 2,100,000 tons (2.1 million tons) in any consecutive 12-month period [25 PA Code §127.12b].

Emission Restrictions:

6. A person may not permit the emission into the outdoor atmosphere of visible air contaminants from processing equipment in such a manner that the opacity of the emission shall not equal or exceed 10%. [25 PA Code §127.12b].

Monitoring:

Section C - Site Level State Only Requirements

7. A facility-wide inspection shall be conducted at a minimum of once each day that the facility is in operation at the Facility by the Owner/Operator. The facility-wide inspection shall be conducted for the presence of the following:

- (a) Visible emissions.
- (b) Fugitive emissions; and
- (c) Potentially objectionable odors at the property line.

These observations are to ensure continued compliance with source-specific visible emission limitations, fugitive emissions prohibited under 25 Pa. Code §§123.1 or 123.2, and malodors prohibited under 25 Pa. Code §123.31. Observations for visible emissions shall be conducted during daylight hours and all observations shall be conducted for all sources in operation at the time of the facility-wide inspection. If visible emissions, fugitive emissions, or potentially objectionable odors are apparent, the Owner/Operator shall take corrective action. Records of each inspection shall be maintained in a log and at the minimum include the date, time, name and title of the observer, along with any corrective action taken as a result. [25 Pa. Code §127.12b]

8. At the request of the Department, the Owner/Operator shall implement a dust fall monitoring program using ASTM Method D1739-98 (2010) – Standard Test Method for Collection and Measurement of Dust Fall (Settleable Particulate Matter) [25 PA Code §127.12b].

Work Practice:

Section C - Site Level State Only Requirements

9. The Owner/Operator may not permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source, in such a manner that the malodors are detectable outside the property of the Facility [25 PA Code § 123.31].
10. In-plant roads and areas of vehicle traffic shall be watered and swept, as needed on a preventative basis, such that visible fugitive emissions do not cross the property line in accordance with 25 PA Code §123.1 and §123.2. Other methods of dust control shall be used when weather conditions

make in-plant road watering hazardous, as necessary, to prevent visible fugitive emissions from crossing the property line in accordance with 25 PA Code §123.1 and §123.2.

11. Water sprays shall be located at appropriate locations prior to and after each crusher and screen. Crushers and screens shall provide partial enclosure and all conveyors shall have partial enclosure with sides to control fugitive emissions [25 PA Code §127.12b].
12. All raw and finished limestone aggregate shall be stockpiled in such a manner that it may be adequately wetted by the on-site pressurized water truck to control fugitive emissions. [25 PA Code §127.12b].
13. All conveying equipment, radial stackers, and front-end loaders used to stockpile, transfer, and load limestone shall always maintain a minimal amount of drop height so as to prevent fugitive emissions [25 PA Code §127.12b].
14. The plant access road shall be paved for the first 500 feet and maintained so as to prevent fugitive emissions from crossing the property line. The remaining areas of vehicle traffic shall be paved or periodically delineated with gravel or crushed stone, as necessary to prevent fugitive emissions from crossing the property line [25 PA Code §127.12b].
15. The Owner/Operator shall install water sprays on each crusher, screen, and transfer point, and operate the water sprays as necessary to prevent visible fugitive emissions from the sources. A winterized surfactant shall be used during cold weather operations if weather conditions do not allow the application of water [25 PA Code §127.12b].
16. The facility shall not operate at any time that the pressurized water truck is incapable of operating [25 PA Code §127.12b].
17. Road watering and sweeping shall be performed on, as needed, and earth or other material transported from the site shall be removed promptly from, as needed, the paved public road to prevent visible fugitive emissions in accordance with 25 PA Code §123.1(c).
18. The Owner/Operator shall post a requirement stating: [25 PA Code §127.12b].
 - All loaded trucks except for small local municipality dump trucks exiting the plant property shall be properly tarpaulin covered.
 - A truck speed limit of 15 mph shall be posted.
 -
19. The Owner/Operator shall operate all air contamination sources and all air cleaning devices covered by this plan approval per the manufacturer's specifications and maintain all air contamination sources and all air pollution control devices covered by this plan approval modification per the manufacturer's recommended maintenance schedule [25 Pa. Code § 127.12b].

Record Keeping:

Section C - Site Level State Only Requirements

20. The Owner/Operator shall maintain the following records on 12-month rolling totals [25 PA Code §127.12b]:
 - a. Tons of raw limestone/sandstone material received at the facility.
 - b. Tons of raw limestone/sandstone material processed at the facility.
 - c. Tons of clean variety of limestone/sandstone products shipped from the facility.
 - d. Tons of sand shipped from the facility.
21. All logs and required records shall be maintained on site for a minimum of five (5) years and shall be made available to the Department upon request [25 PA Code §127.12b].

40 CFR Part 60 Subpart OOO Requirements:

22. The facility is subject to 40 CFR Part 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants. §60. 672 Standard for particulate matter (PM)

No owner or operator shall discharge into the atmosphere any visible emissions from:

- a. Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to the next crusher, grinding mill or storage bin.
 - b. Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, where such screening operations, bucket elevators, and belt conveyors process saturated materials up to the next crusher, grinding mill, or storage bin in the production line.
23. The facility is subject to the following requirements under NSPS 40 CFR Part 60 Subpart OOO §60.676):
 - Monitoring operations per §60.674.
 - Test methods and procedures per §60.675
 - Reporting and recordkeeping per §60.676.
 24. The notification requirement under 40 CFR § 60.7(a)(2), of the anticipated date of initial startup of portable nonmetallic mineral processing plant equipment shall be waived for a permittee operating under this plan approval. A notification of the actual date of initial startup of each affected facility shall be submitted to the Department and EPA. The notification shall be postmarked within fifteen (15) days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available [25 Pa. Code § 127.12b].

Reporting:

Section C - Site Level State Only Requirements

25. Malfunction reporting shall be conducted as follows [25 Pa. Code §127.12b]:
 - (a) The owner or operator shall report each malfunction that occurs at this facility that poses an imminent and substantial danger to the public health and safety or the environment or which it

should reasonably believe may result in citizen complaints to the Department. For purpose of this condition a malfunction is defined as any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment or source to operate in a normal or usual manner that may result in an increase in the emission of air contaminants. Examples of malfunctions that may result in citizen complaints include but are not limited to: large dust plumes, heavy smoke, a spill or release that results in a malodor that is detectable outside the property of the person on whose land the source is being operated.

- (b) When the malfunction poses an imminent and substantial danger to the public health and safety or the environment, the notification shall be submitted to the Department no later than one hour after the incident. All other malfunctions that must be reported under subsection (a) shall be reported to the Department no later than the next business day.
- (c) The report shall describe the:
 - (i) name and location of the facility;
 - (ii) nature and cause of the malfunction or breakdown;
 - (iii) time when the malfunction or breakdown was first observed;
 - (iv) expected duration of excess emissions; and
 - (v) estimated rate of emissions.
- (d) The owner or operator shall notify the Department immediately when corrective measures have been accomplished.
- (e) Subsequent to the malfunction, the owner/operator shall submit a full written report to the Department including the items identified in (c) and corrective measures taken on the malfunction within 15 days, if requested.
- (f) The owner/operator shall submit reports on the operation and maintenance of the source to the Regional Air Program Manager at such intervals and in such form and detail as may be required by the Department. Information required in the reports may include, but is not limited to, process weight rates, firing rates, hours of operation, and maintenance schedules.

Malfunctions shall be reported to the Department at the following address:

PADEP
Office of Air Quality
400 Waterfront Drive
Pittsburgh, PA 15222-4745
412-442-4000

Testing Requirements:

Section C - Site Level State Only Requirements

- 26. The Department reserves the right to require performance testing or additional controls based on evaluation of the operation of all the sources after inspection and determination that existing controls are inadequate to control fugitive particulate. The Department also reserves the right to require performance testing on the existing equipment by a third party if fugitive emissions greater than the requirements of 40 CFR Section 60.672 are noted during the initial operating permit inspection.

Additional:

Section C - Site Level State Only Requirements

27. Upon determination by the Owner/Operator that the source(s) covered by this Plan Approval are in compliance with all conditions of the Plan Approval the Owner/Operator shall contact the Department's reviewing engineer and schedule the Initial Operating Permit Inspection [25 PA Code §127.12b].
28. Upon completion of the initial operating permit inspection and determination by the Department that the sources covered by this Plan Approval are in compliance with all conditions of this Plan Approval the Owner/Operator shall submit a State Only Operating Permit (SOOP) application for this facility [25 PA Code §127.12b].
29. The Owner/Operator shall submit requests to extend the temporary operation period at least 15 days prior to the expiration date of any authorized period of temporary operation until the source(s) covered by this authorization are incorporated into an issued SOOP for this facility [25 Pa. Code §127.12b].