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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	G40-C013D
Plant ID No.:	081-00023
Applicant:	Appalachian Aggregates, LLC (formerly Boxley Aggregates of West Virginia, LLC)
Facility Name:	Beckley Plant
Location:	Beckley, Raleigh County
SIC / NAICS Code:	1422 / 212312
Application Type:	Modification
Received Date:	December 12, 2016
Engineer Assigned:	Thornton E. Martin Jr.
Fee Amount:	$1,500
Date Received:	December 13, 2016
Complete Date:	January 10, 2017
Applicant Ad Date:	December 15, 2016
Newspaper:	*The Register-Herald*
UTM's:	Easting: 478.014 km Northing: 4190.154 km Zone: 17
Description:	Applicant proposes the addition of one (1) triple deck screen, one (1) high frequency screen, six (6) conveyor belts and three (3) stockpiles.

INTRODUCTION TO PROJECT

Appalachian Aggregates, LLC is applying for a revised registration under General Permit G40-C to include the addition of a triple deck screen (MP-VS3), a high frequency screen (MP-VS4), six (6) belt conveyors (MP-BC14, MP-BC15, MP-BC16, MP-BC17, MP-BC18, MP-BC19) and three (3) stockpiles (OS-Q, OS-R and OS-S). The maximum feed rate for the triple deck screen MP-VS3 will be 250 Tons per hour (TPH) and 600,000 tons per year (TPY) and the maximum feed rate for the high frequency screen MP-VS4 will be 150 TPH and 876,000 TPY. Throughput rates on numerous conveyor belts were increased to match the rates and reflected in the Affected Source Sheets. The hourly throughput on cone crusher MP-CC1 was increased from 225 TPH to 300 TPH and cone crusher MP-CC2 was increased from 275 TPH to 300 TPH.

BACKGROUND

On December 31, 2015, Boxley Aggregates of West Virginia, LLC (Boxley) sold the Beckley facility to Oldcastle Materials, Inc. and, effective January 08, 2016, the company name was changed to Appalachian Aggregates, LLC. The West Virginia Department of Environmental Protection, Division of Air Quality (DAQ) approved the transfer of permit G40-C013C to Appalachian Aggregates, LLC in a letter dated May 02, 2016. The current existing permit registration is G40-C013C issued on May 21, 2014.

DESCRIPTION OF PROCESS

The Main Plant is comprised of primary crushing and screening operations for sisized aggregate production. Final sized products are stockpiled and loaded to truck via endloaders. The Wash Plant consists of screening operations with material stockpiled to await shipment off-site. For the potential to emit, the hourly emissions estimate is based on the entire facility concurrently operating. Operating rates are listed in the affected source sheets for the processing and conveying equipment of the application and the Equipment Summary of the evaluation.

Main Plant:

Stone is hauled from the pit to the jaw hopper and grizzly feeder (MP-H1/UD-WS1) through TP-1/UL-MD. MP-H1/UD-WS1 transfers the larger stone to jaw crusher (MP-JC1/CS-FW1) through TP-2/TC-WS2. The smaller stone falls through the grizzly bars (MP-VGF1/CS-PW1) and is transferred to belt MP-BC1A/WS5 through TP-4/TC-WS4. Falling scrap is collected on belt conveyor (MP-BC1B/WS8). The stone is transferred to MP-BC1/WS10 from MP-JC1/CS-FW1, MP-BC1A/WS5 and MP-BC1B/WS8 through transfer points TP-3/TC-WS3, TP-5/TC-WS6 and TP-7/TC-WS9, respectively. MP-BC1/WS10 transfers the material into a surge pile (OS-A/HR-WS1) through transfer TP-8/TC-WS11. From OS-A/HR-WS1, the material is transferred through two underground feeders that transfer the material through TP-9/TC-FE1 and TP-10/TC-FE2 onto conveyor belt MP-BC2/WS12. MP-BC2/WS12 conveys the material to transfer point TP-11/TC-WS13 where the material is transferred into a triple deck screen (MP-VS1/CS-PW2). The oversize rip rap material is transferred through TP-12/TC-WS14 to belt conveyor MP-BC13/WS15. MP-BC13/WS15 conveys the rip rap material to stockpile OS-J/HR-WS1 through TP-13/TC-WS16. The mid-size material is transferred through TP-14/TC-WS17 to conveyor belt MP-BC3B/WS18 or transferred through TP-16/TC-WS20 to cone crusher MP-CC1/CS-FW2 for additional sizing. The material conveyed on belt MP-BC3B/WS18 is transferred through TP-15/TC-WS19 to stockpile OS-1/HR-WS1. The smaller material from MP-VS1/CS-PW2 is transferred through TP-18/TC-WS22 onto conveyor belt MP-BC3/WS23 or onto conveyor belt MP-BC3A/WS23A. MP-BC3/W23 conveys the material to stockpile OS-B/HR-WS1 through TP-19/TC-WS24. MP-BC3A/WS23A conveys the material to stockpile OS-B1/HR-WS1 through TP-19A/TC-W24A. Mid-sized stone that passes through MP-CC1/CS-FW2 is transferred to the second triple deck screen MP-VS2/CS-PW3 through the following series: TP-17/TC-WS21, MP-BC4/WS25, TP-20/TC-WS26, MP-BC4A/WS27, TP-21/TC-WS28. The oversize material received by MP-VS2/CS-PW3 is transferred to bin MP-BIN1/FW4, the oversized stone can follow two different circuits. Material can be transferred to MP-BC12/WS33 through TP-25/TC-WS32. MP-BC12/WS33 conveys material to stockpile OS-K/HR-WS1 through TP-25/TC-WS34. The second circuit directs material for resizing through MP-CC2/CS-FW3 to arrive back to MP-VS2/CS-PW3. The second circuit follows the sequence from MP-BIN1/FW4: TP-26/TC-WS35, MP-CC2/CS-FW3, TP-27/TC-WS36, MP-BC4/WS25, TP-20/TC-WS26, MP-BC4A/WS27, TP-21/TC-WS28, MP-VS2/CS-PW3. Alternatively, MP-BC4A can send material to MP-VS3 through TP-21A. Oversize from MP-VS3 is sent to conveyor belt MP-BC14 through TP-21B. MP-BC14 feeds back to conveyor belt MP-BC5 through TP-21C. MP-VS3 sends material to OS-E by transferring to conveyor belt MP-BC15 (TP-21D) and then to the stockpile (TP-21E). Smaller material from MP-VS3 can be sent to belt conveyor MP-BC16 via transfer point TP-21F and then to stockpile OS-D (TP-21G). MP-VS3 pass-through material is sent to conveyor belt MP-BC6 (TP-21H), then to MP-BC7 (TP-36). Material can then be sent to either stockpile OS-C (TP-37) or to screen MP-VS4 (TP-37A). The smaller material from MP-VS2/CS-PW3 is conveyed by belts to three different stockpiles for storage until load out or back to belt MP-BC1/WS10. Conveyor MP-BC9/WS38 receives material through TP28/TC-WS37 from the screen and transfers the material either to belt MP-BC9A/WS40 through TP-29/TC-WS39 or to belt MP-BC9B/WS43 through TP-31/TC-WS42. Belt MP-BC9A conveys

material through TP-30/TC-WS41 to stockpile OS-E/HR-WS1. Belt MP-BC9B conveys material back to MP-BC1/WS10 through transfer TP-32/TC-WS44. Conveyor MP-BC8/WS46 receives material through TP-33/TC-45 from the screen and transfers the material to stockpile OS-D/HR-WS1 through TP-34/TC-WS47. Conveyor MP-BC6/WS49 receives material through TP-35/TC-WS48 from the screen and transfers the material to stockpile OS-C/HR-WS1 through the sequence TP-36/TC-WS50, MP-BC7/WS51, TP-37/TC-WS52 to OS-C/HR-WS1. MP-BC7 can alternatively send material to the high frequency screen MP-VS4 via transfer point TP-37A. Oversize material from MP-VS4 transfers to conveyor belt MP-BC17 (TP-37B) then to stockpile OS-Q (TP-37C). Medium size material from MP-VS4 transfers to conveyor belt MP-BC18 (TP-37D) then to stockpile OS-R (TP-37E). Pass-through material from MP-VS4 transfers to belt conveyor MP-BC19 (TP-37F) then to stockpile OS-S (TP-37G). Stockpiles OS-C, OS-D and OS-E are loaded to truck by endloaders via TP-48/MD. Stockpiles OS-I, OS-J and OS-K are loaded to truck by endloaders via TP-47/MD. Stockpile OS-B is loaded to truck by endloaders via TP-49/MD. Stockpiles OS-Q, OS-R and OS-S are loaded to truck by endloaders via TP-52.

There are seven remote stockpiles (OS-F, OS-G, OS-L through OS-P) controlled by the water truck HR-WS1. These stockpiles receive material from trucks via TP-51/MD. The material is stored until it is loaded into trucks and shipped offsite via TP-46/MD.

Wash Plant:

Material enters the wash plant by truck dump WP-H2/UD-WS53 through TP-38/UL-MD. An under bin reclaim belt conveyor WP-BC10/WS55 receives the material through TP-39/TC-WS54. WP-BC10/WS55 transfers the material to double deck screen WP-VS1/CS-PW4 through TP-40/TC-WS56. The larger material out of the screen is transferred to the load out bin WP-BIN1/FW5 through TP-41/TC-WS57. This material is loaded out to trucks through TP-42/LR-WS58. The fines (sand) are transferred to stockpile OS-H/HR-WS1 via the following sequences: TP-43/TC-WS59, screw conveyor WP-SCONV1/WS60, TP-44/TC-WS61, WP-BC11/WS-62, TP-45/TC-WS63 to OS-H/HR-WS1. The sand is loaded to truck via endloader through TP50/MD.

Appalachian Aggregates, LLC will utilize the following equipment and throughput at the Beckley facility:

Table 1: Equipment Summary

Source ID No.	Emission Unit Description (Make, Model, Serial No.)	Design Capacity		Control Device[1]	Month/Year Constructed, Reconstructed, or Modified
		TPH	TPY		
Equipment					
MP-JC1	Jaw Crusher	450	1,800,000	FW	2014
MP-CC1	Cone Crusher	300	1,800,000	FW	2003
MP-CC2	Cone Crusher	300	1,800,000	FW	2003
MP-VS1	Triple Deck Screen	600	1,800,000	PW	2001
MP-VS2	Triple Deck Screen	600	3,552,000	PW	2001
MP-VS3	Triple Deck Screen	250		PW	2017
WP-VS1	Double Deck Screen	200	600,000	PW	2001
MP-VS4	Double Deck Screen	150	876,000	PW	2017
MP-VGF1	Single Deck Screen	600	1,800,000	PW	2001
Conveyors					
MP-BC1A	Belt Conveyor	200	1,752,000	WS	2001
MP-BC1B	Belt Conveyor	5	15,000	WS	2003
MP-BC1	Belt Conveyor	600	1,800,000	WS	2001
MP-BC2	Belt Conveyor	600	1,800,000	WS	2001
MP-BC3	Belt Conveyor	180	1,576,800	WS	2001

Source ID No.	Emission Unit Description (Make, Model, Serial No.)	Design Capacity		Control Device[1]	Month/Year Constructed, Reconstructed, or Modified
		TPH	TPY		
MP-BC3A	Belt Conveyor	180	1,576,800	WS	2001
MP-BC3B	Belt Conveyor	100	876,000	WS	2001
MP-BC4	Belt Conveyor	600	3,552,000	WS	2001
MP-BC4A	Belt Conveyor	600	3,552,000	WS	2001
MP-BC5	Belt Conveyor	300	1,752,000	WS	2001
MP-BC6	Belt Conveyor	150	1,314,000	WS	2001
MP-BC7	Belt Conveyor	150	1,314,000	WS	2001
MP-BC8	Belt Conveyor	150	1,314,000	WS	2001
MP-BC9	Belt Conveyor	150	1,314,000	WS	2001
MP-BC9A	Belt Conveyor	150	1,314,000	WS	2003
MP-BC9B	Belt Conveyor	150	1,314,000	WS	2003
MP-BC12	Belt Conveyor	200	1,314,000	WS	2003
MP-BC13	Belt Conveyor	200	1,752,000	WS	2001
MP-BC14	Belt Conveyor	250	600,000	WS	2017
MP-BC15	Belt Conveyor	250	600,000	WS	2017
MP-BC16	Belt Conveyor	250	600,000	WS	2017
MP-BC17	Belt Conveyor	150	876,000	WS	2017
MP-BC18	Belt Conveyor	150	876,000	WS	2017
MP-BC19	Belt Conveyor	150	876,000	WS	2017
WP-BC10	Belt Conveyor	200	600,000	WS	2001
WP-BC11	Belt Conveyor	100	30,000	WS	2001
WP-SCONV1	Screw Conveyor	100	30,000	FE	2001
Storage		**Tons**	**TPY**		
MP-H1	Storage Bin	100	1,800,000	WS	2001
MP-BIN1	Storage Bin	25	1,752,000	FW	2001
WP-H2	Storage Bin	50	600,000	FW	2001
WP-BIN1	Storage Bin	200	600,000	WS	2001
Stockpiles		**Base Area (Sq. Feet)**	**TPY**		
OS-A	Open Stockpile – stone	7,850	1,800,000	WS	2003
OS-B	Open Stockpile – stone	1,250	1,576,800	WS	2003
OS-C	Open Stockpile – stone	16,000	876,000	WS	2003
OS-D	Open Stockpile – stone	1,250	1,314,000	WS	2003
OS-E	Open Stockpile – stone	1,250	1,314,000	WS	2003
OS-F	Open Stockpile – stone	100,000	251,000	WS	2003
OS-G	Open Stockpile – stone	75,000	251,000	WS	2003
OS-H	Open Stockpile – stone	750	30,000	WS	2003
OS-I	Open Stockpile – stone	4,500	876,000	WS	2003
OS-J	Open Stockpile – stone	6,000	1,752,000	WS	2003
OS-K	Open Stockpile – stone	6,000	75,000	WS	2003
OS-L	Open Stockpile – stone	40,000	125,000	WS	2003
OS-M	Open Stockpile – stone	90,000	275,000	WS	2003
OS-N	Open Stockpile – stone	20,000	70,000	WS	2003
OS-O	Open Stockpile – stone	20,000	85,000	WS	2003
OS-P	Open Stockpile -- stone	20,000	75,000	WS	2003
OS-Q	Open Stockpile -- stone	20,000	462,000	WS	2017
OS-R	Open Stockpile -- stone	20,000	462,000	WS	2017
OS-S	Open Stockpile -- stone	20,000	462,000	WS	2017

[1] FE - Full Enclosure; FW - Full Enclosure w/water spray; PW - Partial Enclosure w/water spray; WS - Water Spray; N - None

DESCRIPTION OF FUGITIVE EMISSIONS

Fugitive emissions from the facility include particulate emissions from haulroads, stockpiles and work areas. The haulroad surfaces are coarse gravel and are used by trucks, endloaders and company

personnel. Water is supplied to the haulroads as needed via a water truck. Water is also applied to the work areas around the stockpiles and plant by the water truck to control particulate emissions. The stockpiles will be controlled by the water truck as needed. Usually the stockpiles contain a sufficient amount of moisture from upstream water sprays to minimize particulate emissions.

The water sprays and water supply lines will be protected from freezing (winterized) by the use of thermal protection: insulation and/or heat taping of exposed areas as needed. In the event that the thermal protection or other methods of winterizing do not prevent freezing, additives may be mixed into the water for freeze proofing.

SITE INSPECTION

John Moneypenny performed an unannounced full on-site targeted inspection on October 10, 2014. The facility was given a score of 30 - In Compliance. Based on the scope and size of the modification, the writer deemed that a site visit was not needed at this time.

Directions in application: From I-64E/I-77S, take exit 54 and go left toward Pax. Turn right onto Paint Creek Rd. Stay on Paint Creek Rd. Until it becomes Sweeneyburg Road. Continue on Sweeneyburg Road until the intersection with N. Sandbranch Rd. Turn left onto N. Sandbranch Rd. And the facility will be on the left in approximately 1.1 miles. (1700 N. Sandbranch Rd., Mt. Hope, WV 25880).

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emission calculations for transfer points, crushing and screening, open stockpiles, and unpaved haulroads are based on AP-42 "Compilation of Air Pollution Emission Factors" and the Air Pollution Engineering Manual and References. The estimated emission calculations were performed by the Applicants' consultant and were checked for accuracy and completeness by the writer.

Table 2: Crushing/Screening/Processing emissions summary:

Emission Source	**Maximum Controlled PM Emissions**		**Maximum Controlled PM_{10} Emissions**	
	lb/hr	**TPY**	**lb/hr**	**TPY**
FUGITIVE EMISSIONS				
Stockpiles	0.30	1.32	0.14	0.62
Unpaved Haulroads	93.85	156.49	27.70	46.19
Paved Haulroads	0.00	0.00	0.00	0.00
Total Fugitive Emissions	*94.16*	*157.81*	*27.84*	*46.81*
POINT SOURCE EMISSIONS				
Equipment Emissions	12.59	24.58	4.46	8.73
Transfer Point Emissions	38.14	56.78	18.04	26.85
Total Point Source Emissions	*50.73*	*81.36*	*22.49*	*35.58*
TOTAL FACILITY EMISSIONS				
Total Facility Emissions	**144.89**	**239.17**	**50.34**	**82.39**

REGULATORY APPLICABILITY

NESHAPS and PSD have no applicability to the proposed facility. The proposed Modification of a non-metallic minerals processing plant is subject to the following state and federal rules:

45CSR7 To Prevent and Control Particulate Matter Air Pollution From Manufacturing Processes and Associated Operations

The facility is subject to the requirements of 45CSR7 because it meets the definition of "Manufacturing Process" found in subsection 45CSR7.2.20. The facility should be in compliance with Subsection 3.1 (no greater than 20% opacity), Subsection 3.7 (no visible emissions from any storage structure pursuant to subsection 5.1 which is required to have a full enclosure and be equipped with a control device), Subsection 4.1 (PM emissions shall not exceed those allowed under Table 45-7A), Subsection 5.1 (manufacturing process and storage structures must be equipped with a system to minimize emissions), Subsection 5.2 (minimize PM emissions from haulroads and plant premises) when the particulate matter control methods and devices proposed within application G40-C013D are in operation.

According to Table 45-7B, for a type 'a' source with a maximum process weight rate of 1,200,000 lb/hour, the maximum allowable emission rate is 50 lb/hour of particulate matter. The maximum emission rate is 12.59 lb/hour of particulate matter according to estimated emissions in fact sheet G40-C013D.

45CSR13 Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits, and Procedures for Evaluation

The proposed Modification is subject to the requirements of 45CSR13. The applicant submitted the proper $1,500 application fee and published a Class I legal advertisement in *The Register-Herald* on December 15, 2016.

45CSR16 Standards of Performance for New Stationary Sources
40 CFR 60 Subpart OOO: Standards of Performance for Nonmetallic Mineral Processing Plants

The proposed Modification is subject to 40 CFR 60 Subpart OOO because it will occur after April 22, 2008 and the plant processes more than 25 tons of rock per hour. The proposed modification will include one (1) triple deck screen, one (1) high frequency screen and six (6) conveyor belts, which are defined as affected facilities in 40 CFR 60 Subpart OOO. The proposed Modification is subject to 45CSR16, which incorporates by reference 40 CFR 60 Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants. The facility should be in compliance with 60.672 (b) no greater than 7% opacity from any transfer point on belt conveyors or from any other affected facility (as defined in 60.670 and 60.671) and no greater than 12% opacity from any crusher when the particulate matter control methods and devices proposed within application G40-C013D are in operation.

45CSR30 Requirements for Operating Permits

In accordance with 45CSR30 Major Source Determination, the rock crushing and screening facility will be a non-major source which is subject to NSPS Subpart OOO. The facility's potential to emit

will be 35.58 TPY of a regulated air pollutant (PM_{10}), not including fugitive emissions, which is less than the 45CSR30 threshold of 100 TPY. Therefore, the facility will continue to be subject to 45CSR30 and classified as a Title V deferred non-major source.

The proposed Modification of Appalachian Aggregates, LLC's non-metallic minerals processing plant is NOT subject to the following state and federal rules:

45CSR14 Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution for the Prevention of Significant Deterioration

The facility will have the potential to emit 81.36 TPY of a regulated air pollutant (PM), not including fugitive emissions, which is less than the 45CSR14 threshold of 250 TPY. This facility is not listed in Table 2, and so fugitive emissions are not included when determining source applicability. Therefore, the proposed Modification is not subject to the requirements set forth within 45CSR14.

AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling was not performed due to the size and proposed location of this facility. This facility will be located Raleigh County, WV, which are currently in attainment for PM (particulate matter), PM_{10} (particulate matter less than 10 microns in diameter) and $PM_{2.5}$ (particulate matter less than 2.5 microns in diameter).

MONITORING OF OPERATIONS

For the purposes of determining compliance with maximum throughput limits, the applicant shall maintain certified daily records and monthly records of the amount of aggregate processed. Also, the applicant shall maintain certified maintenance records. Such records shall be retained on site by the permittee for at least five (5) years and shall be made available to the Director of the Division of Air Quality or his or her duly authorized representative upon request.

RECOMMENDATION TO DIRECTOR

The information contained in this Modification application indicates that compliance with all applicable regulations should be achieved when all proposed particulate matter control methods are in operation. Due to the location, nature of the process, and control methods proposed, adverse impacts on the surrounding area should be minimized. No public comments were received. Therefore, the granting of a G40-C registration to Appalachian Aggregates, LLC . for the Modification of a crushing and screening plant located near Beckley, Raleigh County, WV is hereby recommended.

Thornton E. Martin Jr.

Thornton E. Martin Jr.
Permit Engineer

January 10, 2017
Date