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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3363
Plant ID No.:	057-00057
Applicant:	America's Best Block Inc.
Facility Name:	Keyser Facility
Location:	Mineral County
NAICS Code:	327331
Application Type:	Construction
Received Date:	March 27, 2017
Engineer Assigned:	Thornton E. Martin Jr.
Fee Amount:	$2,000
Date Received:	March 28, 2017
Complete Date:	May 18, 2017
Applicant Ad Date:	March 23, 2017
Newspaper:	*News Tribune*
UTM's:	Easting: 676.28162 km Northing: 4368.40284 km Zone: 17
Description:	Applicant proposes to construct an autoclaved aerated concrete (AAC) block manufacturing facility. The proposed AAC block manufacturing plant will be the first of its kind in the United States.

DESCRIPTION OF PROCESS

The America's Best Block facility will produce AAC block via a process that utilizes sand, fly ash, lime, cement, gypsum and aluminum power or paste as raw materials. The facility has the potential to produce approximately 120,000 cubic meters per day for 300 days and operate 3 shifts per day for an effective working time of 22.5 hours per day. The facility will consist of a raw material receiving and storage area, mixing tanks, autoclave curing ovens, a handling warehouse, and finished product storage.

The production process includes sand delivered to the plant via self-dumping trucks and stored on an open yard. A loader will be used to feed the sand into the sand feeding hopper and then to a ball mill through a belt metering scale and belt conveyor. During this process, water will be added into the ball mill to form sand slurry that will be pumped into three slurry storage tanks.

Fly ash will be delivered to the plant via bulk tank trucks and conveyed into the fly ash powder silo via a pneumatic conveyance device equipped on the tank truck. The fly ash will be measured by a spiral measuring scale that pours into a slurry pool where it is mixed with water. The fly ash and water slurry will be pumped into three slurry tanks.

Lime, cement, and gypsum will be delivered to the plant via bulk tank trucks and conveyed into their respective silos by a pneumatic conveyance device equipped on the tank truck. The silos will be equipped with a gate and single-solenoid feeder beneath the silo body so the cement and gypsum can be sent to an indoor metering scale.

Aluminum powder or paste packed in a bag or barrel will be delivered to the plant for temporary storage. From the storage area, the bags or barrels will be lifted to the first floor and opened manually to pour the aluminum powder or paste into the aluminum suspending liquid mixing tank. Water will be introduced to prepare the aluminum paste for use.

When the raw materials are ready, batching will be performed. Material in powder form (i.e., lime, cement, and gypsum) will be sent to the powder metering scale through screw conveyors for metering and weighing according to the given proportion. Sand slurry or fly ash slurry and recycled scrap slurry will be sent to liquid metering to be scaled to the correct proportion. The aluminum suspended liquid will flow into a metering scale for metering and will travel into the mixer. Upon completion of scaling all of the materials, they will be poured into the mixer individually with the slurry ingredients poured first, followed by the powder ingredients and lastly the aluminum suspended liquid. The metering, feeding, and mixing will be computer controlled. After mixing the slurry, it will be poured into a block mold located on a trolley. Then the trolley will transport the mold into the pre-curing room.

The material will become a “cake” after two to three hours in the pre-curing room. The cake will then be cut to form several sizes of product. Scrap left over from the cutting process will be checked for consistency and recycled back into the slurry mix for use in future molds. Cut cake will be moved to a trolley for transport to the autoclave process.

The cake will enter the autoclave for steaming and hardening. When complete, the hardened finished product will be checked for conformity with specifications, wrapped and moved to the storage yard. Some finished product that is damaged or broken during packaging and transporting will be cut into non-standard block for sale. Other waste product will be moved to a waste storage area. This waste will be crushed in a jaw crusher and stored in a waste silo, to be mixed with sand upstream of the ball mill and used as a raw material in the process.

The primary sources of air emissions at the America’s Best Block facility will be the material handling equipment associated with transferring, mixing and storing of the raw materials and finished product. Several of these sources will be equipped with control devices to reduce particulate matter emissions generated by material handling. PM emissions will also be generated by truck traffic at the site on both paved and unpaved haul

roads.

In addition, American's Best Block is also proposing to install and operate a 15.7 MMBtu/hr natural gas fired boiler at the proposed facility for the production of steam to heat the concrete block in the production process as well as a 2016 Cummins Model QSK50-G5 NR2, 2,220 HP diesel fuel-fired emergency generator.

A summary of the proposed sources and their associated control devices is provided in Table 1-1.

Table 1: Proposed Emission Units

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device [4]
S-1.1.1	E-1.1.8a	Lime Silo	2017	22,054 tpy	New	DC 1.1.8a
S-1.1.2	E-1.1.8b	Gypsum Silo	2017	2,206 tpy	New	DC 1.1.8b
S-1.1.3a	E-1.1.8c	Cement Silo 1	2017	7,351 tpy	New	DC 1.1.8c
S-1.1.3b	E-1.1.8d	Cement Silo 2	2017	7,351 tpy	New	DC 1.1.8d
S-1.1.5a	N/A - Fully Enclosed	Lime Screw Conveyor	2017	22,054 tpy	New	Enclosed
S-1.1.5b	N/A - Fully Enclosed	Gypsum Screw Conveyor	2017	2,206 tpy	New	Enclosed
S-1.1.5c	N/A - Fully Enclosed	Cement Screw Conveyor 1	2017	7,351 tpy	New	Enclosed
S-1.1.5d	N/A - Fully Enclosed	Cement Screw Conveyor 2	2017	7,351 tpy	New	Enclosed
S-2.1.1	N/A - Fully Enclosed	Auto-dosing scale for Lime and Gypsum	2017	24,260 tpy	New	Enclosed
S-2.1.3	N/A - Fully Enclosed	Auto-dosing scale for Cement	2017	7,351 tpy	New	Enclosed
S-2.1.5a	N/A - Fully Enclosed	Lime and Gypsum Screw Conveyor	2017	24,260 tpy	New	Enclosed
S-2.1.5b	N/A - Fully Enclosed	Cement Screw Conveyor 3	2017	7,351 tpy	New	Enclosed
S-2.1.14	N/A - Fully Enclosed	Pouring Mixer	2017	31,672 tpy	New	Enclosed
S-P-Waste	Fugitive	Waste Product Pile	2017	2,480 tpy	New	Partially Enclosed
S-1.2.2	E-1.2.5	Waste Jaw Crusher	2017	2,480 tpy	New	DC 1.2.5
S-1.2.3a	E-1.2.5	Waste Belt Conveyor 1	2017	2,480 tpy	New	DC 1.2.5
S-1.2.4	Fugitive	Waste Roll Crushing Mill	2017	2,480 tpy	New	--
S-1.2.7	N/A - Fully Enclosed	Waste Bucket Elevator	2017	2,480 tpy	New	Enclosed
S-1.2.8	E-1.1.8e	Waste Silo	2017	2,480 tpy	New	DC 1.1.8e

Emission Unit ID[1]	Emission Point ID[2]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Type[3] and Date of Change	Control Device [4]
S-1.2.3b	Fugitive	Waste Belt Conveyor 2	2017	2,480 tpy	New	Partially Enclosed
S-S-Sand	Fugitive	Sand Stockpile	2017	42,638 tpy	New	--
S-1.4.1	Fugitive	Sand Feeding Hopper	2017	42,638 tpy	New	--
S-1.4.4	Fugitive	Sand Belt Conveyor	2017	42,638 tpy	New	--
S-1.4.7	Fugitive	Ball Mill	2017	45,119 tpy	New	--
S-1.4.10	N/A - Fully Enclosed	Sand and Waste Mixer	2017	45,119 tpy	New	Enclosed
S-1.3.1	E-1.3.2	Fly Ash Powder Silo	2017	45,579 tpy	New	DC 1.3.2
S-1.3.6	N/A - Fully Enclosed	Fly Ash Metering Scale with Spiral Governor	2017	45,579 tpy	New	Enclosed
S-1.3.9	Fugitive	Fly Ash Slurry Mixer	2017	45,579 tpy	New	--
S-DH-Ash	E-1.3.7	Fly Ash Discharge Hopper	2017	45,579 tpy	New	DC 1.3.7
S-Boiler	E-Boiler	Natural Gas-Fired Boiler	2017	15.7 MMBtu/hr	New	N/A
S-ENGEN	E-ENGEN	Emergency Generator	2017	2,220 HP	New	N/a

[1] For Emission Units (or Sources) use the following numbering system:1S, 2S, 3S,... or other appropriate designation.
[2] For Emission Points use the following numbering system:1E, 2E, 3E, ... or other appropriate designation.
[3] New, modification, removal
[4] For Control Devices use the following numbering system: 1C, 2C, 3C,... or other appropriate designation.

In addition to the sources listed in Table 1-1, the America's Best Block facility will have several pieces of equipment that will process material as a water saturated slurry, or will be fully enclosed. PM emissions from these sources are expected to be negligible, and therefore do not require inclusion in the requested permit. However, a summary of these units have been provided in Table 1-2 for informational purposes.

Table 2: Sources with Negligible Expected Air Emissions

Emission Unit ID	**Material Handled**	**Emission Unit Description**	
S-1.2.7	Waste Material	Waste Bucket Elevator	Source Fully Enclosed
S-1.4.10	Waste Material / Sand	Sand and Waste Mixer	Processed as Saturated Slurry
S-1.1.5c	Cement	Concrete Screw Conveyor 1	Source Fully Enclosed
S-1.1.5d	Cement	Concrete Screw Conveyor 2	Source Fully Enclosed
S-2.1.3	Cement	Auto-Dosing Scale for	Source Fully Enclosed
S-2.1.5b	Cement	Concrete Screw Conveyor 3	Source Fully Enclosed
S-1.1.5b	Gypsum	Gypsum Screw Conveyor	Source Fully Enclosed
S-2.1.1	Gypsum / Lime	Auto-Dosing Scale for Lime and Gypsum	Source Fully Enclosed
S-1.1.5a	Lime	Lime Screw Conveyor	Source Fully Enclosed

Emission Unit ID	Material Handled	Emission Unit Description	
S-1.3.6	Fly Ash	Fly Ash Metering Scale with Spiral Governor	Source Fully Enclosed
S-1.3.9	Fly Ash	Fly Ash Slurry Mixer	Processed as Saturated Slurry
NA	Aluminum	Aluminum Mixer 1	Processed as Saturated Slurry
NA	Aluminum	Aluminum Mixer 2	Processed as Saturated Slurry
NA	Multiple	Pouring Mixer	Source Fully Enclosed
NA	AAC Block	Autoclave	No Emissions Generated by Process

Table 3: Approved Listing of Raw Materials

Product Name	Chemical Family	Composition	CAS Number
Aluminum Paste with Mineral Spirit	Paste solution	40% - 90% Aluminum	7429-90-5
		10% - 60% Naptha	64742-48-9
Coal Ash or Fly Ash	Fine Granular Solid	Silicon Dioxide	60676-86-0
		Aluminum Oxide	1344-28-1
		Iron Oxide	1309-37-1
		Titanium Dioxide	12137-20-1
		Calcium Oxide	1305-78-8
		Potassium Hydroxide	1310-58-3
		Sulfur Trioxide	7446-11-9
		Water	7732-18-5
Gypsum	Gypsum Stone	Limestone/Dolomite	13397-24-5
Hydrated Lime	Alkaline Earth Hydroxide	Calcium Hydroxide	1305-62-0
		Magnesium Hydroxide	1309-42-8
		Magnesium Oxide	1309-48-4
		Calcium Carbonate	1317-65-3
		Crystalline Silica	14808-60-7
Sand	Quartz	Aluminum Silicates	N/A
		Quartz	14808-60-7
Portland Cement	Solid Powder	Portland Cement	65997-15-1
		Calcium Sulfate	13397-24-5
		Calcium Carbonate	1317-65-3

Product Name	Chemical Family	Composition	CAS Number
		Calcium Oxide	1305-78-8
		Magnesium Oxide	1309-48-4
		Crystalline Silica	14808-60-7

SITE INSPECTION

Joseph Kreger of the Eastern Panhandle Regional Office (Enforcement Section) performed a site inspection on May 18, 2017. There were no structures close to the site and it appeared as only land clearing was beginning to take place. Mr. Kreger stated the site looks good.

Directions: From Charleston, WV: Take I-77 North to I-79. Take I-79 North toward Clarksburg, WV. At exit 148, take I-68 East toward Cumberland, MD. At exit 40, take ramp right and follow signs for Vocke Rd/Campground Rd. After 0.2 mile turn right on to MD-658 South. After 0.4 mile turn left onto MD-53 S. After 2.7 miles turn right onto US-220. Bear right onto WV-46 East. Turn right onto WV-46 East. Take a left onto Waxler Road/CR-8. The facility will be on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

The estimated emission calculations were performed by the Applicant and were checked for accuracy and completeness by the writer. The proposed emission sources at the America's Best Block facility include sources that will perform various material handling processes, including the transfer, crushing and storage of the various raw materials. The only pollutants these sources will emit to the air are particulate matter (PM), particulate matter less than 10 microns (PM_{10}) and particulate matter less than 2.5 microns ($PM_{2.5}$).

Emissions from several of the proposed sources will be controlled via baghouses that will operate continuously when the new equipment is in operation. Emissions from each of these baghouses were calculated using an estimated outlet grain loading in grains per dry standard cubic feet (gr/dscf), along with the rated flowrate of gas through the baghouse in dry standard cubic feet per minute (dscfm). For the purpose of the calculations, it was assumed that each process and baghouse will operate for 8,760 hours per year.

In addition, minor amounts of fugitive emissions are expected from the material storage piles and possible uncontrolled sources of emissions. Fugitive emissions from these sources were calculated using each source's throughput of material and emission factors from U.S. EPA, AP-42 Section 11.19.2, Section 11.6, Section 11.12 and Section 13.2.4. Control factors were estimated based on the type of enclosure for these units.

Potential emissions from the boiler will include criteria pollutants and hazardous air

pollutants (HAPs) that were calculated using U.S. EPA's AP-42 factors for natural gas external combustion from Section 1.4. These calculations assume an AP-42 default heat content of natural gas of 1,020 BTU/scf. Greenhouse gas emissions were calculated according to 40 CFR 98 Subpart C.

Potential emissions from the diesel fuel-fired emergency generator include oxides of nitrogen (NOX), carbon monoxide (CO), volatile organic compounds (VOC), sulfur dioxide (SO_2) and particulate matter (PM) that were calculated using manufacturer vendor guarantees. HAPs were calculated using U.S. EPA's AP-42 factors for diesel fired engines from Chapter 3.3. Greenhouse gas emissions are calculated according to 40 CFR 98 Subpart C.

Table 4: Hourly Emissions for the Boiler and Emergency Generator

Source	NOx	CO	VOC	SO_2	CO_2e	PM	PM_{10}	$PM_{2.5}$
	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr	lb/hr
Emergency Generator (2,200 HP) (500 Hours)	23.96	4.40	0.47	0.04	2,474	0.13	0.13	0.13
Boiler (15.7 MMBtu/hr) *	1.5	1.3	0.08	0.01	1,839	0.12	0.12	0.12
Total	**25.46**	**5.7**	**0.55**	**0.05**	**4313**	**0.25**	**0.25**	**0.25**

* Emissions based 8,760 hours of operation unless noted otherwise

Table 5: Annual Emissions Summary for the Facility

Source	NOx	CO	VOC	SO_2	CO_2e	PM	PM_{10}	$PM_{2.5}$
	TPY	TPY	TPY	TPY	TPY	TPY	TPY	TPY
Material Handling *	--	--	--	--	--	0.38	0.32	0.26
Dust Collectors *	--	--	--	--	--	6.94	6.94	5.55
Storage Piles *	--	--	--	--	--	0.03	0.01	0.00
Paved and Unpaved Haulroads *	--	--	--	--	--	3.12	0.79	0.11
Emergency Generator (2,200 HP) (500 Hours)	5.99	1.10	0.12	0.01	618	0.03	0.03	0.03
Boiler (15.7 MMBtu/hr) *	5.20	4.36	0.29	0.03	6,207	0.39	0.39	0.39
Total	**11.19**	**5.46**	**0.41**	**0.04**	**6,825**	**10.89**	**8.48**	**6.34**

* Emissions based 8,760 hours of operation unless noted otherwise

REGULATORY APPLICABILITY

PSD has no applicability to the proposed facility. The proposed construction of an autoclaved aerated concrete (AAC) block manufacturing facility is subject to the following state and federal rules:

45CSR4 To Prevent and Control the Discharge of Air Pollutants into the Air Which Causes or Contributes to an Objectionable Odor

According to 45CSR4-3:

> *No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.*

The America's Best Block facility is generally subject to this requirement. However, due to the nature of the proposed processes, production of objectionable odor is unlikely.

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) and Subsection 5.2 (minimize PM emissions from haulroads and plant premises) when the particulate matter control methods and devices proposed within application R13-3363 are in operation.

According to Table 45-7B, for a type 'a' source with a maximum process weight rate of 34,703 lb/hour, the maximum allowable emission rate is approximately 25 lb/hour of particulate matter. The maximum emission rate is 2.29 lb/hour of particulate matter according to the estimated emissions in the permit Application.

45CSR10 To Prevent and Control Air Pollution From the Emission of Sulfur Oxides

The owner or operator of a fuel burning unit(s) which combusts natural gas, wood or distillate oil, alone or in combination, shall be exempt from the requirements of section 8 (Testing, Monitoring, Recordkeeping and Reporting). Therefore only the §45-10-4.1 prohibition of an in stack sulfur concentration greater than 2,000 ppm applies. Because the steam generator will use natural gas exclusively, this requirement should be met.

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 potential to discharge controlled emissions is greater than six (6) pounds per hour and ten (10) tons per year of a regulated air pollutant (NOx), the applicant submitted the $2,000 application fee and published a Class I legal advertisement in the *News Tribune* on March 23, 2017 pursuant to Section 2.24.b. of 45CSR13.

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

Subpart OOO applies to affected facilities in fixed or portable nonmetallic mineral processing plants that commenced construction, reconstruction or modification after August 31, 1983. The affected facilities under this Subpart are each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station. Subpart OOO establishes particulate matter (PM) emissions standards for affected facilities that use capture systems to transport PM to a control device and fugitive opacity standards for affected facilities that do not use capture systems. Subpart OOO also includes monitoring and testing requirements for affected facilities.

America's Best Block uses several raw materials to manufacture AAC block, including cement, lime, fly ash, gypsum and sand. In addition, waste material leftover from the finished product is recycled back as a raw material to the process. NSPS OOO applies only to nonmetallic mineral processing plants, which are defined in 40CFR60.671 as:

> *any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants, or any other facility processing nonmetallic minerals except as provided in §60.670 (b) and (c).*

The only materials processed at the America's Best Block facility that fall into the category of nonmetallic mineral as defined in 40 CFR 60.671 are sand and gypsum. However, the U.S. Environmental Protection Agency (EPA) has provided guidance that concrete reasonably meets the definition of nonmetallic mineral as well. Therefore, the sand, gypsum and waste AAC material handling operations that meet the definition of an affected facility under NSPS OOO will be subject to the emissions standards, monitoring and testing requirements under the rule. Table 6 summarizes the equipment subject to NSPS OOO.

Table 6: 40CFR60, Subpart OOO Sources

Emission Unit ID	Emission Unit Description	Control Device
S-1.2.2	Waste Jaw Crusher	DC 1.2.5
S-1.2.3a	Waste Belt Conveyor 1	DC 1.2.5
S-1.2.4	Waste Roll Crushing Mill	--
S-1.2.7	Waste Bucket Elevator	--
S-1.2.8	Waste Silo	DC 1.1.8e
S-1.2.3b	Waste Belt Conveyor 2	--
S-1.1.2	Gypsum Silo	DC 1.1.8b
S-1.4.4	Sand Belt Conveyor	--
S-1.4.7	Ball Mill	--

45CFR60 Subpart IIII *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*

NSPS Subpart IIII applies to stationary, compression ignition (CI) internal combustion engines (ICE) manufactured after specified dates depending on engine size and type. The proposed emergency generator engine at the America's Best Block facility will be subject to the requirements of Subpart IIII.

The emergency generator will be ordered after July 11, 2005 and is EPA certified for model year 2016 engines. The engine is not a fire pump and will have a model year later than 2007, a maximum power rating of greater than 50 horsepower (HP), and a cylinder displacement less than 30 liters per cylinder. As such, the engine will be subject to the emission limitations for engines in 40 CFR 60.4205(b) and 40 CFR 60.4202(a)(2). In accordance with 40 CFR 60.4211(c), America's Best Block will comply by purchasing an engine certified to the applicable emission standards. The engine will be installed and configured according to the manufacturer's emission-related specifications.

Also, per 40 CFR 60.4207(b), America's Best Block will use diesel with a sulfur content of no more than 15 parts per million (ppm) and either a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent. No recordkeeping or reporting will be required for the emergency generator; additionally, no initial notification under 40 CFR 60.7(a)(1) is required. **[40 CFR 60.4214(b)]**

40CFR60, Subpart Dc *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

NSPS Dc establishes emissions levels for steam generating units not covered under NSPS Subpart Da or Db which are capable of producing at least 2.9 MW (10 MMBtu/hr) of heat input, but less than 29 MW (100 MMBtu/hr) of heat input and were constructed, modified, or reconstructed after June 9, 1989. Since the boiler is new and will have a heat input capacity of 15.7 MMBtu/hr, it will be subject to NSPS Dc. Because the unit will use natural gas exclusively, it is not subject to any SO_2 or PM limits within this subpart. America's Best Block will maintain records of the amount of fuel used in each calendar month.

40CFR63, Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

NESHAP ZZZZ applies to reciprocating internal combustion engines (RICE) located at a major or area source of HAP emissions. The affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions. Thus, emergency generator at the America's Best Block facility is a new affected source under Subpart ZZZZ. In accordance with 40 CFR 63.6590(c), compliance with NESHAP Subpart ZZZZ is met by complying with the NSPS Subpart IIII requirements. No other requirements will apply to the proposed engine under NESHAP Subpart ZZZZ.

45CSR22 Air Quality Management Fee Program

In accordance with 45CSR22 - "Air Quality Management Fee Program", the permittee shall not operate nor cause to operate the permitted facility or other associated facilities on the same or contiguous sites comprising the plant without first obtaining and having in current effect a Certificate to Operate (CTO). Such Certificate to Operate (CTO) shall be renewed annually, shall be maintained on the premises for which the Certificate has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.

The proposed construction of an autoclaved aerated concrete (AAC) block manufacturing facility will not be subject to the following state and federal rules:

45CSR2 To Prevent and Control Particulate Matter Air Pollution From Combustion of Fuel in Indirect Heat Exchangers

The 15.7 MMBtu/hr natural gas fired boiler is for the production of steam within the autoclave to harden the concrete block in the production process. The boiler would be defined as a "process heater" meaning a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

45CSR17 To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter

Requirements for the prevention and control of fugitive particulate matter emissions from materials handling, preparation, storage and other sources are provided in 45CSR17. However, sources subject to 45CSR7 are exempt from the requirements of 45CSR17, per 45CSR17-6. The proposed America's Best Block facility is subject to 45CSR7, and is therefore exempt from 45CSR17.

40CFR63, Subpart JJJJJJ National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

NESHAP JJJJJJ (commonly referred to as the Area Source Boiler MACT) applies to industrial, commercial, and institutional boilers and process heaters located at area sources of HAPs. The boiler is potentially subject to the Area Source Boiler MACT. However, this unit burns only natural gas. Natural gas units are exempt from the rule, per 40 CFR 63.11195(e). As such, this unit is not subject to the Area Source Boiler MACT.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Total HAP emissions from the entire facility are less than 0.13 pounds per hour.

AIR QUALITY IMPACT ANALYSIS

Since the construction is defined as minor in 45CSR14, no modeling was performed.

RECOMMENDATION TO DIRECTOR

The information contained in this construction 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. Therefore, the granting of a Rule 13 registration to America's Best Block Inc. for the construction of their autoclaved aerated concrete (AAC) block manufacturing facility located in Keyser, Mineral County, WV is hereby recommended.

Thornton E. Martin Jr.
Permit Engineer

May 18, 2017
Date