Oldcastle dba Young Block Company
Air Quality Permit #1319

Technical Support Document
January 2008

I. General Comments:

A. Company Information

1. Oldcastle dba: Young Block Company.
2. 2200 W. Gardner Lane, Tucson, AZ 85705

B. Background

Young Block Company first applied for an air quality permit in the early 1970's. Following a permit call letter issued in August 24, 2005, the source submitted renewal application dated June 13, 2006. This Technical Support Document addresses the second renewal of the five-year permit.

C. Attainment Classification

This source is located in a region that is in attainment for all criteria pollutants.

II. Source Description

The facility produces concrete blocks in varying sizes, colors and surface finishes. Potential emission sources include conveyor belts, silos, natural gas fired kilns and the on site vehicle transportation of process materials (fugitive emissions).

A. Process Description

Sand and gravel are transported from a storage bin by a conveyor to an enclosed mixer. Portland cement is pneumatically unloaded into an elevated storage silo from an enclosed cement hauler. The cement is then transported from the silo by an enclosed auger to the mixer. The materials are combined with water and the mixture is transported to the block machine by a skip hoist in Plant #1 and the conveyor in Plant #2. Molded blocks are then transported to natural gas fired kilns for curing. After curing, the blocks are stacked on wooden pallets and transported by fork lift to the storage yard.

B. Air Pollution Control Equipment

Dust collectors (baghouses) control emissions from silos with an efficiency of approximately 99.6% and spray-bars are utilized to control dust elsewhere along the process. Fugitive emissions from haul roads are controlled by application of water using a water truck.

III. Regulatory History

A. Testing & Inspections

Past enforcement actions worth noting include:

September 1993: Notice of Violation (NOV) issued for the failure to obtain an operating permit for the brick/block manufacturing plant. This enforcement action was adequately resolved and subsequently closed in December 1993.

May 1998: NOV issued for failure to install a submerged fill tube in the underground gasoline storage tank. This enforcement action was adequately resolved and subsequently closed in June, 1998.

January 2002 This most recent inspection found the source to be in non compliance with the permit monitoring conditions; As a result, the source was issued a compliance status letter on 04/05/02 and following review of the response and submitted documentation, the source was then found to be in substantial compliance with the permit conditions on 05/03/02.

B. Excess Emissions

None reported and none recorded.

IV. Emissions Estimates

Emission estimates for the facility are derived from the use of AP-42 emission factors and are presented in the potential to emit document. The following table outlines Young Block Company's total (uncontrolled) potential to emit (operating 8760 hr/yr) and allowable (controlled) potential to emit.

Pollutant	Un-controlled Tons per Year	Controlled Tons per Year
Nitrogen Oxides (NOx)	3.01	3.01
Carbon Monoxide (CO)	2.52	2.52
Volatile Organic Compounds (VOC)	0.17	0.17
Particulate Matter (as PM_{10})	35.16	1.33
Sulfur Oxides (SOx)	<0.1	<0.1
Hazardous Air Pollutants (HAPs)	0.1	0.1

V. Applicable Requirements

This facility is a Class III, True Minor, Stationary source.

Abbreviations: Code of Federal Regulations (CFR)
New Source Performance Standards (NSPS)
Pima County Code (PCC)

The following NSPS rule could but do not apply for the following reasons:

CFR Part 60 NSPS:

40 CFR 60.674 Subpart OOO - Standards of performance for Nonmetallic Mineral Processing Plants, Monitoring of Operations:
This regulation does not apply because the source is not an effected facility as defined by the rule.

(PCC) Title 17, Chapter 17.16:

17.16.010	Local rules and standards; Applicability of more than one standard
17.16.020	Noncompliance with applicable standards
17.16.040	Standards and applicability (Includes NESHAP)
17.16.050	Visibility limiting standard
17.16.060	Fugitive dust producing activities
17.16.100	Particulate materials
17.16.110	Storage piles
17.16.130	Applicability
17.16.370	Standards of performance for gravel or crushed stone processing plants
17.20.010	Testing requirements
17.20.040	Concealment of emissions
17.24.020	Retention of records

VI. Permit Contents

[All applicable regulations are referenced to PCC]

A. Applicability:

The Specific Conditions address the following operations:

- Materials Processing (Sand, Gravel, Portland Cement)
- Fuel Burning Equipment (Natural Gas Fired Kilns)
- Facility-Wide Operations

B. Emission Limits & Standards:

Materials Processing:

Visibility Limiting Standard	17.16.050.A, 17.16.150.D, 17.16.050.D.2 17.16.050.D.3
Pollution Control Requirement	17.12.185.A.2, 17.16.100.A & 17.16.370.D
Fugitive Emission Standards	17.16.060.A, 17.16.060.A.1, 17.16.060.A.2, 17.16.100.C & 17.16.110.A
Opacity Standard	17.16.040

Fuel Burning Equipment:

Opacity Standard	17.16.040
Fuel Limitation	17.12.185.A.2 & 17.16.165.G

Facility-Wide Operations:

Air Pollution Control Equipment	17.16.020.B
Concealment of Emissions	17.20.040
Local rules and standards-applicability of more than one standard	17.16.010.B
Facility Changes	17.12.185.A.2

C. Monitoring Requirements: **(17.12.185.A.3)**

Materials Processing: Non additional

Fuel Burning Equipment: Non additional

D. Recordkeeping Requirements: **(17.12.185.A.4)**

Visibility Emission Checks	
Retention of Records and Location	17.24.020.A, 17.12.080

E. Reporting Requirements: **(17.12.185.A.5)**

Emissions Inventory Reporting 17.12.320

F. Testing Requirements: **(17.12.050, 17.12.185.A.3.a & 17.20.010)**

Methodology of testing to determine compliance	
Compliance with the Opacity Standard	
Compliance with the Fuel Limitation Standard	
Approved Alternative test Method	17.12.045.D

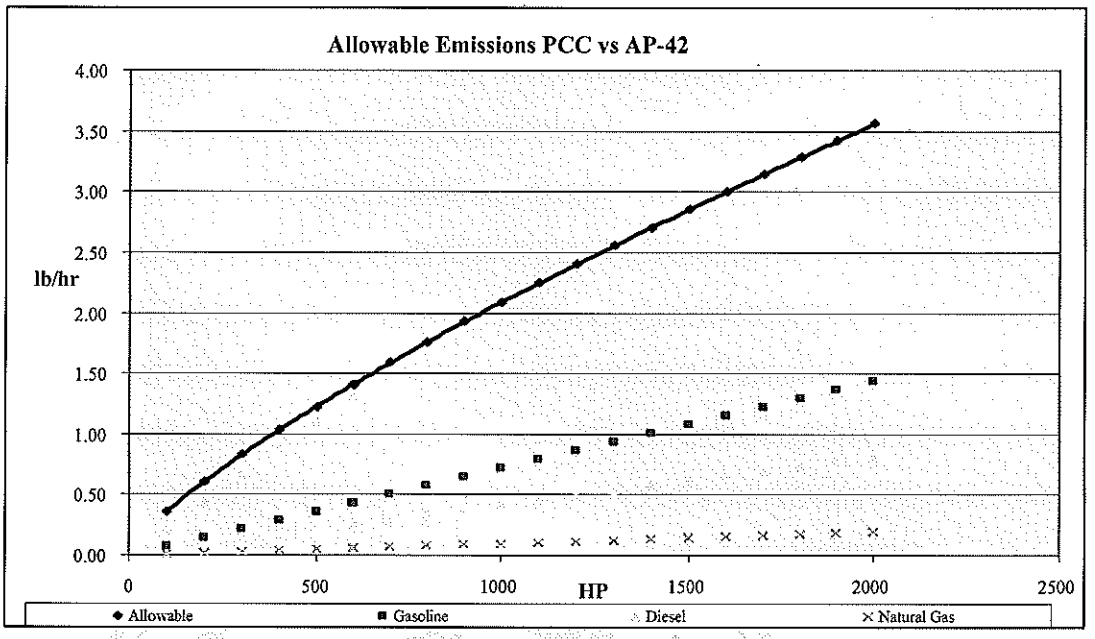
G. Additional Permit Requirements:

Compliance with permit conditions.
Permit revision, reopening, revocation and reissuance, or termination for cause
Duty to provide information
Severability Clause

H Miscellaneous comments:

1. Particulate Matter

PCC 17.16.165.C.1 limits the emissions of particulate matter from fossil fuel fired industrial and commercial equipment. This rule has not been included in the permit as allowable emissions are well above potential emissions. The following Chart illustrates the fact:



AP-42 estimated emissions are demonstrably less than allowable emissions. Therefore, it is not necessary to include the standard in the permit explicitly but, by reference in Attachment 1.

2. Sulfur Dioxide:

Compliance with the fuel limitation requirement of PCC 17.16.165.G (II.B.2 of the Specific Conditions) shall ensure compliance with the Sulfur Dioxide Standard of PCC 17.16.165.E which limits the emission of SO_2 to 1.0 pound per million BTU heat input, when burning low sulfur fuel. The definition of low sulfur fuel (PCC 17.04.340.A. "Low Sulfur Fuel") is fuel oil containing less than 0.9 percent sulfur by weight. AP-42 Appendix A, page A-5 states the heating value of diesel fuel is 137,000 BTU per gallon. Thus, 1 million BTU of heat input is equivalent to 7.3 gallons of diesel. At 7.05 lbs per gallon, 51.47 lbs of diesel will produce 1 million BTU. At 0.9% 51.47 lbs of diesel contains 0.46 lbs of sulfur. Combined with Oxygen to form SO_2 and assuming 100% of the sulfur in the fuel forms SO_2 this would yield 0.92 lb SO_2 per 1MMBtu. Thus, low sulfur fuel oil will produce 0.92 lbs of SO_2 per million BTU of heat input. This is roughly 8% less than the prescribed 1.0 pound SO_2 per million BTU (PCC 17.16.165.E). Likewise, distillate, residual, and other such fuel oils range from 0.84 to 0.94 lbs of SO_2 per million BTU. Thus, it is not necessary to include the standard in the permit explicitly but, by reference in Attachment 1.

VII. IMPACTS TO AMBIENT AIR QUALITY

Not a major source thus no studies are required.

VIII. CONTROL TECHNOLOGY DETERMINATION

No control technologies needed to be determined.

IX. PREVIOUS PERMIT CONDITIONS

No previous permit conditions that need to be included in this permit revision.