Economic and Small Business Analysis – Revisions to the Nonmetallic Mineral Processing Plants (Subpart OOO) NSPS

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SECTION 1
INTRODUCTION

To meet the requirements of section 111(b)(1)(B) of the CAA, the Environmental Protection Agency (EPA) is currently conducting the second review of the new source performance standards (NSPS) for non-metallic mineral processing plants (NMPP). The NMPP NSPS was promulgated on August 1, 1985 (40 CFR Part 60 subpart OOO, 50 FR 31328) and subsequently reviewed in 1997. Subpart OOO requires new, modified, or reconstructed affected facilities at NMPP to achieve emission levels that reflect the best demonstrated system of continuous emission reduction, considering cost, non-air quality health, environmental, and energy impacts. These emission levels, referred to as "best demonstrated technology (BDT)," are specified in subpart OOO.

The purpose of this report is to provide economic and small business impact analyses for the requirements of this NSPS. We include revenue and other economic data for affected industries and businesses in the industry profile for this NSPS, and that profile is included in this report. The analysis will focus on estimating such impacts by providing annualized cost as a percent of sales or revenues for firms in industries likely to be affected by this NSPS. This analysis is meant to meet the requirements of the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA). The annualized costs are those found in the memo "Cost, Environmental and Energy Impacts for the Final Revisions to the NSPS for Non-Metallic Mineral Processing Plants (40 CFR Part 60, subpart OOO)," prepared by RTI in April, 2009.

In summary, we find there to be minimal economic impacts associated with this NSPS, and no SISNOSE (significant impacts on a substantial number of small entities) resulting from implementation of this final rule.

SECTION 2
INDUSTRY PROFILE

2.1 NAICS 21231—Stone Mining and Quarrying

Stone is a naturally occurring aggregate of minerals that is typically used in one of two forms—dimension stone and crushed stone. Dimension stone is natural rock that has been quarried for the purpose of obtaining blocks or slabs that meet certain specifications, such as size, shape, color and grain (USGS, 2007a). Dimension stone is primarily used in construction. For example, it is often cut and shaped into ashlars, counter tops, flagstone, and rough block (USGS, 2007a).

Crushed stone is rock that has first been mined from the ground then pulverized or crushed into smaller pieces of a desired size. This material serves as a raw material in a variety of products such as concrete (USGS, 2007b). It is important to note that while the two seem similar, crushed stone is different from gravel, which is produced from a natural process of weather and erosion.

The purpose of this industry profile is to characterize the stone mining industry and the firms involved. First, the industry is defined using the North American Industry Classification System (NAICS). Next, we examine historical data on production, international trade, prices, and firm characteristics.

2.1.1 Industry Description

The stone mining and quarrying industry is classified under NAICS code 21231. It is defined as all establishments that are either 1) primarily engaged in developing the mine site, mining or quarrying dimension stone or crushed and broken stone or 2) primarily engaged in beneficiating stone (e.g., crushing, grinding, washing, screening, pulverizing, and sizing) (U.S. Census Bureau, 2002a).

Beneath this 5-digit NAICS code, the stone mining industry is further categorized into different segments at the 6-digit NAICS code level. These segments include Dimension Stone Mining (212311), Crushed and Broken Limestone Mining (212312), Crushed and Broken Granite Mining (212313), and Other Crushed and Broken Stone Mining and Quarrying (212319).

2.1.2 U.S. Stone Mining and Quarrying Production

This profile's primary source for Stone Mining production data was the U.S. Geological Survey (USGS) Mineral Yearbooks published each year for Dimensional and Crushed Stone. The data reported in these yearbooks is collected through voluntary surveys of stone mining operations. The USGS independently determines which operations will be surveyed by using a variety of sources to compile a list of all stone mining operations in the US. These surveys are used to determine how much dimension and crushed stone is being produced in the US, where it's being produced, and what it's being used for (USGS, 2007a).

Between 2000 and 2006, production of dimension stone remained relatively constant around 1.3 million metric tons per year. In 2006, 1,330,000 metric tons of dimension stone was produced inside the United States, nominally valued at $265 million (Table 2-1).[1] Much of this dimension stone was produced in states in the mid-west and the northern east coast (Table 2-2). The largest dimension stone producing state in 2006 was Wisconsin, which accounted for 22% of all dimension stone produced. The greatest single use for dimension stone in the US in 2006 was as rough blocks for building and construction (Table 2-4). This use accounted for approximately 22% of all dimension stone produced in the United States.

During this same 5-year time period, production of crushed stone grew around 2% each year. In 2006, 1.7 billion metric tons of crushed stone were sold or used by producers in the United States (Table 2-1). This stone was nominally valued at $13.8 billion. The states producing the largest amount of crushed stone are Texas, Florida, and Pennsylvania (Table 2-3). These states account for approximately 22% of the crushed stone produced in the US. Nearly 40% of crushed stone is used in the construction industry (Table 2-5).

2.1.3 International Trade

International trade is a growing part of the stone mining industry. A summary of the nominal value of imports and exports of dimension and crushed stone for 2000 to 2006 can be found in Table 2-6. As this table reports, imports of dimension stone grew very quickly between 2000 and 2006. Specifically, imports of dimension stone grew 154% during this 5 year period (an average growth rate of 30% per year). Imports of crushed stone also rose rapidly during this period. Between 2000 and 2006, crushed stone imports grew 96% (an average growth rate of 19% per year).

[1] All monetary values are reported in nominal (not inflation-adjusted) dollars unless otherwise noted.

The nominal value of exports of dimension and crushed stone has also grown significantly in the past 5 years. Between 2000 and 2006, the nominal value of dimension stone exports grew approximately 27% (around 5% each year), while exports of crushed stone grew 93% (around 19% each year).

Table 2-1. Dimension and Crushed Stone Sold or Used by US Producers: 2000 to 2006

	2000	2001	2002	2003	2004	2005	2006
Dimension Stone							
Quantity (1,000 metric tons)	1,320	1,220	1,260	1,340	1,460	1,360	1,330
Value ($1,000)	235,000	263,000	254,000	268,000	281,000	269,000	265,000
Crushed Stone							
Quantity (1,000 metric tons)	1,550,000	1,590,000	1,510,000	1,530,000	1,630,000	1,700,000	1,720,000
Value ($1,000)	8,290,000	8,870,000	8,650,000	9,060,000	9,890,000	12,400,000	13,800,000

Source: U.S. Geological Survey. 2007a. 2006 Minerals Yearbook, Dimension Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_dimension/myb1-2006-stond.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2007b. 2006 Minerals Yearbook, Crushed Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_crushed/myb1-2006-stonc.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2005a. 2004 Minerals Yearbook, Dimension Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_dimension/dstonmyb04.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2005b. 2004 Minerals Yearbook, Crushed Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_crushed/cstonmyb04.pdf>. As obtained on March 25, 2008.

Table 2-2. Dimension Stone Production by State: 2006

State	Quantity (1,000 Metric Tons)	Value ($1,000)
Wisconsin	297	35,400
Indiana	233	39,000
Vermont	100	27,600
Massachusetts	82	11,500
Georgia	81	19,100
North Carolina	41	17,800
California	40	10,000
New York	39	3,860
Pennsylvania	38	12,800
Texas	31	12,600
Total	1,330	265,000

Source: Geological Survey. 2007a. 2006 Minerals Yearbook, Dimension Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_dimension/myb1-2006-stond.pdf>. As obtained on March 25, 2008.

Table 2-3. Crushed Stone Production by State: 2006

State	Quantity (1,000 Metric Tons)	Value ($1,000)
Texas	136,000	824,000
Florida	127,000	1,340,000
Pennsylvania	111,000	788,000
Georgia	90,800	816,000
Missouri	83,600	631,000
North Carolina	77,500	852,000
Illinois	75,400	573,000
Virginia	74,800	814,000
Ohio	68,500	427,000
Tennessee	65,300	517,000
Total	1,720,000	13,800,000

Source: U.S. Geological Survey. 2007b. 2006 Minerals Yearbook, Crushed Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_crushed/myb1-2006-stonc.pdf>. As obtained on March 25, 2008.

Table 2-4. Dimension Stone by Major Use: 2006

State	Quantity (1,000 Metric Tons)	Value ($1,000)
Rough blocks for building and construction	294	$45,500
Other[a]	213	50,300
Flagging	158	15,500
Ashlars and partially squared pieces	147	27,000
Curbing	129	20,500
Total	1,330	265,000

[a]Other includes panels and veneer, tile, blackboards, exports, uses not specified, and uses not listed.

Source: Geological Survey. 2007a. 2006 Minerals Yearbook, Dimension Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_dimension/myb1-2006-stond.pdf>. As obtained on March 25, 2008.

Table 2-5. Crushed Stone by Major Use: 2006

State	Quantity (1,000 Metric Tons)	Value ($1,000)
Construction	673,348	5,466,700
Chemical and metallurgical	101,608	660,890
Agricultural	11,960	104,800
Special	5,014	107,680
Other miscellaneous uses	12,070	49,930
Total	1,720,000	13,800,000

Source: U.S. Geological Survey. 2007b. 2006 Minerals Yearbook, Crushed Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_crushed/myb1-2006-stonc.pdf>. As obtained on March 25, 2008.

Table 2-6. Dimension and Crushed Stone Import and Export Data: 2000 to 2006

	2000	2001	2002	2003	2004	2005	2006
Dimension Stone							
Exports ($1,000)	59,800	73,500	64,400	63,500	63,700	66,100	76,000
Imports ($1,000)	986,000	1,070,000	1,190,000	1,390,000	1,790,000	2,180,000	2,500,000
Crushed Stone							
Exports ($1,000)	29,700	35,600	54,000	45,600	54,500	50,500	57,300
Imports ($1,000)	105,000	110,000	124,000	143,000	149,000	194,000	206,000

Source: U.S. Geological Survey. 2007a. 2006 Minerals Yearbook, Dimension Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_dimension/myb1-2006-stond.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2007b. 2006 Minerals Yearbook, Crushed Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_crushed/myb1-2006-stonc.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2005a. 2004 Minerals Yearbook, Dimension Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_dimension/dstonmyb04.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2005b. 2004 Minerals Yearbook, Crushed Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_crushed/cstonmyb04.pdf>. As obtained on March 25, 2008.

2.1.4 Market Prices

Dimension stone tends to receive higher prices than crushed stone. For example, in 2006, the average nominal unit value for granite dimension stone was $254 per ton, while the average nominal unit value of crushed granite was $9.60 per ton. However, prices also differ based on type of stone. For example, the average nominal unit value for marble dimension stone is $390 per ton, approximately $140 more than the nominal unit value for granite dimension stone. A summary of the nominal unit values of dimension stone and crushed stone in recent years is provided in Table 2-7. Between 2000 and 2006, the nominal unit value of dimension stone only grew approximately 4% each year. In contrast, the unit value of crushed stone grew approximately 10% over the same time period.

Table 2-7. Average Unit Values for Dimension and Crushed Stone Sold or Used by US Producers: 2000 to 2006

	2000	2001	2002	2003	2004	2005	2006
Dimension Stone							
Unit Value ($ per metric ton)	178.0	215.6	201.6	200.0	192.5	197.8	199.2
Crushed Stone							
Unit Value ($ per metric ton)	5.3	5.6	5.7	5.9	6.1	7.3	8.0

Source: U.S. Geological Survey. 2007a. 2006 Minerals Yearbook, Dimension Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_dimension/myb1-2006-stond.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2007b. 2006 Minerals Yearbook, Crushed Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_crushed/myb1-2006-stonc.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2005a. 2004 Minerals Yearbook, Dimension Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_dimension/dstonmyb04.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2005b. 2004 Minerals Yearbook, Crushed Stone. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/stone_crushed/cstonmyb04.pdf>. As obtained on March 25, 2008.

Producer price data for the stone mining industry was obtained from the Bureau of Labor Statistics (BLS) to better understand how prices received by stone mining companies moved relative to prices received by companies in other industries. According to the BLS, the Producer Price Index (PPI) for the stone mining industry (which measures the nominal prices firms receive for their products) rose an average of 6% each year. This growth rate is relatively slow when compared with prices received by firms in other industries. For example, during the same 6-year time period, prices received by other U.S. mining firms have risen an average of 17% each year during the same period. This data is presented in Table 2-8.

2.1.5 Industry Concentration

Data on the concentration of the stone mining firms was obtained from industry reports prepared by Dun and Bradstreet (D&B). These industry reports are based on data that companies operating within various segments of the stone mining industry voluntarily provided D&B. As a result, these reports necessarily exclude information on firms that did not provide financial information to D&B.

D&B received financial information from 199 companies operating in the Dimension Stone Mining industry segment. These companies earned an estimated $148 million in sales in

2007. Approximately 40% of these sales were generated by the 10 largest companies reporting financial information to D&B. Approximately 60% of sales was generated by the 25 largest companies (D&B, 2008a).

In addition, D&B received financial information from 125 companies operating in the Other Crushed and Broken Stone industry segment. These companies earned an estimated $376 million in sales in 2007. Approximately 70% of these sales were generated by the 10 largest companies reporting financial information to D&B. Approximately 85% of sales was generated by the 25 largest companies (D&B, 2008b).

This information would suggest that the stone mining industry is potentially highly concentrated. However, since data was not available for all industry segments and only a portion of companies in this industry provided financial information, this assessment cannot be conclusive.

2.1.6 Firm Characteristics: Average Revenue and Employment

To better understand the characteristics of firms operating in the stone mining industry, this profile relied heavily on data collected by the U.S. Census Bureau. In particular, the 2002 Economic Census and annual Statistics of U.S. Businesses were the primary sources of data presented bellow.

Table 2-8. Producer Price Index Industry Data: 2000 to 2006

	Stone Mining and Quarrying (NAICS 21231)		Total Mining Industries	
Year	PPI	Annual Percentage Change in PPI	PPI	Annual Percentage Change in PPI
2000	147.3	4%	113.5	46%
2001	152.2	3%	114.3	1%
2002	156.1	3%	96.6	-15%
2003	160.2	3%	131.3	36%
2004	166.1	4%	153.4	17%
2005	176.7	6%	201	31%
2006	192.7	9%	208.7	4%

Source: U.S. Bureau of Labor Statistics (BLS). 2008. "Producer Price Index Industry Data: Customizable Industry Data Tables." Available at <http://www.bls.gov/ppi/>. As obtained on March 25, 2008.

It is important to note that while the USGS surveys attempts to independently identify all stone mining operations, the U.S. Census Bureau is only interested in collecting economic data

for private enterprises (it excludes most government entities). In addition, the U.S. Census Bureau classifies each establishment it surveys into various NAICS industries based on the establishments own self-description, not based on an independent assessment. As a result of these and other variations, differences between USGS and U.S. Census data can be expected.

2.1.6.1 Average Revenue and Employment

According to the US Economic Census, there were 1,362 firms occupying this industry, owning 2,514 establishments in 2002.[2] These firms earned a cumulative total of over $9.3 billion in revenue (measured in 2002 dollars) or an average of $6.8 million per firm. A complete summary of 2002 sales and employment data for firms in these industries is reported in Table 2-9 by enterprise size (as measured by the number of employees).

Table 2-9. Employment and Receipts Data by Enterprise Size (NAICS 21231): 2002

	Employment Size of the Enterprise						
	0–4	**5–9**	**10–19**	**20–99**	**100–499**	**500+**	**Total**
Firm	480	223	252	257	79	71	1,362
Establishments	480	226	255	360	263	930	2,514
Employment	796	1,515	3,454	8,947	7,176	23,211	45,099
Receipts ($1,000)	$172,291	$199,660	$495,021	$1,468,369	$1,322,523	$5,637,963	$9,295,827
Average Receipts per Firm ($1,000)	$359	$895	$1,964	$5,713	$16,741	$79,408	$6,825

Source: U.S. Bureau of the Census. 2002b. Statistics of U.S. Businesses: Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise for the United States, All Industries 2002. Available at <http://www.census.gov/csd/susb/susb02.htm>. As obtained on March 17, 2008.

According to the Small Business Administration (SBA) standards, a small business in the stone mining and quarrying industry is defined as any firm employing 500 employees or less (SBA, 2008). Under this definition, over 95% of firms in the stone mining industry would be considered "small businesses." In 2002, these small businesses earned an average of $3.7 million in revenue and employed 17 workers.

[2] An establishment is a single physical location at which business is conducted or where services or industrial operations are performed. An enterprise is a business organization consisting of one or more domestic establishments under common ownership or control. A firm is defined as that part of an enterprise tabulated within a particular industry, state or metropolitan area. For example, an enterprise with establishments in more than one industry would be counted as a firm in each industry in which it operates an establishment, but is also counted as only one firm in national all-industry tabulations. Thus, summing the firms across industries would overstate the number of unique firms. However, employment size is determined only for the entire enterprise. As a result, counterintuitive results are possible, for example, only 100 employees in a category of firms with 500 employees or more in a particular state (U.S. Bureau of the Census, 2004b).

Between 2002 and 2005, total industry employment rose by approximately 9%. During this same period, firms classified as "small businesses" slightly increased their share of total employment, from 49% in 2002 to 50% in 2005 (Table 2-10). A summary of 2005 employment data for firms is reported in Table 2-11.

2.1.6.2 The Cost of Production

Firms mining stone require labor, capital, and supplies such as fuel and intermediate goods. Data was collected from the 2002 Economic Census to determine how much firms spend on each factor of production. In 2002, stone mining firms spent $5.7 billion on these inputs. As Figure 2-1 illustrates, over 52% of this spending was used to acquire supplies (U.S. Census Bureau, 2004b).

Table 2-10. Distribution of Employment Between Small and Large Firms: 2002 to 2005

	Firms with <500 Employees	Firms with 500+ Employees	Total
2002	21,888	23,211	45,099
2003	22,062	22,520	44,582
2004	23,776	22,848	46,624
2005	24,654	24,669	49,323

Sources: U.S. Bureau of the Census. 2005. Statistics of U.S. Businesses: Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise for the United States, All Industries 2005. Available at <http://www.census.gov/csd/susb/susb05.htm>. As obtained on March 17, 2008.

U.S. Bureau of the Census. 2004a. Statistics of U.S. Businesses: Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise for the United States, All Industries 2004. Available at <http://www.census.gov/csd/susb/susb04.htm>. As obtained on March 17, 2008.

U.S. Bureau of the Census. 2003. Statistics of U.S. Businesses: Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise for the United States, All Industries 2003. Available at <http://www.census.gov/csd/susb/susb03.htm>. As obtained on March 17, 2008.

U.S. Bureau of the Census. 2002b. Statistics of U.S. Businesses: Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise for the United States, All Industries 2002. Available at <http://www.census.gov/csd/susb/susb02.htm>. As obtained on March 17, 2008.

Table 2-11. Employment and Receipts Data by Enterprise Size (NAICS 21231): 2005

	Employment Size of the Enterprise						
	0–4	**5–9**	**10–19**	**20–99**	**100–499**	**500+**	**Total**
Firms	491	251	278	303	88	64	1,475
Establishments	491	251	280	397	274	992	2,685
Employment	796	1,679	3,748	10,619	7,812	24,669	49,323

Source: U.S. Bureau of the Census. 2005. Statistics of U.S. Businesses: Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise for the United States, All Industries 2005. Available at <http://www.census.gov/csd/susb/susb05.htm>. As obtained on March 17, 2008.

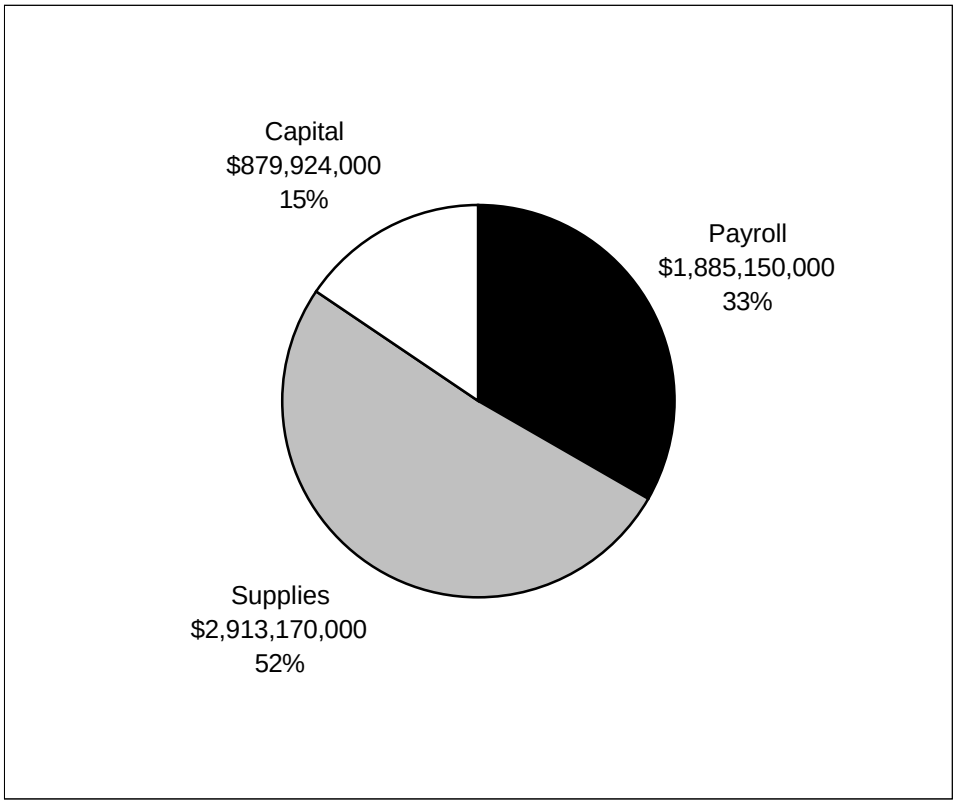

Figure 2-1. Distribution of the Cost of Production Between Capital, Labor, and Supplies

2.1.6.3 Profitability of Stone Mining and Quarrying Firms

The profitability of firms in the stone mining and quarrying industry differs depending on which part of the stone mining industry they occupy. For example, according to profit ratios computed by Risk Management Associates for the 2006–2007 fiscal year, firms involved in Crushed Limestone Mining (NAICS 212312) earned a 11.1% average return on their sales.

However, firms involved mining non-classified crushed stone (NAICS 212319) only earned an average return of 8.6%.[3]

The profitability of firms within also depends on the size of the firm as measured in net sales. Table 2-12 and Table 2-13 provide estimates of the mean profit (before taxes) to net sales ratios for firms involved in Crushed Limestone Mining (NAICS 212312) and Other Crushed Stone Mining (NAICS 212319) for the 2006–2007 fiscal year.[4] As these ratios demonstrate, firms in the Crushed Limestone Mining industry with sales over $25 million received a 10.6% average return on net sales, while firms with assets valued between $5 and $10 million only received a 12.2% average return. Similarly, firms in Other Crushed Stone Mining with sales over $25 million received a 11.6% average return on net sales, while firms with assets valued between $1 and $3 million only received a 12.2% average return.

Table 2-12. Mean Ratios of Profit before Taxes as a Percentage of Net Sales for Crushed Limestone Mining (NAICS 212312), Sorted by Value of Assets

Fiscal Year	Total Number of Statements	0 to $1 Million	$1 Million to $3 Million	$3 Million to $5 Million	$5 Million to $10 Million	$10 Million to $25 Million	$25 Million and Over	All Firms
4/1/2006–3/31/2007	71	N/A	N/A	N/A	12.2	11.2	10.6	11.1

Source: Risk Management Association (RMA). 2008. *Annual Statement Studies 2007-8.* Pennsylvania: RMA, Inc.
Note: N/A means that ratios of profit before taxes as a percentage of net sales are unavailable available for the asset value category.

[3] Profit ratios were calculated by Risk Management Associates by dividing net income into net sales. These data were obtained from income statements for firms occupying each industry segment.
[4] Profit ratios for other segments of the stone mining industry were unavailable.

Table 2-13. Mean Ratios of Profit before Taxes as a Percentage of Net Sales for Other Crushed Stone Mining (NAICS 212319), Sorted by Value of Assets

Fiscal Year	Total Number of Statements	0 to $1 Million	$1 Million to $3 Million	$3 Million to $5 Million	$5 Million to $10 Million	$10 Million to $25 Million	$25 Million and Over	All Firms
4/1/2006–3/31/2007	54	N/A	17.1	N/A	N/A	3.6	11.6	8.6

Source: Risk Management Association (RMA). 2008. *Annual Statement Studies 2007-2008.* Pennsylvania: RMA, Inc.
Note: N/A means that ratios of profit before taxes as a percentage of net sales are unavailable available for the asset value category.

2.2 NAICS 212321—Construction Sand and Gravel Mining

Sand and gravel are among the most accessible and widely used natural resources in the United States (USGS, 2006c). These materials have been particularly utilized in building and construction. For example, sand and gravel are used to make cement, used as construction fill, and used in the production of construction materials like concrete blocks, bricks, and pipes (MII, 2008).

The purpose of this section of the industry profile is to characterize the construction sand and gravel industry and the firms involved. First, the industry is defined using the North American Industry Classification System (NAICS). Next, we examine historical data on production, international trade, prices, and firm characteristics.

2.2.1 Industry Description

The construction sand and gravel mining industry is classified under NAICS code 212321. This industry is comprised of establishments primarily engaged in one or more of the following activities: 1) operating commercial grade (i.e., construction) sand and gravel pits; 2) dredging for commercial grade sand and gravel; and 3) washing, screening, or otherwise preparing commercial grade sand and gravel (U.S. Census Bureau, 2002a).

2.2.2 U.S. Construction Sand and Gravel Mining Production

This profile's primary source of production data for the construction sand and gravel industry was the U.S. Geological Survey (USGS) Mineral Yearbook published each year for Construction Sand and Gravel. The data reported in this yearbook is collected through voluntary surveys of construction sand and gravel mining operations. The USGS independently determines

which operations will be surveyed by using a variety of sources to compile a list of all construction sand and gravel mining operations in the US. These surveys are used to determine how much construction sand and gravel is being produced in the US, where it's being produced, and what it's being used for (USGS, 2007c).

Between 2000 and 2006, construction sand and gravel production grew approximately 4% each year (Table 2-13). In 2006, the USGS reported that over 1 billion metric tons of construction sand and gravel has been produced that year. This sand and gravel was valued to be worth over $8.5 billion. Approximately 51% of the sand and gravel produced in 2006 was mined in only 10 states (Table 2-14). The largest construction sand and gravel producing state was California, which accounted for 12% of all sand and gravel produced. 20% of all sand and gravel produced was used as concrete aggregate (Table 2-15).

Table 2-13. U.S. Production of Construction Sand and Gravel: 2000 to 2006

	2000	2001	2002	2003	2004	2005	2006
Quantity (1,000 metric tons)	1,120,000	1,130,000	1,130,000	1,160,000	1,240,000	1,280,000	1,320,000
Value ($1,000)	5,390,000	5,670,000	5,750,000	5,990,000	6,600,000	7,500,000	8,540,000

Source: U.S. Geological Survey. 2007c. 2006 Minerals Yearbook, Construction Sand and Gravel. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/sand_&_gravel_construction/myb1-2006-sandc.pdf>. As obtained on March 25, 2008.

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Table 2-14. U.S. Construction Sand and Gravel Production by State: 2006

State	Quantity (1,000 Metric Tons)	Value ($1,000)
California	153,000	1,520,000
Texas	99,500	603,000
Arizona	94,000	662,000
Michigan	50,500	215,000
Minnesota	50,300	240,000
Washington	48,400	315,000
Colorado	48,000	327,000
Ohio	46,300	289,000
Nevada	45,500	224,000
Florida	40,000	266,000
Total	1,320,000	8,540,000

Source: U.S. Geological Survey. 2007c. 2006 Minerals Yearbook, Construction Sand and Gravel. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/sand_&_gravel_construction/myb1-2006-sandc.pdf>. As obtained on March 25, 2008.

Table 2-15. U.S. Construction Sand and Gravel by Major Use: 2006

State	Quantity (1,000 Metric Tons)	Value ($1,000)
Concrete aggregates (including concrete sand)	264,000	1,920,000
Road base and coverings	128,000	716,000
Fill	78,800	335,000
Asphaltic concrete aggregates and other bituminous mixtures	66,300	551,000
Plaster and gunite sands	9,700	86,200
Total	1,320,000	8,540,000

Source: U.S. Geological Survey. 2007c. 2006 Minerals Yearbook, Construction Sand and Gravel. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/sand_&_gravel_construction/myb1-2006-sandc.pdf>. As obtained on March 25, 2008.

2.2.3 International Trade

A growing portion of US consumption of construction sand and gravel is supplied by foreign sources. Between 2000 and 2006, exports of sand and gravel remained relatively constant, while imports grew by more than 183% (approximately 37% each year). This trend is illustrated in Table 2-16, which reports the value of sand and gravel imports and exports during this 5 year period.

Table 2-16. Construction Sand and Gravel Import and Export Data: 2000 to 2006

	2000	2001	2002	2003	2004	2005	2006
Exports ($1,000)	24,200	19,100	23,400	24,900	32,100	28,200	24,100
Imports ($1,000)	33,300	40,800	53,900	57,700	56,900	86,800	94,100

Source: U.S. Geological Survey. 2007c. 2006 Minerals Yearbook, Construction Sand and Gravel. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/sand_&_gravel_construction/myb1-2006-sandc.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2005c. 2004 Minerals Yearbook, Construction Sand and Gravel. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/sand_&_gravel_construction/sandgmyb04.pdf>. As obtained on March 25, 2008.

2.2.4 Market Prices

The market price of construction sand and gravel differs by use. According to the USGS, unit prices in 2006 varied from a high of $11.30 per ton for roofing granules to a low of $4.26 per ton for fill. Table 2-17 reports the average unit value of construction sand and gravel sold or used by producers during this 5 year period. As one can see, nominal prices rose an average of approximately 5% each year.

Table 2-17. Unit Value of Construction Sand and Gravel Sold or Used By U.S. Producers: 2000 to 2006

	2000	2001	2002	2003	2004	2005	2006
Unit Value ($ per metric ton)	4.8	5.0	5.1	5.2	5.3	5.9	6.5

Source: U.S. Geological Survey. 2007c. 2006 Minerals Yearbook, Construction Sand and Gravel. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/sand_&_gravel_construction/myb1-2006-sandc.pdf>. As obtained on March 25, 2008.

U.S. Geological Survey. 2005c. 2004 Minerals Yearbook, Construction Sand and Gravel. Washington, DC: U.S. Department of the Interior. Available at <http://minerals.usgs.gov/minerals/pubs/commodity/sand_&_gravel_construction/sandgmyb04.pdf>. As obtained on March 25, 2008.

This trend is also reflected in producer price data collected by the Bureau of Labor Statistics (BLS). According to the BLS, the Producer Price Index (PPI) for the construction sand and gravel industry rose (which measures the nominal prices firms receive for their products) rose an average of 4% each year. This growth rate is relatively slow when compared with prices received by firms in other industries. For example, during the same 6-year time period, prices received by other U.S. mining firms have risen an average of 17% each year during the same period. This data is presented in Table 2-18.

Table 2-18. Producer Price Index Industry Data: 2000 to 2006

	Construction Sand and Gravel (NAICS 212321)		Total mining industries	
Year	PPI	Annual Percentage Change in PPI	PPI	Annual Percentage Change in PPI
2000	175.5	4%	113.5	46%
2001	181.6	3%	114.3	1%
2002	185.8	2%	96.6	–15%
2003	188.9	2%	131.3	36%
2004	195	3%	153.4	17%
2005	209.9	8%	201	31%
2006	229.1	9%	208.7	4%

Source: U.S. Bureau of Labor Statistics (BLS). 2008. "Producer Price Index Industry Data: Customizable Industry Data Tables." Available at <http://www.bls.gov/ppi/>. As obtained on March 25, 2008.

2.2.5 Industry Concentration

Data on the concentration of the construction sand and gravel mining firms was obtained from industry reports prepared by Dun and Bradstreet (D&B). These industry reports are based on data that companies operating within the construction sand and gravel mining industry voluntarily provided D&B. As a result, these reports necessarily exclude information on firms that did not provide financial information to D&B.

D&B received financial information from 1,030 companies operating in the construction sand and gravel mining industry. These companies earned an estimated $1.2 billion in sales in 2007. Approximately 42% of these sales were generated by the 10 largest companies reporting financial information to D&B. Approximately 54% of sales was generated by the 25 largest companies (D&B, 2008c).

This information would suggest that the construction sand and gravel mining industry is potentially highly concentrated. However, since data only a portion of companies in this industry provided financial information, this assessment cannot be conclusive.

2.2.6 Firm Characteristics

To better understand the characteristics of firms operating in the construction sand and gravel industry, this profile relied heavily on data collected by the U.S. Census Bureau. In particular, the 2002 Economic Census and annual Statistics of U.S. Businesses were the primary sources of data presented below.

It is important to note that while the USGS surveys attempts to independently identify all construction sand and gravel mining operations, the U.S. Census Bureau is only interested in collecting economic data for private enterprises (it excludes most government entities). Further, the Census Bureau classifies each establishment it surveys into various NAICS industries based the establishments own self-description. As a result of these and other differences, divergences between USGS and U.S. Census data can be expected.

2.2.6.1 Average Employment and Revenue

In 2002 there were 1,884 firms occupying this industry, owning 2,509 sand and gravel mining establishments. These firms earned a cumulative total of over $4.8 billion in revenue (measured in 2002 dollars) or an average of $2.6 million per firm. A complete summary of 2002 sales and employment data for firms in these industries is reported in Table 2-19 by enterprise size (as measured by the number of employees).

Table 2-19. 2002 Employment and Receipts Data by Enterprise Size (NAICS 212321)

	Employment Size of the Enterprise						
	0–4	**5–9**	**10–19**	**20–99**	**100–499**	**500+**	**Total**
Firms	867	324	283	268	83	59	1,884
Establishments	867	324	287	324	189	518	2,509
Employment	1,471	2,174	3,810	7,952	4,432	6,912	26,751
Receipts ($1,000)	$255,735	$274,124	$533,948	$1,193,402	$856,302	$1,702,068	$4,815,579
Average Receipts per Firm ($1,000)	$295	$846	$1,887	$4,453	$10,317	$28,849	$2,556

Source: U.S. Bureau of the Census. 2002b. Statistics of U.S. Businesses: Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise for the United States, All Industries 2002. Available at <http://www.census.gov/csd/susb/susb02.htm>. As obtained on March 17, 2008.

According to the Small Business Administration (SBA) standards, a small business in the construction sand and gravel mining industry is defined as any firm employing 500 employees or less (SBA, 2008). Under this definition, over 97% of firms in the sand and gravel industry would

be considered "small businesses." In 2002, small businesses earned an average of $1.8 million in revenue and employed 11 workers.

Between 2002 and 2005, total industry employment fell by approximately 2%. However, during this same period, large businesses (firms employing 500 or more workers) increased their share of total employment, from 26% in 2002 to 30% in 2005 (Table 2-20). A summary of 2005 employment data for firms is reported in Table 2-21.

Table 2-20. Distribution of Employment Between Small and Large Firms

	Firms with <500 Employees	Firms with 500+ Employees	TOTAL
2002	19,839	6,912	26,751
2003	17,911	7,145	25,056
2004	18,351	6,954	25,305
2005	18,344	7,994	18,344

Sources: U.S. Bureau of the Census. 2005. Statistics of U.S. Businesses: Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise for the United States, All Industries 2005. Available at <http://www.census.gov/csd/susb/susb05.htm>. As obtained on March 17, 2008.

U.S. Bureau of the Census. 2004a. Statistics of U.S. Businesses: Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise for the United States, All Industries 2004. Available at <http://www.census.gov/csd/susb/susb04.htm>. As obtained on March 17, 2008.

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Table 2-21. 2005 Employment and Receipts Data by Enterprise Size (NAICS 212321)

	Employment Size of the Enterprise						
	0–4	5–9	10–19	20–99	100–499	500+	Total
Firms	835	304	289	246	87	49	1,810
Establishments	835	304	296	297	185	493	2,410
Employment	1,390	2,042	3,836	7,229	3,847	7,994	26,338

Source: U.S. Bureau of the Census. 2005. Statistics of U.S. Businesses: Number of Firms, Number of Establishments, Employment, and Annual Payroll by Employment Size of the Enterprise for the United States, All Industries 2005. Available at <http://www.census.gov/csd/susb/susb05.htm>. As obtained on March 17, 2008.

2.2.6.2 The Cost of Production

Firms mining construction sand and gravel require labor, capital, and supplies such as fuel and intermediate goods. Data was collected from the 2002 Economic Census to determine how much firms spend on each factor of production. In 2002, construction sand and gravel mining firms spent $2.8 billion on these inputs. As Figure 2-2 illustrates, approximately 47% of this spending was used to acquire supplies (U.S. Census Bureau, 2004b).

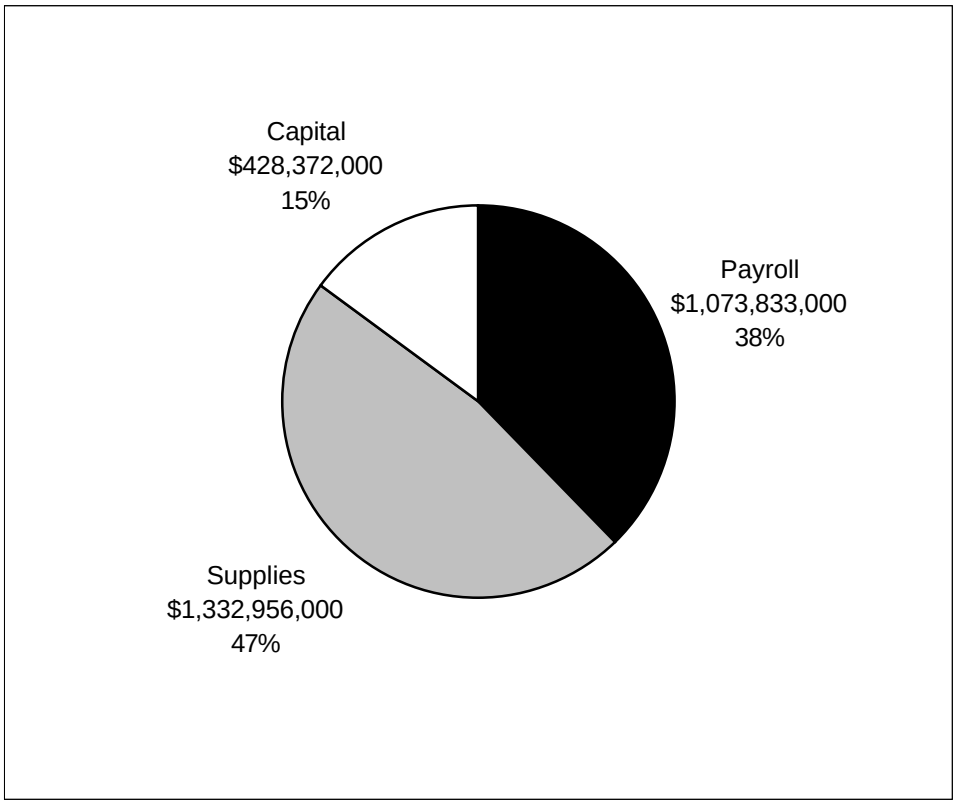

Figure 2-2. Distribution of the Cost of Production Between Capital, Labor, and Supplies

2.2.6.3 Profitability of Construction Sand and Gravel Mining Firms

Table 2-22 provides estimates of the mean profit (before taxes) to net sales ratios for the construction sand and gravel industry (NAICS 212321) for the 2006–2007 fiscal year. These ratios were calculated by Risk Management Associates using income statements for 180 firms in the sand and gravel mining industry and are broken down based on the sales earned by the reporting firms.

As these ratios demonstrate, firms that reported greater sales also tended to be more profitable. For example, firms with sales over $25 million received an 11.9 % average return on

net sales, while firms with assets valued between $0 and $1 million only received a 6.7% average return. The average return on sales for the entire industry was 9.5%.

Table 2-22. Mean Ratios of Profit before Taxes as a Percentage of Net Sales for NAICS 212321, Sorted by Value of Assets

Fiscal Year	Total Number of Statements	0 to $1 Million	$1 Million to $3 Million	$3 Million to $5 Million	$5 Million to $10 Million	$10 Million to $25 Million	$25 Million and Over	All Firms
4/1/2006–3/31/2007	180	6.7	5.4	8.4	12.1	9.9	11.9	9.5

Source: Risk Management Association (RMA). 2007. *Annual Statement Studies 2007.* Pennsylvania: RMA, Inc.

SECTION 3
COSTS, ECONOMIC IMPACTS, AND SMALL BUSINESS RESULTS

Model Plants and Cost Analysis

The number of firms affected by this NSPS is related to the number of facilities expected to be affected by the standard. In turn, the number of facilities likely to be affected is estimated using model plants. Model plants are analytical constructs that are used to simulate actual new plants potentially affected by this standard in a situation where we lack information on emissions and controls for every potentially affected plant in each affected industry. The model plants are used to estimate the baseline emissions for each mineral type and industry, and are then used to estimate the costs of compliance associated with regulatory options under consideration in this NSPS. New source impacts are considered for the 5 years following promulgation of the standards (or 2009 to 2013). The most common control technologies used to comply with subpart OOO include baghouses and wet suppression. The changes to subpart OOO would not change the control technology used since most of the current technologies used to reduce PM at these type of sources achieve the emissions limit to be promulgated as part of this standard.[5] In the case of this analysis, the incremental impacts of compliance involve increased monitoring instead of increased control measures. Both capital and annualized costs of compliance are estimated.

The changes to the NSPS included in the proposal are included in the final NSPS with a few exceptions. The final NSPS will exempt affected facilities with fugitive emissions controlled by water carryover from the proposed requirement for 5-year repeat Method 9 testing provided that the upstream water sprays in the wet suppression system are periodically inspected according to subpart OOO.

Table 1 provides a nationwide summary of the new model plants, baseline emissions, incremental emission reductions and incremental costs of compliance. These impacts are based on the following regulatory options:

[5] Several public commenters on the proposed NSPS suggested that baghouse costs could increase as a result of reducing the stack emission limit from 0.014 gr/dscf. In particular, the commenters stated that baghouse upgrades would be required for new baghouse to ensure compliance with the revised emission limit. These upgrades and costs are presented in detail in "Cost, Environmental and Energy Impacts for the Final Revisions to the NSPS for Non-Metallic Mineral Processing Plants (40 CFR Part 60, subpart OOO)," RTI International, April 2009.

- Stack PM concentration limit of 0.014 gr/dscf
- Omission of the 7% stack opacity limit
- Revised fugitive emission limits of 12% for crushers and 7% for other affected facilities
- Reduced Method 9 test duration for fugitive affected facilities (reduced to 30 minutes)
- Added monthly inspection that water is flowing for affected facilities controlled by direct or upstream water sprays
- Added repeat Method 9 testing every 5 years for affected facilities with fugitive emissions that are not controlled by direct or upstream wet suppression water sprays.
- Added quarterly 30-minute Method 22 VE observations for baghouses
- Omission of §60.7(a)(1) notification of commencement of construction/reconstruction

More information on these options can be found in the cost and other impacts memo prepared by RTI mentioned above and the preamble to this NSPS. The average cost per ton of PM reduction (or average cost-effectiveness) across all model plants and sources is $1,860 (2007 dollars).

Table 1. Summary of Nationwide Cost and Air Impacts for the Subpart OOO NSPS Revisions

Mineral type[a]	NAICS for Each Mineral Type	No. new model plants	Total *potential* PM emission reduction[b], tpy	Percent $PM_{2.5}$[c]	*Potential* $PM_{2.5}$ emission reduction, tpy	Incremental capital cost[d], $	Incremental annualized cost, $/yr (2007$)	Incremental annualized cost per plant, $/yr (2007$)
Crushed & Broken stone	21231	96	111	5	6	(457,600)	187,860	1,957
Sand & Gravel:								
Construction	212321	208	241	5	12	(991,467)	407,029	1,957
Industrial	212322	1	1	5	0.03	(4,767)	1,957	1,957
Clays:								
Bentonite	212325	1	5	20	1	36,316	11,887	11,887
Fuller's earth	212325	4	21	20	4	145,265	47,547	11,887
Ball Clay	212324	1	5	20	1	36,316	11,887	11,887
Rock Salt/Sodium Chloride	212393	1	5	5	0.3	36.316	11,887	11,887
Gypsum	212399	7	37	-	-	254,213	83,207	11,887
Sodium Carbonate	212391	1	23	5	1	71,934	24,864	24,864
Pumice	212399	2	10	5	1	72,632	23,773	11,887
Barite	212393	8	37	5	2	323,909	98,926	12,366
Fluorspar	212393	1	3	5	0.2	40,489	12,366	12,366
Mica	212399	1	5	5	0.2	40,489	12,366	12,366
Total		**332**	**503 tpy 456 Mg/yr**		**28 tpy 25 Mg/yr (6% of total PM)**	**(395,955)**	**935,554**	**2,818**

[a]No new model plants are projected in the 5 years following promulgation of the NSPS review for the following mineral types: kaolin, fire clay, common clay, sodium sulfate, gilsonite, talc/pyrophyllite, boron (including borax, kernite, and colemanite), feldspar, diatomite, perlite, vermiculite, or kyanite (including andalusite, sillimanite, topaz, and dumortierite).

[b]Includes *potential* emission reduction associated with lowering the stack emission limit from 0.022 gr/dscf to 0.014 gr/dscf and the *potential* emission reduction associated with increased testing and monitoring (based on potential emissions from malfunctioning controls). *Potential* reductions may be overstated because most baseline control devices already perform at 0.014 gr/dscf (such that no additional emission reduction would be gained from lowering the limits to 0.014 gr/dscf).

[c]The split between PM and $PM_{2.5}$ varies depending on mineral, process, and control system used. The percent $PM_{2.5}$ is a ballpark figure based on the limited available information in AP-42 and the 1982 BID.

[d]No additional cost is required for control equipment. The incremental cost differences are associated with changes in the MRR requirements. There is a negative capital cost because the revised NSPS would reduce costs of initial testing requirements by (a) allowing a 30-minute Method 9 test instead of a 1-hour test for fugitive affected facilities; and (b) by omitting the 7% stack opacity limit and associated initial testing from subpart OOO.

Tpy = tons per year; Mg/yr = megagrams per year (1 Mg = 1.1 tons).

Affected Industries

This NSPS will affect new and modified/reconstructed sources in the industries listed in Table 1 above. These industries are:

NAICS 21231 – Stone Mining and Quarrying
NAICS 212321 – Construction Sand and Gravel Mining
NAICS 212322 – Industrial Sand Mining
NAICS 212324 – Kaolin and Ball Clay Mining
NAICS 212325 – Clay and Ceramic and Refractory Minerals Mining
NAICS 212391 – Potash, Soda, and Borate Mineral Mining
NAICS 212393 – Other Chemical and Fertilizer Mineral Mining
NAICS 212399 – All Other Nonmetallic Mineral Mining

The Small Business Administration (SBA) small business size standards for these industries is 500 employees per ultimate parent entity. These small business size standards can be found at http://www.sba.gov/idc/groups/public/documents/sba_homepage/serv_sstd_tablepdf.pdf. Thus, any business is classified as "small" by the SBA in these industries if the ultimate parent entity has 500 employees or less. This is the definition of small business that will be used for this rule and this analysis. The distribution of small businesses as we have estimated by affected NAICS can be found in Table 2.

Table 2. Projected Number of New Model Plants that Could be Owned by Small Businesses.

Mineral type	No. new model plants[a]	Estimated number of small businesses	Percent of firms with less than SBA 500 employees	NAICS
Crushed & Broken stone	96	92	95.7%	21231
Sand & Gravel:	0			
Construction	208	202	97.3%	212321
Industrial	1	1	87.5%	212322
Clays:	0			
Bentonite	1	1	82.9%	212325
Fuller's earth	4	3	82.9%	212325
Ball Clay	1	1	73.9%	212324
Rock Salt/Sodium Chloride	1	1	78.4%	212393
Gypsum	7	6	92.3%	212399
Sodium Carbonate	1	1	50.0%	212391
Pumice	2	2	92.3%	212399
Barite	8	6	78.4%	212393
Fluorspar	1	1	78.4%	212393
Mica	1	1	92.3%	212399
Total	**332**	**318 (96% of model plants)**		

[a]No new model plants are projected in the 5 years following promulgation of the NSPS review for the following mineral types: kaolin, fire clay, common clay, sodium sulfate, gilsonite, talc/pyrophyllite, boron (including borax, kernite, and colemanite), feldspar, diatomite, perlite, vermiculite, or kyanite (including andalusite, sillimanite, topaz, and dumortierite).

For this analysis, since over 90 percent of the model plants that could be owned by small businesses are found in two industries, NAICS 21231 and 212321, we focus our economic and small business analysis on impacts to these industries. The industry profile, which contains essential background information to this analysis and is found earlier in this report, has revenue, profit margin, and other data for each of these industries. More details on the number of firms in these industries, the organization of these industries, and their profit margins can be found in the industry profile earlier in this report.

Economic Impacts

As shown in this report, small businesses are quite common in the industries that are the focus of this analysis. In each industry, more than 95 percent of the businesses are classified as small by the Small Business Administration (SBA) according to their size standards. For this analysis, we use average annualized compliance costs as a percentage of firm-level sales or revenues, otherwise called the "sales test," to estimate impacts to affected small businesses. Use of this metric to estimate impacts to small businesses is consistent with Table 1 on pp. 24-25 of the

latest EPA guidance for complying with the Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) found at http://www.epa.gov/sbrefa/documents/rfafinalguidance06.pdf. Using average annual revenue for the small firms for each industry available in our industry profile, and applying the average annualized compliance cost incurred by each firm (using model plant costs), we arrive at the following impacts:

NAICS 21231 – Average Annual Revenue Per Small Firm = $3.7 million
Average Annualized Compliance Cost Per Small Firm = $1,957 (2007$)
Average Annualized Cost Per Annual Revenue for Small Firms = 1957/3700000 = 0.05 percent

NAICS 212321 – Average Annual Revenue Per Small Firm = $1.7 million
Average Annualized Compliance Cost Per Small Firm = $1,957 (2007$)
Average Annualized Cost Per Revenue for Small Firms = 1957/2000000 = 0.10 percent

We find that the average annualized compliance cost is no more than 0.10 percent of the sales or revenues for an affected small firm in our analysis. Thus, we conclude there is no significant impact on a substantial number of small businesses (or no SISNOSE) as a result of complying with this NSPS. We find that more than 90 percent of the small businesses affected by this NSPS are found in these two industries, but we find no significant impact for any of these small businesses.

It should be noted that the metric of cost to sales per firm is an estimate of the maximum price increase that must take place to a firm's output in order to have no net change in its revenue assuming none of the costs can be passed along to its customers. Given that these firms can pass along some share of the costs of production to their customers, the output price increase can be no more than the cost to sales estimate. Hence, the maximum price increase for output from these industries can be no greater than 0.10 percent (the cost to sales estimate for the industry most impacted, NAICS 212321).

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