FINAL REGULATORY ECONOMIC ANALYSIS

AND

FINAL REGULATORY FLEXIBILITY ANALYSIS

FINAL RULE ON 30 CFR PART 46

FINAL STANDARDS AND REGULATIONS

TRAINING AND RETRAINING OF MINERS ENGAGED IN SHELL DREDGING OR EMPLOYED AT SAND, GRAVEL, SURFACE STONE, SURFACE CLAY, COLLOIDAL PHOSPHATE, OR SURFACE LIMESTONE MINES

RIN: 1219-AB17

Office of Standards, Regulations, and Variances

Mine Safety and Health Administration

United States (U.S.) Department of Labor

September 1999

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I. EXECUTIVE SUMMARY

INTRODUCTION

The Mine Safety and Health Administration (MSHA) is issuing regulations that supersede existing MSHA health and safety training regulations in 30 CFR Part 48 for shell dredging, sand and gravel, surface stone, surface clay, colloidal phosphate, and surface limestone mines. MSHA has been prohibited by Congress from expending funds to enforce training requirements at these mines ("exempt mines") since FY 1980. This final rule will implement the training requirements of § 115 of the Federal Mine Safety and Health Act of 1977 and provide for effective miner training at the exempt mines, while at the same time allowing operators at these mines to tailor their training programs to the specific needs of their miners and their operations.

The Agency considers this rulemaking not to be economically significant under Executive Order 12866. Based upon its Regulatory Economic Analysis (REA), MSHA has determined that this final rule will not have an annual effect of $100 million or more on the economy.

AFFECTED MINES AND MINERS

The final rule will apply to approximately 120,000 miners in 10,150 nonmetal mines. This covers approximately 92 percent of

all metal and nonmetal (M/NM) mines, and about 61 percent of all miners employed in such mines. As mentioned above, the final rule applies only to certain commodities in the nonmetal mining industry. In addition, the final rule applies only to surface mines.

FINAL RULE SUMMARY

For the nonmetal mines affected by the final rule, various aspects of miner training are covered. The final rule provides for: definitions related to training; the development and implementation of training plans; 24 hour of training for newly-hired miners who have no experience; training for newly-hired experienced miners; training before a miner begins a new task; annual refresher training for all miners; the development of miner training records; compensation for miners who receive training; and hazard awareness training for non-miners who are at mine sites.

BENEFITS SUMMARY

Safety and health professionals from all sectors of industry recognize that training is a critical element of an effective safety and health program. Training informs miners of safety and health hazards inherent in the workplace and enables them to identify and avoid such hazards. Training becomes even more

important in light of certain conditions that can exist when production demands increase, such as: an influx of new and less experienced miners and mine operators; longer work hours to meet production demands; and increased demand for contractors who may be less familiar with the dangers on mine property.

Although there may be some differences in production technology and the production environment between the exempt mining industry and other surface nonexempt mining industries, the data presented in Chapter III of this document indicate that the lack of training in exempt mines contributes significantly to the disproportionate number of fatalities that occur at such mines. Chapter III points out that in the period from 1993 to 1997, there were 200 fatalities at surface mines. Of these, 163 occurred at exempt mines. Thus, exempt mines accounted for 82 percent of all fatalities at surface mines during this period. During the same period, however, employees at exempt mines accounted for only 64 percent of the total number of hours worked at surface mines.

One of the major reasons that exempt mines have experienced a higher fatality rate than the surface mining industry as a whole is that smaller operations, those which employ fewer than 20 workers, make up the vast majority of exempt mines. These small operations, as a group, have the highest rates of

noncompliance with part 48 training requirements and also the highest fatality rates.

It is plausible to assert that at least some of these fatalities might have been prevented if victims had received appropriate miner safety training. Similarly, MSHA believes that compliance with the requirements of this final training rule will, in turn, reduce the number of fatalities at formerly exempt mines. As discussed in greater detail in Chapter III of this document, MSHA estimates that compliance with the final rule will prevent about 10 fatalities and 557 injuries per year. MSHA believes that this final rule will make training more responsive to the needs of the industry and more effective for individual miners, thereby raising the compliance rate and reducing mine injuries and fatalities.

COMPLIANCE COST SUMMARY

MSHA estimates that the yearly compliance costs (annualized costs plus annual costs) resulting from the final rule will be approximately $17.94 million, of which about $16.55 million will be borne by the affected nonmetal mine operators. (The remaining $1.39 million in costs associated with the final rule will be borne primarily by non-miners who receive hazard awareness training, or by their employers.) Compliance costs will total about $6.2 million for mines with 5 or fewer employees, about

$6.4 million for mines with between 6 and 19 employees, and about $4.0 million for mines with 20 or more employees.

REGULATORY FLEXIBILITY CERTIFICATION AND ANALYSIS

In accordance with section 605 of the Regulatory Flexibility Act, the Mine Safety and Health Administration certifies that the final rule does not have a significant economic impact on a substantial number of small entities. Under the Small Business Regulatory Enforcement Fairness Act (SBREFA) amendments to the Regulatory Flexibility Act, MSHA must include in the final rule a factual basis for this certification. The Agency must also publish the regulatory flexibility certification statement in the Federal Register, along with the factual basis, followed by an opportunity for the public to comment. The analysis that provides the factual basis for this certification is discussed in Chapter V of this document and will be included in the preamble to the final rule for publication in the Federal Register. The Agency has consulted with the Small Business Administration's (SBA's) Office of Advocacy and believes that this analysis provides a reasonable basis for the certification in this case.

In the proposal, MSHA specifically solicited comments on the Agency's regulatory flexibility certification statement, including cost estimates and data sources. To facilitate public participation in the rulemaking process, MSHA mailed a copy of

the proposal and will mail a copy of the final rule, including the preamble and regulatory flexibility certification statement, to every mine operator and miners' representative.

II. INDUSTRY PROFILE

INTRODUCTION

This industry profile provides background information describing the structure and economic characteristics of the surface metal/nonmetal (M/NM) mining industry. It also provides more detailed information about the following types of surface mines which are affected by this final rule: sand and gravel, stone, clay, limestone, shell dredging, and colloidal phosphate. This profile provides data on the number of mines, their size, and the number of employees in each segment, as well as information about selected market characteristics.

Although this particular rulemaking does not apply to the underground M/NM sector, information about underground M/NM mines is provided here in order to give context for the discussions on surface mining. In that regard, some subsectors of the M/NM mining industry——in particular, metal mining——are not affected by this final rule.

OVERALL STRUCTURE OF THE MINING INDUSTRY

MSHA divides the mining industry into two major segments based on commodity: the coal industry and the M/NM mining industry. These major industry segments are further divided based on type of operations (i.e., underground mines or surface

mines). MSHA maintains its own data on mine type, size, and employment. MSHA also collects data on the number of contractors and contractor employees. Although there are 2,578 coal mines (968 underground mines and 1,610 surface mines),[1] this industry profile will not further discuss such mines. Instead the discussion in this chapter will focus on the M/NM industry, which contains within it the surface mines that are affected by this final rule.

MSHA has categorized mines as to size on the basis of the number of employees. Over the past 20 years, for rulemaking purposes, MSHA has consistently defined small mines to be those having fewer than 20 employees and large mines to be those having at least 20 employees. However, for purposes of the Small Business Regulatory Enforcement Fairness Act (SBREFA) amendments to the Regulatory Flexibility Act (RFA), MSHA must evaluate the impact on small mines, as defined by SBA, which, for the mining industry, are mines with 500 or fewer employees.

Table II-1 presents the total number of small and large surface and underground M/NM mines and the corresponding number of miners, excluding contractors, by three employment categories: (1) fewer than 20 employees (MSHA's definition of a small mine); (2) between 20 and 500 employees; and (3) over 500 employees.

[1]U.S. Department of Labor, Mine Safety and Health Administration, Office of Standards, Regulations, and Variances, based on 1997 Final MIS data (quarter 1 - quarter 4), CM441 cycle 1997/184.

The M/NM mines consist of metal mines (such as gold, copper, and silver); nonmetal mines (such as clay, salt, and trona); stone mines (such as limestone, marble, and granite); and sand and gravel mines. Table II-1 shows that most M/NM mines are surface mines (approximately 98 percent) and employ most of the M/NM miners (about 90 percent of all M/NM miners, exclusive of office workers). Sand and gravel mines are all surface mines and account for about 56 percent of all nonmetal mines.

Table II-2 provides data on the number of independent contractors and contractor workers by mine type and size of mine.

Table II-1: Distribution of Operations and Employment (excluding contractors) by Mine Type and Size

Mine Type	Size of M/NM Mine						All M/NM Mines	
	Fewer than 20 Employees		20 to 500* Employees		Over 500* Employees			
	Mines	Empl.	Mines	Empl.	Mines	Empl.	Mines	Empl.
Under-ground	132	1,127	123	11,106	7	5,399	262	17,632
Surface	9,316	52,497	1,409	79,316	23	19,085	10,748	150,898
Office Workers	-	9,158	-	15,441	-	2,902	-	27,501
Total M/NM	9,448	62,782	1,532	105,863	30	27,386	11,010	196,031

* Based on MSHA's traditional definition, large mines include all mines with employees of 20 or greater.

Source: U.S. Department of Labor, Mine Safety and Health Administration, Office of Standards, Regulations, and Variances, based on 1997 Final MIS data (quarter 1 - quarter 4), CM441 cycle 1997/184. Data for total office workers from Mine Injury and Worktime Quarterly (1997 Closeout Edition) Table 2, p. 6.

Table II-2: Distribution of Contractors and Contractor Employment by Size of Operation

Contractors	Size of Contractor						All Contractors	
	Fewer than 20 Employees		20 to 500* Employees		Over 500* Employees			
	Firms	Empl.	Firms	Empl.	Firms	Empl.	Firms	Empl.
Firms	2,933	14,740	393	19,885	5	3,338	3,331	37,963
Office Workers	-	660	-	891	-	370	-	1,921
Total Contractors	2,933	15,400	393	20,776	5	3,708	3,331	39,884

* Based on MSHA's traditional definition, large contractors include contractors with employees of 20 or greater.

Source: U.S. Department of Labor, Mine Safety and Health Administration, Office of Standards, Regulations, and Variances, based on 1997 Final MIS data (quarter 1 - quarter 4), CT441 cycle 1997/184. Data for total office workers from Mine Injury and Worktime Quarterly (1997 Closeout Edition) Table 6, p. 21.

METAL/NONMETAL MINES IMPACTED BY THE FINAL RULE

This rule affects no surface metal mines and only certain surface nonmetal mines. These include several types of surface stone mines (both crushed/broken and dimension): stone; granite; marble; sandstone; slate; and traprock. Also included in this category are surface feldspar mines and surface common shale mines. The rule also affects all surface sand and gravel mines (which encompasses the entire sand and gravel mining sector, because it contains no underground mines). In addition, surface limestone mines (both crushed/broken and dimension) are affected by the rule. Included in this category are surface hydraulic cement, surface lime, and shell dredging mines. With respect to the rest of surface nonmetal mines, only colloidal phosphate and clay mines are affected by this rule. The types of clay mines affected are ceramic and refractory mineral clays, common clays, and fire clay.

The impact of this rule on mines with fewer than 20 employees is not uniform. Therefore, MSHA has chosen to develop costs for the following three employment size categories: (1) mines with 5 or fewer employees; (2) mines with between 6 and 19 employees; and (3) mines with more than 20 employees.[2]

Table II-3 presents the number of surface M/NM mines affected by the final rule for these three size categories.

[2]Since none of the mines affected by this rule employs more than 500 employees, all affected mines are considered small mines based on SBA's definition.

Table II-4 presents similar information for independent contractors and contractor workers.

Some of the exempt mines counted in Table II-3 and Table II-4 are in compliance with existing part 48 training requirements and will also be, for the most part (but not completely, as discussed in Chapter IV), in compliance with the final rule.

Table II-3: Number of Mines and Miners Covered by the Final Rule[a]

Commodity	1-5 Employees		6-19 Employees		20 Plus Employees[b]		Totals	
	Mines	Empl.	Mines	Empl.	Mines	Empl.	Mines	Empl.
Sand & Gravel	4,092	11,231	1,848	17,891	278	8,911	6,218	38,033
Limestone[c]	504	1,626	955	11,097	659	37,872	2,118	50,595
Stone[d]	548	1,659	630	6,770	314	12,513	1,492	20,942
Clays[e]	151	463	64	640	106	8,175	321	9,278
Colloidal Phosphate	2	8	1	6	0	0	3	14
Total	5,297	14,987	3,498	36,404	1,357	67,471	10,152	118,862

[a] All mines affected by the rule are surface nonmetal mines. Source: U.S. Department of Labor, Mine Safety and Health Administration, Office of Standards, Regulations, and Variances, based on 1997 MIS data (quarter 1 - quarter 4, 1997). Independent contractors are not included in these estimates. Office workers and contractor workers are not included in these employment figures.

[b] No mine affected by the rule has over 500 employees.

[c] The limestone category includes the following: crushed/broken and dimension limestone, hydraulic cement, and lime mines.

[d] The stone category includes the following: crushed/broken and dimension stone mines(stone, granite, marble, sandstone, slate, and traprock), as well as feldspar and shale mines.

[e] The clay category includes the following: ceramic and refractory mineral clays, common clays, and fire clay mines.

Table II-4: Number of Independent Contractors (ICs)and Independent Contractor Workers (CWs) Covered by the Final Rule[a]

Size By Number of Empl.	Those Designated as Mine Operators & Miners[b]		Those Not Designated as Mine Operators & Miners[c]		Totals	
	IC	CW	IC	CW	IC	CW
1-5	305	863	1,221	3,453	1,526	4,316
6-19	169	1,657	675	6,626	844	8,283
20 or More	69	2,922	275	11,688	344	14,610
Total	543	5,442	2,171	21,767	2,714	27,209

[a] Number of independent contractors and contractor workers covered by final rule not directly available from MSHA data. Estimate taken as a percentage of surface independent contractors and contractor workers based on ratio of surface M/NM mine operators and miners covered by rule compared to total number of surface M/NM mine operators and miners.

[b] Estimate based on the assumption that 20 percent of the independent contractors and contractor workers covered by rule are designated as mines and miners.

[c] Estimate based on the assumption that 80 percent of the independent contractors and contractor workers covered by rule are not designated as mines and miners.

METAL/NONMETAL MINE CLASSIFICATION AND REVIEW

The M/NM mining industry consists of about 70 different commodities that can be divided into four categories. These are: metals, nonmetals, stone, and sand and gravel. Typical metal commodities are gold, silver and copper, while potash, salt, and trona are examples of nonmetal commodities.

The estimated value of U.S. raw nonfuel minerals production in 1997 was $39.5 billion,[3] an increase of 2% above the 1996 value. Some $12.4 billion (31.4%) were contributed by the metals mining subsector while the remaining $27.1 billion (68.6%) were provided by industrial minerals. The total contribution of M/NM production in the U.S. economy was about 0.5% of the Gross Domestic Product.

The commodities which would be directly affected by this rule are listed under five surface nonmetal mine categories. These are stone, limestone, colloidal phosphate, clays, and sand and gravel. Table II-5 summarizes production volume and revenues for these categories. No information was found for colloidal phosphate. However, since there are only 3 colloidal phosphate mines operating in the United States, each employing fewer than 10 miners, their revenues should be minuscule compared to the other affected industries. In Table II-5, revenues for colloidal

[3] Mineral Commodity Summaries, U.S. Dept. of the Interior, U.S. Geological Survey, 1998

phosphate mines are estimated by using the average revenues of the other exempt mines in the same size categories covered by the final rule.

Table II-5 1997 Production and Value of Affected Sectors

Affected Commodities	Production (in tons)	Price (per ton)	Total Value
Stone[a]			
Crushed/broken	**1,420,000,000**	**$5.66**	**$8,037,200,000**
Dimension	**1,660,000**	**$190.53**	**$316,279,800**
Colloidal Phophate[b]			**$2,039,000**
Clays	**76,200,000**	**$40.58**	**$3,092,196,000**
Sand & Gravel			
Construction	**952,000,000**	**$4.47**	**$4,255,440,000**
Industrial	**28,500,000**	**$18.17**	**$517,845,000**
Feldspar	**900,000**	**$46.70**	**$42,030,000**
Total Value			**$16,263,029,800**

Source: Data for stone and clay from Mineral Industry Surveys, Mining & Quarrying Trends, USGS 1997 Annual Review. Tables 2 and 3. Data for all other commodities from USGS Minerals Information - 1997.

[a]Includes all stones and limestone

[b]Revenues from the three U.S. colloidal phosphate mines, two with 5 or fewer employees and one with 6-19 employees, estimated using average revenues of the other exempt mines in the same size categories covered by the final rule.

COMMODITY SYNOPSIS

Crushed Stone

Crushed stone is one of the most common available natural resources and the major basic material used in construction, agriculture, and other industries using chemical and metallurgical processes. Being a major contributor to the nation's infrastructural development, the crushed stone industry is a barometer of how the economy is performing.

Some 1.42 billion metric tons of crushed stone were produced in the United States in 1997 in surface operations.[4] This is a 7.1% increase compared with total production for 1996. This tonnage represents the highest production level ever recorded in the U.S. and is an indication of increased demand for construction aggregates. Crushed limestone output in 1997, an integral part of crushed stone, increased by 5.5% to 916 million tons, valued at $4.8 billion.

The average unit price (f.o.b. plant) of crushed stone was $5.66 per ton, a 4.8% increase relative to 1996. Average unit prices, by kind of stone, showed only modest increases in 1997, ranging from between 2% for slate to 7.5% for miscellaneous stone. However, the unit value of crushed marble showed a dramatic increase of 74%.

[4]USGS, Minerals Information (Crushed Stone), 1997.

Dimension Stone

Dimension stone consists of rough stone and quarried blocks of igneous, sedimentary, and metamorphic rocks such as granite, marble, and slate. Because of their toughness and resistance to environmental damage, these stones are commonly used as panels, slabs, and other shapes in building and construction, as well as in monuments.

Unlike crushed stone, production data for dimension stone were derived from Mining and Quarrying Trends for producers of rough and finished dimension stone. The 1997 production was estimated at 1.66 million tons with a unit price of $190.53.[5]

Clays

Total clay production for 1997 was estimated at 76.2 million tons with an average unit value of $40.58, giving a total value of some $3 billion.[6] During 1997, production of ball clay, bentonite, fire clay, and kaolin increased while production of common clay and fuller's earth decreased. Common clays accounted for 58% of the tonnage, and kaolin accounted for 62% of the value of clays produced in 1997. Most clay mining in the U.S. uses open pit methods; less than 1% of U.S. clay output is from underground mines.

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[5]USGS, Mining Quarrying Trends, 1997 Annual Review (Dimension Stone).

[6]USGS, Mining Quarrying Trends, 1997 Annual Review (Clay).

Sand and Gravel - Construction

Construction sand and gravel are also among the commonly accessible natural resources. They are major basic raw materials used mostly by the construction industry. Despite the low value of its basic products, the construction sand and gravel industry is also a major contributor to and indicator of the performance of the national economy.

A total of 952 million metric tons of construction sand and gravel was produced in the U.S. in 1997.[7] This represented a 4.2% increase compared with production levels in 1996. After a decrease in production in 1991, sand and gravel production increased for the following six years, an indication of a continuous strong demand for construction aggregates in the U.S.

The construction industry is the largest consumer of sand and gravel. Sand and gravel production increased during 1997 due to continued growth in construction activity. Total construction activity advanced by 5% to $346 billion. This followed a 6% increase in 1996 and represented the sixth straight year of moderate increases for the construction industry.[8]

Compared with the previous year, the 1997 average unit price of construction sand and gravel increased about 2% to $4.47 per ton. By use, the unit prices varied from a high of $8.97 for

[7]USGS, Minerals Information, (Construction Sand and Gravel), 1997.

[8]USGS, Minerals Information,(Construction Sand and Gravel) 1997.

roofing granules to a low of $2.74 for fill. The largest price increases were recorded for roofing granules, 55%; and filtration, 11.7%. The largest average unit price declines were for railroad ballast, 23%; and road stabilization, 22%.

Sand and Gravel - Industrial

Industrial sand and gravel, often termed “silica,” “silica sand,” or “quartz sand,” includes sands and gravels with high silicon dioxide (SiO_2) content. These sands are used in glassmaking, in foundry production, as abrasives, and for many other uses.

Industrial sand and gravel production was 28.5 million metric tons in 1997, a 2.5% increase compared with 1996. This level of production was only exceeded in 1979, when 30.4 million tons were sold or used.[9] The increase in production was a result of higher demand for sand in blasting, containers, speciality glass, and other uses.

There was also a significant demand for silica gravel, which is used for the production of silicon and ferrosilicon. Compared to 1996, the average value (f.o.b. plant) for silicon gravel increased slightly to $18.17 per metric ton. Silica prices commonly range from several dollars to hundreds of dollars, and occasionally prices exceed the $1,000 level. Nationally, ground

[9]USGS, Minerals Information (Silica), 1997.

sand used as fillers for rubber, paint, and putty had the highest value of $127.88 per ton.

Feldspar

Feldspars are alumino-silicates, having varying amounts of sodium, potassium, or calcium. In glassmaking, the largest end use, feldspar provides alumina for improving hardness, durability, and resistance to chemical corrosion. In ceramics, feldspar is used as a flux, lowering the vitrifying temperature of a ceramic body during firing and forming a glassy phase.

The U.S. production of feldspar (including aplite) in 1997 was about 900,000 metric tons, with an estimated value of $42,000,000.[10]

[10]USGS, Minerals Information, (Feldspar and Nepheline Syenite), 1997.

III. BENEFITS

INTRODUCTION

In the period from 1993 to 1997, there were 200 fatalities at surface mines. Of these, 163 occurred at exempt mines. Thus, exempt mines accounted for 82% of all fatalities at surface mines during this period, but only accounted for 64% of the total number of hours worked at surface mines. Similarly, the non-fatal injury rate at exempt mines for the period 1983 - 1997 was 22% higher than at non-exempt metal and nonmetal mines. Although there may be some differences in production technologies and the mining environment between the exempt mining industry and other surface mining industries, it is likely that the lack of training in exempt mines contributes significantly to the disproportionate number of fatalities and injuries that occur at such mines. MSHA believes that this final training rule will make training more responsive to the needs of the industry and more effective for individual miners, thereby raising the compliance rate and consequently reducing the number of injuries and fatalities at exempt mines. This chapter of the REA presents MSHA's estimate of the number of injuries and fatalities that would be prevented by the final rule.[11]

[11]This chapter contains an analysis of MSHA data on both mine injuries and mine fatalities. Both types of data suggest that the final rule will yield significant safety benefits to exempt mines and the miners they employ. However, we believe that much greater emphasis should be placed on the fatality data because they are much more

METHODOLOGY

MSHA reviewed its own accident and injury data for the five-year period between 1993 to 1997 (data were not yet available for 1998) as the basis for determining the numbers of fatalities and injuries befalling miners employed at exempt mines. These data contain the number of exempt miners by company employment size, employee hours, lost time injuries, fatalities, and fatal injury incidence rate. MSHA believes these data are the most comprehensive set of mining injury and fatality data currently available. MSHA also used data developed by MSHA's Office of Program Evaluation and Information Resources to determine the current number of exempt mines and miners by commodity, employee hours reported, and mine size.

MSHA assumes that the past history of mining fatalities and injuries can be used as a basis to forecast the number of mining fatalities and injuries in future years. Furthermore, MSHA believes that lack of training is a major factor in the disproportionate number of miners killed or injured at exempt mines. Conversely, MSHA expects that training can contribute significantly to a reduction in accidents, injuries, illnesses,

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reliable than the injury data. MSHA thoroughly investigates fatal mining accidents, whereas we do not investigate many mining accidents involving only injuries. Numerous studies (e.g., NIOSH, Identifying High-Risk Small Business Industries, May 1999, p. 92) have shown that underreporting of occupational injuries and illnesses is a substantial possibility among small establishments with fewer than 50 employees, which make up most of the mines in the exempt mining sectors. Reasons for underreporting include economic incentives and lack of familiarity. Although the extent and effect of underreporting of mining injuries are difficult to quantify, we believe that the detail and accuracy of our mining fatality data greatly exceed those of our mining injury data.

and fatalities by fostering safe work practices, increasing job skills, and enhancing hazard awareness and prevention. The decrease in the number of fatalities and injuries which MSHA has estimated is based on these assumptions.

POPULATION AT RISK

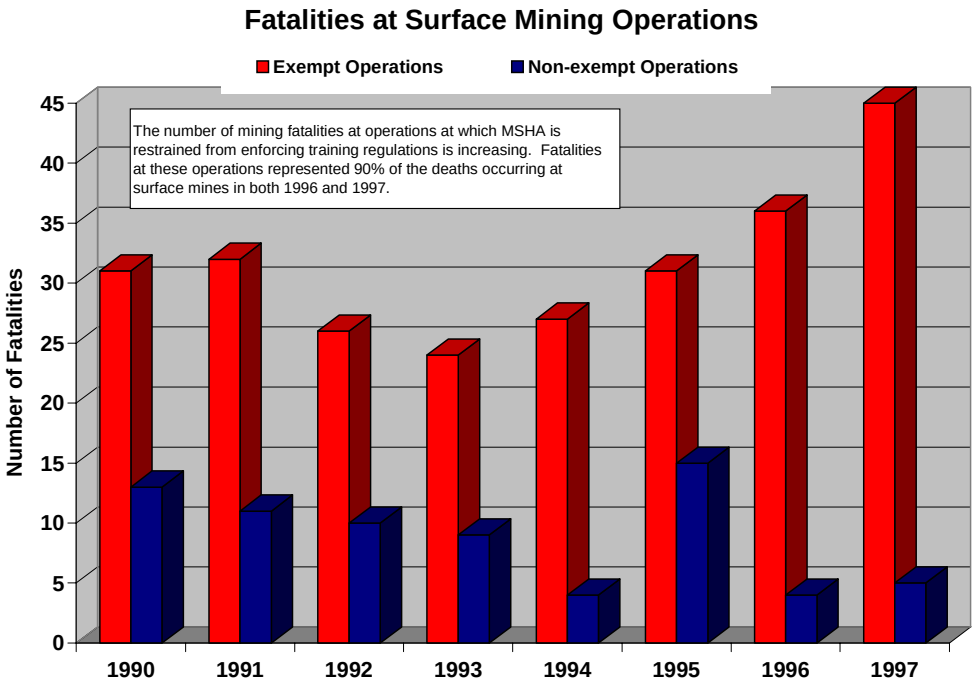
The population at risk is miners employed by exempt mines. MSHA estimates that there are approximately 10,150 exempt mines and approximately 120,000 miners that will be affected by the final training rule.

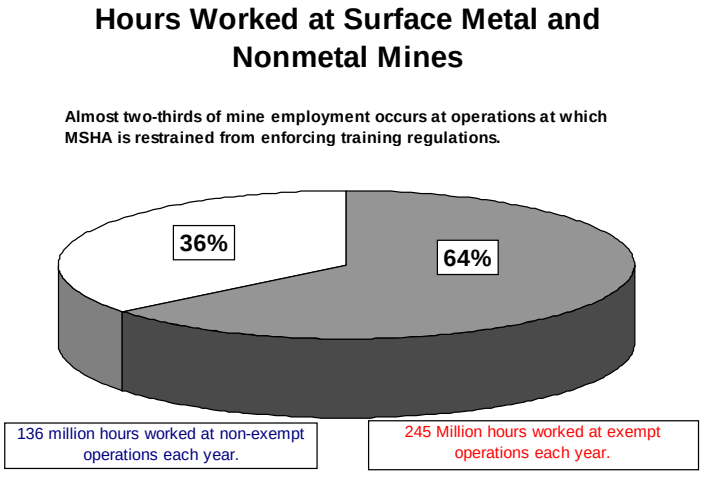
ANALYSIS OF DATA

Since fiscal year 1980, the year in which the congressional appropriations rider took effect, more than 600 miners have been killed in occupationally-related incidents at mines where Congress has prohibited MSHA from enforcing miner training requirements ("exempt mines"). The rider affects approximately 10,150 surface nonmetal mines and 120,000 miners. Approximately 9,200 of these sites are surface aggregate operations; the remainder are surface operations mining other commodities such as clay and colloidal phosphate.

MSHA data indicate that, of the 200 miners involved in fatal accidents at surface metal and nonmetal mines from 1993 to 1997, 163 miners (81.5%) worked at exempt mines. Employees at exempt

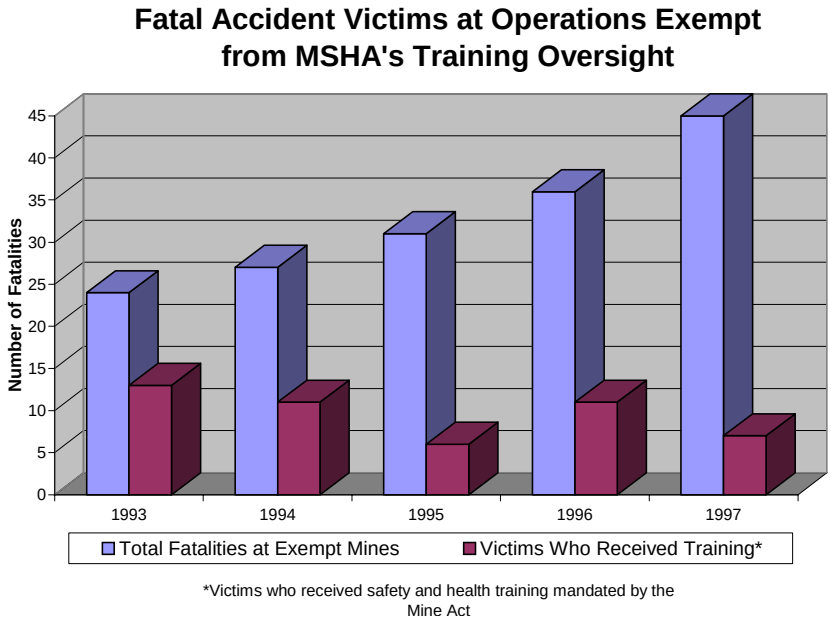
mines, however, accounted for only 64.3% of the total number of hours worked at surface metal and nonmetal mines.





MSHA data also suggest a higher risk of injury at exempt mines. For the period 1983 - 1997, the rate of non-fatal injuries involving at least one lost workday was 22% higher at exempt mines than at non-exempt metal and nonmetal mines (3.56 injuries versus 2.91 injuries per 200,000 employee hours). Furthermore, the rate disparity was increasing during the period: the rate of NFDL (non-fatal, day-lost) injuries was 10% higher for exempt mines for the 1983 - 1989 period, and 34% higher for the 1990 - 1997 period.

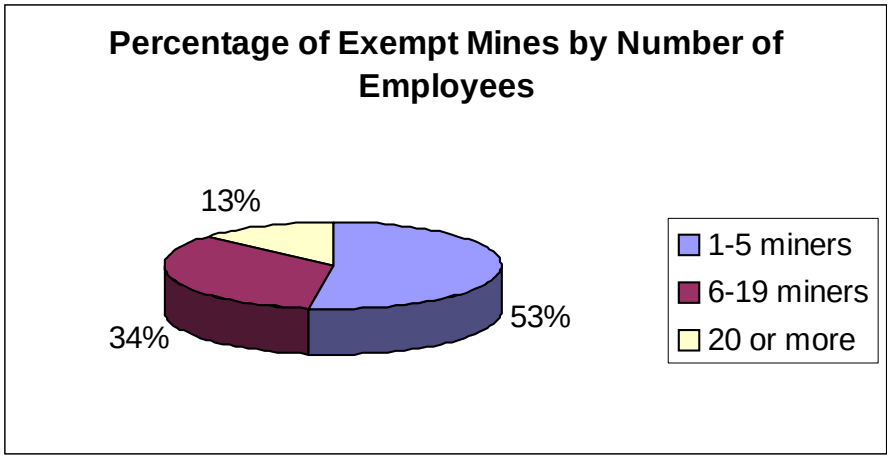
Lack of training is arguably the most significant factor contributing to this trend. We believe that at least some of these injuries and fatalities might have been prevented if victims had received appropriate, basic miner safety training. Our fatal accident investigations indicate that, during the period 1993-1997, some 70% of miners involved in fatal accidents at mines affected by the rider had not received health and safety training that complied with the requirements of part 48. In 1997, approximately 85% of fatal accident victims at metal and nonmetal mines had not received health and safety training in accordance with part 48.



Safety and health professionals from all sectors of industry recognize that training is a critical element of an effective safety and health program. Training of new employees, refresher training for experienced miners, and training for new tasks serve to inform workers of safety and health hazards inherent in the workplace and, just as important, to enable workers to identify and avoid those hazards. Training contributes to a reduction in accidents, injuries, illnesses, and fatalities by fostering safe work practices, increasing job skills, and enhancing awareness and prevention. Congress clearly recognized these principles by specifically including training provisions in the 1977 Mine Act.

One of the major reasons that exempt mines have experienced a higher fatality rate than the surface mining industry as a whole is that smaller operations, those which employ fewer than 20 workers, make up the vast majority of exempt mines. These smaller operations are believed to have the highest rates of noncompliance with part 48 training and, not surprisingly, the highest fatality rates. The data fully support these assertions.

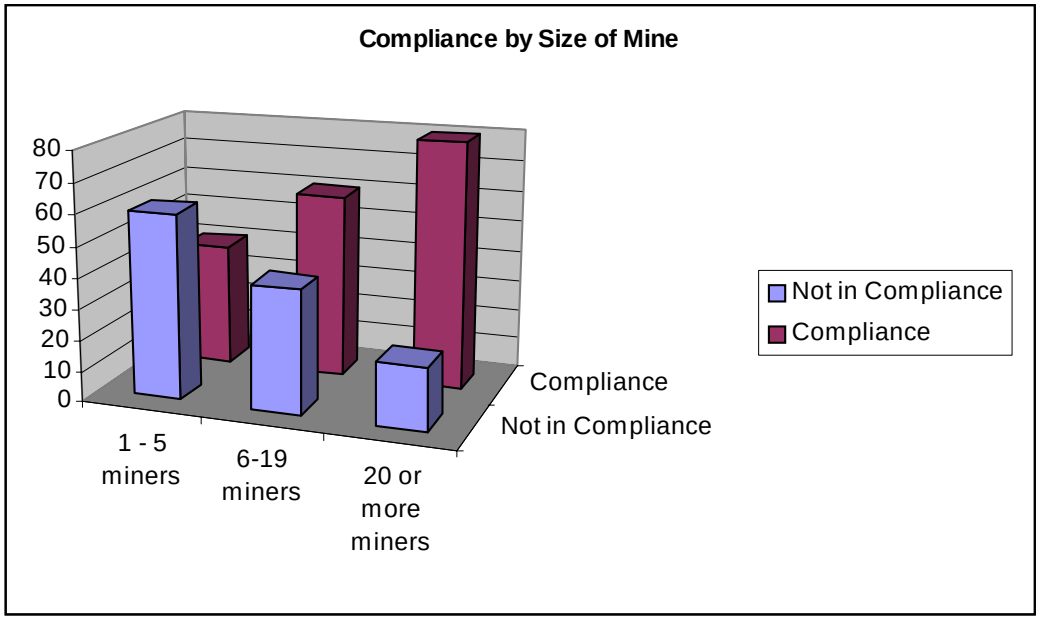
Of the 10,152 exempt mines, only 1,352 (13%) employ 20 miners or more. Approximately 3,498 (34%) employ between 6 and 19 miners, and approximately 5,300 (53%) employ 5 or fewer miners. Combined, operations that employ fewer than 20 miners account for 87% of all exempt mines.



Although all exempt mines are required to be in compliance with part 48 training requirements (though MSHA cannot enforce such requirements at exempt mines), MSHA experience (supported by comments provided at the preproposal public meetings and the

public hearings on the proposed rule) indicates that actual compliance is directly proportional to the size of the mine. Put simply, the larger the operation the greater the degree of compliance. Conversely, the smaller the mine the greater the degree of noncompliance. MSHA estimates that operations that employ 20 or more miners have a compliance rate of 80%. These mines make up only 13% of the total number of exempt mines. MSHA further estimates that operations that employ between 6 and 19 miners have a compliance rate of 60%. These mines make up about a third (34%) of the total number of exempt mines. Finally, MSHA estimates that the smallest mines, those that employ 5 or fewer miners, have a compliance rate of only 40%. These mines account for over half (53%) of all exempt mines.[12]

[12]For an explanation of how MSHA derived its estimates of compliance rates by mine size, see the discussion in the Scope section of Chapter IV of this REA.



MSHA's time-series data clearly support the premise that the smaller the mine the greater the fatality rate. Exempt mines with fewer than 20 employees have fatality rates approximately twice as high as exempt mines with 20 or more workers. Even more dramatic is the fact that exempt mines with 5 or fewer employees have fatality rates that are almost 4 times as large as exempt operations with 20 or more employees.

Part of the reason that smaller operations have higher fatality rates may be that they do not have the same level of resources as larger operations to invest in newer technology, which is often safer than older technology. Whatever the underlying cause, the data plainly indicate that the size of the mine substantially affects the fatality rate.

Thus, there is a high correlation between the size of the mine, the level of training compliance, and the fatality rate. In short, smaller mines, as a group, provide less training and experience higher fatality rates than larger mines.

PROJECTED BENEFITS

As previously mentioned, of the 200 miners involved in fatal accidents at surface mines from 1993 to 1997, exempt mines accounted for 163, or 81.5%, of the fatalities even though exempt mines accounted for only 64.3% of the hours worked at all surface mines. Conversely, non-exempt surface mines, which must provide training, accounted for 37, or 18.5%, of the fatalities, while working 35.7% of the hours.

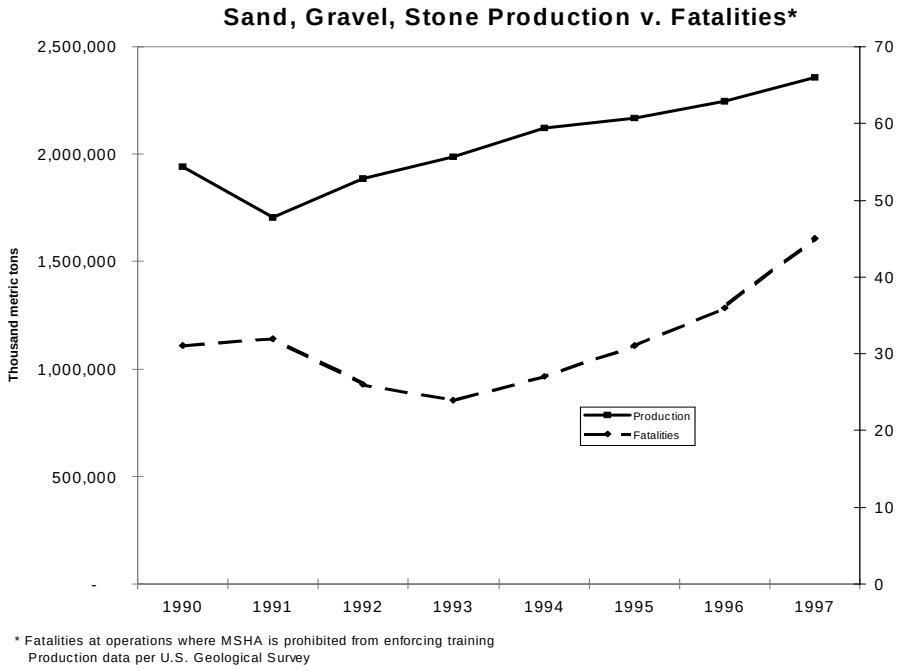
MSHA expects that mining hazards encountered at exempt mines are broadly similar to those encountered at other metal/nonmetal surface mines, and, therefore, the fatality and injury rates should be similar as well. If the fatality rate at exempt mines were the same as that at non-exempt mines, exempt mines would have experienced approximately 66 deaths over the 1993-1997 period, rather than the 163 deaths that actually occurred. Thus, 97 fatalities, averaging 19.4 fatalities per year, would have not occurred if exempt and non-exempt mines had had similar fatality rates.

Similarly, if the NFDL injury rate at exempt mines were the same as that at non-exempt metal and nonmetal mines, that exempt mines would have experienced an average of 3265 NFDL injuries per year in the 1990s rather than the 4379 NFDL injuries per year that actually occurred. Thus, approximately 1112 fewer NFDL injuries (34% fewer NFDL injuries) would have occurred per year if exempt mines and non-exempt metal and nonmetal mines had had similar injury rates.

Note that the preceding estimate of 19.4 excess fatalities may be a conservative measure of possible excess fatalities in the future, since the number of fatalities at exempt mines has been increasing. During the 1993-97 five-year period, the number of fatal accidents at exempt mines grew at a compounded rate of 17% annually, almost doubling from 24 fatalities in 1993 to 45 fatalities in 1997.

Probably the factor most responsible for the increase in the number of fatalities at exempt mines is growth in production, which has been expanding at a rate of approximately 5% per year in the 1990s. MSHA believes, however, that fatalities are not merely proportional to production levels, but that the fatality rate will often increase in response to increased production. There are several factors connected to increased production that can contribute to an increase in the fatality rate, including (1) an influx of new and less experienced miners and mine

operators; (2) longer work hours to meet production demands; and (3) increased demand for contractors who may be less familiar with the dangers on mine property.



On June 9, 1998, President Clinton signed the Transportation Equity Act for the 21st Century, commonly known as "TEA-21," which is the largest public works legislation in the nation's history and appropriates almost $218 billion for highway and transit programs. TEA-21 builds on the initiatives established in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which was probably the major cause of increased production in exempt mines over the past seven years. Since TEA-21 provides a 40 percent funding increase over the ISTEA levels

for highway and transit programs, the demand for materials produced by exempt mines is anticipated to increase substantially. Therefore, production at exempt mines is expected to increase accordingly, and absent the final rule, mine fatalities and injuries would be expected to increase as well.

Of course, MSHA recognizes that the higher fatality and injury rates at exempt mines may not be attributable entirely to lack of training. As previously mentioned, small mines (those which employ fewer than 20 miners) make up a disproportionate percentage of exempt mines, and it is precisely small mines which do not have access to resources, not only for training purposes, but for other investments in safety which create a safer work environment. These small mines may not have the most modern equipment, which tends to be safer than older equipment. For instance, new trucks may have, as standard equipment, features that provide added safety. For example, wipers with washers provide better visibility; retractable, anticinching seat belts are more likely to be worn by drivers than older seat belts; ergonomic seats reduce fatigue which may be responsible for some accidents; and padded, nonmetal dashboards absorb shock better than older dashboards, reducing head injuries. Smaller mines also may not be able to afford safety engineers and other safety specialists, which larger mines often employ.

Another factor which contributes to the high fatality and injury rates at exempt mines is the higher level of truck traffic associated with the industry and the resulting haulage accidents. Historically, haulage accidents at all mines, coal and metal/nonmetal, surface and underground, have accounted for approximately 30% of all fatalities. In recent years, exempt mines have accounted for a disproportionate share of metal/nonmetal haulage fatalities: 67% in 1996, 74% in 1997, and 80% in 1998, versus approximately 64% of total hours worked in metal/nonmetal mines. Of course, the contribution of inadequate training to haulage fatalities and injuries in exempt mines is not readily known.

While it is difficult to quantify the effect on the fatality and injury rates of factors such as increased production and the inherent difference between the exempt mining industry and other surface mining industries, MSHA estimates that these factors are responsible for about half of the disparity in injury and fatality rates between exempt mines and other surface mines. Thus, MSHA anticipates that this training rule can reasonably be expected to reduce the number of injuries and fatalities at exempt mines by preventing 557 NFDL injuries per year (50% x 1,114) and saving about 10 lives per year (50% x 19.4).

CONCLUSION

MSHA believes that, based on the available data, compliance with the requirements of this training rule will reduce the number of injuries and fatalities at formerly exempt mines. MSHA estimates that about 557 NFDL injuries and about 10 fatalities will be prevented per year as a result of the final rule.

IV. COST OF COMPLIANCE

SUMMARY

MSHA estimates that the total net cost of the final 30 CFR part 46 training requirements will be approximately $17.94 million annually, of which about $16.55 million will be borne by mine operations in the following surface nonmetal mining sectors: shell dredging, sand, gravel, stone, clay, colloidal phosphate, and limestone.[13] Since fiscal year 1980, Congress has prohibited MSHA from enforcing existing MSHA health and safety training regulations in 30 CFR part 48 at mines ("exempt mines") in these sectors of the surface nonmetal mining industry. The exempt mines that are not currently in compliance with the existing part 48 training requirements will incur costs of approximately $17.43 million annually to comply with the final rule, while those currently in compliance with the existing part 48 training requirements will derive net savings of approximately $0.89 million annually.

Over the past 20 years, MSHA has consistently categorized a mine as being small if it employs fewer than 20 workers and as being large if it employs 20 or more workers. For the purposes of this Regulatory Economic Analysis (REA), however, MSHA has

[13]The remaining $1.39 million in costs associated with the final rule will be borne primarily by non-miners who receive hazard awareness training, or by their employers.

identified three mine size categories based on the number of employees, which are relevant to the estimation of the cost of the final rule: (1) mines employing 5 or fewer workers; (2) mines employing between 6 and 19 workers; and (3) mines employing 20 or more workers.[14] These mine categories are important because they are believed to have significantly different compliance rates for existing part 48 training requirements. For this final rule, MSHA estimates that the following percentages of exempt mines by size category are currently not in compliance with existing part 48 requirements: 60 percent of mines with 5 or fewer employees; 40 percent of mines with between 6 and 19 employees; and 20 percent of mines with 20 or more employees.

In 1997, there were 10,152 exempt mines covered by the final rule. MSHA estimates that the average cost per exempt mine to comply with the final rule will be approximately $1,600 annually. For the 5,297 exempt mines with 5 or fewer employees, MSHA estimates that the average cost of the final rule per mine will be approximately $1,200 annually. For the 3,498 exempt mines with between 6 and 19 employees, MSHA estimates that the average cost of the final rule per mine will be approximately $1,800

[14]There is, in principle, a fourth relevant mine size: mines employing more than 500 workers. This mine size category (and its converse, mines with 500 or fewer employees) is needed for MSHA's analysis of the effects of the final rule on small entities (in Chapter V of this REA), as required by the Regulatory Flexibility Act. For the mine sectors covered by the final rule, however, there are no mine operations with more than 500 employees.

annually. For the 1,357 exempt mines with 20 or more employees, MSHA estimates that the average cost of the final rule per mine will be approximately $2,900 annually.

These costs per mine may be slightly misleading insofar as the exempt mines currently in compliance with existing part 48 training requirements will also be, for the most part, in compliance with the final rule and will therefore incur only relatively modest compliance costs. In fact, as previously stated, these mines would derive net savings of approximately $0.89 million annually as a result of the final rule.[15] For the exempt mine operators (including independent contractors that employ miners) not currently in compliance with existing part 48 training requirements, the annual cost of complying with the final rule will, on average, be approximately $1,900 per mine operator with 5 or fewer workers; $4,500 per mine operator with between 6 and 19 workers; and $15,800 per mine operator with 20 or more workers.

Table IV-1 summarizes MSHA's estimate of the yearly costs of the final rule by mine size and by provision. These costs reflect first year costs of $18,140,889 and second year costs of $17,694,277.

[15]The net savings consist of $1.18 million in compliance costs and $2.07 million in savings. The $2.07 million in savings arise from paragraph (e) of §46.4, which allows all documented employee safety meetings, regardless of duration, to be credited toward training requirements. (Under the existing part 48 training requirements, employee safety meetings lasting less than 30 minutes may not be credited toward training requirements.) For details about these savings, see Table IV-32 and the text that precedes it.

Table IV-1: Summary of Yearly Compliance Costs for the Final Rule *

Requirement/ Provision	Mines with 1-5 Employees	Mines with 6-19 Employees	Mines with 20+ Employees	Total Cost for All Mines	Total Cost for Other Parties	Total Cost
§ 46.3	$ 158,780	$ 71,467	$ 28,827	$ 259,074	$ 7,667	$ 266,741
§ 46.5	$2,436,253	$1,953,064	$ 774,018	$ 5,163,335	$ -	$ 5,163,335
§ 46.6	$ 426,676	$ 313,628	$ 113,382	$ 853,686	$ -	$ 853,686
§ 46.7	$ 351,365	$ 828,761	$1,183,662	$ 2,363,787	$ -	$ 2,363,787
§ 46.8	$2,139,686	$2,540,586	$1,527,819	$ 6,208,091	$ -	$ 6,208,091
§ 46.9	$ 45,449	$ 92,781	$ 88,338	$ 226,568	$ -	$ 226,568
§ 46.11	$ 581,912	$ 509,544	$ 200,597	$ 1,292,053	$1,292,053	$ 2,584,105
§ 46.12	$ 56,860	$ 74,440	$ 57,896	$ 189,196	$ 85,744	$ 274,940
Total	$6,196,980	$6,384,271	$3,974,539	$16,555,790	$1,385,463	$17,941,253

*Source: Table IV-20, Table IV-25, Table IV-27, Table IV-30; Table IV-33, Table IV-35, Table IV-36 and Table IV-37.

All MSHA cost estimates are presented in 1997 dollars. The total costs reported in Table IV-1, and in all other tables in this chapter, are, to the best of our knowledge, the result of accurate calculations. In some cases, however, the totals may appear to deviate from the sum or product of their component factors, but that is only because the component factors have been rounded in the tables for purposes of readability.

METHODOLOGY

For this final rule, MSHA estimated the following, as appropriate: (1) one-time or intermittent costs; (2) annualized costs (one-time or intermittent costs amortized over a specific number of years); and (3) annual costs. One-time costs are those

that are incurred once and do not recur annually. Intermittent costs are those that may recur from time to time, but not annually. Capital expenditures, such as the cost of purchasing compliance equipment, are an example of one-time or intermittent costs. Another example of a one-time or intermittent cost is the cost of writing a training plan. For the purposes of this REA, intermittent training costs have been amortized using a (real) discount rate of 7%, as required by the U. S. Office of Management and Budget (OMB), over a two-year period using the formula:

$$a = (i * (1 + i)^n) /((1 + i)^n - 1),$$

where "a" is the annualization factor, "i" is the discount rate, and "n" is the economic life of each intermittent expenditure. Under the assumption of a discount rate of 7% and an economic life of two years, "a" is equal to 0.553 (that is, the annualized cost is equal to 55.3% of the intermittent expenditure).[16]

Converting one-time or intermittent costs to annualized costs allows them to be added to annual costs in order to compute the total yearly costs of a rule. Annual costs are costs that

[16]In the PREA in support of the proposed part 46 training rule, MSHA assumed that the cost of writing a training plan was a one-time, non-recurring cost (with an infinite life and a corresponding annualization rate of 7%). For this final rule, MSHA assumes that there will be revisions to a training plan once every other year, on average.

normally recur annually. Two examples of annual costs are (annual) refresher training costs and recordkeeping costs.

MSHA used an hourly compensation rate of $17 for a clerical worker; $23 for a miner working in an exempt surface nonmetal mine; and $36 for a supervisor working in an exempt surface nonmetal mine.[17] These figures include benefits (which include social security, unemployment insurance, and workers' compensation), but they do not reflect shift differentials or overtime pay. For convenience, MSHA will refer to miner "compensation" in this REA as "wages," where that term is understood to include benefits. The Agency assumes that contractor workers receive the same wage as their fellow miners working in exempt surface nonmetal mines.

SCOPE

Table IV-2 indicates the number of mines and miners, excluding independent contractors and contractor workers, covered by the part 46 training rule. These estimates, previously presented in Chapter II, are disaggregated by mine size and by the five surface nonmetal commodity sectors that comprise the exempt mines: sand and gravel, limestone, stone, clay, and colloidal phosphate mines.

[17]Data derived from Schumacher, Otto L., ed. Western Mine Engineering, Mine Cost Service. Spokane, Washington: Western Mine Engineering, 1997.

Table IV-2: Number of Mines and Miners Covered by the Final Rule*

Commodity	1-5 Employees		6-19 Employees		20+ Employeesa		Total	
	Mines	Employees	Mines	Employees	Mines	Employees-	Mines	Employees
Sand & Gravel	4,092	11,231	1,848	17,891	278	8,911	6,218	38,033
Limestone b	504	1,626	955	11,097	659	37,872	2,118	50,595
Stone c	548	1,659	630	6,770	314	12,513	1,492	20,942
Clays d	151	463	64	640	106	8,175	321	9,2~-8
Colloidal osphate	2	8	1	6	-		3	1144
		14,987	3,498	--- 36,404	1,357	67,471		

* All mines covered by the rule are surface nonmetal mines. Source: U.S. Department of Labor, Mine Safety and Health Administration, Office of Standards, Regulations, and Variances, based on 1997 MIS data (quarter 1- quarter 4, 1997). Independent contractors are not included in these estimates. Office workers and contractor workers are not included in these employment figures. ,No mine covered by the rule has m ore than 500 em ployees. b This category includes the following: crushed/broken and dimension limestone, hydraulic cement, and lime mines.

,This category includes the following: crushed/broken and dimension stone m ines (stone, granite, marble, sandstone, slate, and traprock), as well as feldspar and shale mines. d This category includes the following: ceramic and refractory mineral clay, common clay, and fire clay mines.

The number of independent contractors and contractor workers working in exempt surface nonmetal mines covered by the final training rule is provided in Table IV-3. Of this total, MSHA estimates that only 20 percent of the contractor workers would be designated as miners, as defined in § 46.2 of the final rule (stipulating, in part, that a ""miner" includes independent contractors who are engaged in mining operations), and therefore required, under the final rule, to receive comprehensive training

(that is, new miner training, experienced miner training, and annual refresher training, as appropriate). MSHA estimates that only 20 percent of the independent contractors employ miners as defined in § 46.2 of the final rule.

Table IV-3: Number of Independent Contractors (ICs) and Contractor Workers (CWs) Covered by the Final Rule*

Mine Size by Number of Employees	Those Designated as Mine Operators & Miners[a]		Those Not Designated as Mine Operators & Miners[b]		Total	
	ICs	CWs	ICs	CWs	ICs	CWs
1-5	305	863	1,221	3,453	1,526	4,316
6-19	169	1,657	675	6,626	844	8,283
20 or More	69	2,922	275	11,688	344	14,610
Total	543	5,442	2,171	21,767	2,714	27,209

* Number of independent contractors and contractor workers covered by the final rule not directly itemized in MSHA data. Estimate of the percentage of surface independent contractors and contractor workers based on ratio of surface M/NM mine operators and miners covered by rule to total number of surface M/NM mine operators and miners. Estimate of the number of contractor workers excludes office workers.

[a] Estimate based on the assumption that 20 percent of the independent contractors and contract workers covered by rule are designated as mines and miners.

[b] Estimate based on the assumption that 80 percent of the independent contractors and contract workers covered by rule are not designated as mines and miners.

Table IV-4, which combines data from Table IV-2 and Table IV-3, indicates MSHA's estimate, disaggregated by mine size and commodity classification, of the number of mine operations and miners covered by the final rule——including independent contractors who employ miners as defined in § 46.2 of the final rule and contractor workers who are defined as miners in § 46.2

of the final rule. Because MSHA data do not identify independent contractors by commodity classification, independent contractors and contractor workers were apportioned to commodity classifications for the exempt mines in the same proportion as the distribution of mine operators and miners in Table IV-2. In this REA, unless otherwise specified, discussion of mine operations and miners covered by the final rule will refer to the estimates in Table IV-4.

Table IV-4: Number of Mine Operators and Miners, Including Designated Independ Contractors and Contractor Workers, Covered by the Final Rule*

Commodity	1-5 Employees		6-19 Employees		20+ Employees [a]		To
	Mines	Employees	Mines	Employees	Mines	Employees	Mines
Sand & Gravel	4,328	11,878	1,937	18,705	292	9,297	6,557
Limestone [b]	533	1,720	1,001	11,602	693	39,512	2,227
Stone [c]	580	1,755	660	7,078	330	13,055	1,570
Clays [d]	160	490	67	669	111	8,529	338
Colloidal Phosphate	2	8	1	6	-	-	3
Total	5,602	15,850	3,667	38,061	1,426	70,393	10,695

* Source: Table IV-2 and Table IV-3. Independent contractors designated as mine operators and contract designated as miners (in Table IV-3) were apportioned to commodity classifications in the same proportio distribution of mine operators and miners by commodity classification (in Table IV-2).

[a] No mine covered by the rule has more than 500 employees.

[b] This category includes the following: crushed/broken and dimension limestone, hydraulic cement, and li

[c] This category includes the following: crushed/broken and dimension stone mines (stone, granite, marbl sandstone, slate, and traprock), as well as feldspar and shale mines.

[d] This category includes the following: ceramic and refractory mineral clay, common clay, and fire clay min

Table IV-5 provides MSHA's estimate of the number of exempt mine operations and miners that are not currently in compliance with existing part 48 training requirements. The mine operations identified in Table IV-5 will incur most of the costs to comply with the comprehensive training requirements of the final rule.

The exempt mine operations currently in compliance with existing part 48 training requirements will need to satisfy only a few additional requirements in order to achieve compliance with the new part 46 final rule. These requirements include (1) task training for one-time assignments (under new task training in § 46.7); (2) independent contractors informing production-operators of any hazards their work at the mine might create (under § 46.12(b)(2) of the final rule); (3) production-operators providing information about site-specific hazards to independent contractors who perform work at the mine (under § 46.12(a)(2) of the final rule); and (4) training being provided in a language understood by the miner receiving the training (under § 46.4(a)(3) of the final rule). In addition, under § 46.2(g)(1)(i), the final rule applies to construction workers, who currently are specifically excluded (under § 48.22(a)(1)(i)) from the miner training requirements under existing part 48. The costs associated with these additional requirements for mine operations currently in compliance (or construction workers not out of compliance) with existing part 48 training requirements

are separately estimated for each section of the final rule, as appropriate. [18]

Table IV-5: Number of Mines and Miners Not Currently in Compliance with the Final Rule

Commodity	1-5 Employees [a]		6-19 Employees [b]		20+ Employees [c]		Total	
	Mines	Employees	Mines	Employees	Mines	Employees	Mines	Employees
Sand & Gravel	2,597	7,127	775	7,482	58	1,859	3,430	16,468
Limestone[d]	320	1,032	400	4,641	139	7,902	859	13,575
Stone[e]	348	1,053	264	2,831	66	2,611	678	6,495
Clays[f]	96	294	27	268	22	1,706	145	2,267
Colloidal Phosphate	1	5	0	3	-	-	2	8
Total	3,361	9,510	1,467	15,224	285	14,079	5,113	38,813

a Number affected = 60% of those exempted mines and miners in this size class. (Source: Table IV-4).

b Number affected = 40% of those exempted mines and miners in this size class. (Source: Table IV-4).

c Number affected = 20% of those exempted mines and miners in this size class. (Source: Table IV-4).

d This category includes the following: crushed/broken and dimension limestone, hydraulic cement, and lime mines.

e This category includes the following: crushed/broken and dimension stone mines (stone, granite, marble, sandstone, slate, and traprock), as well as feldspar and shale mines.

f This category includes the following: ceramic and refractory mineral clay, common clay, and fire clay mines.

[18]MSHA expects that requirement (3) above, concerning production-operators providing site-specific hazard information to independent contractors, is already being met by exempt mines currently in compliance with existing part 48 training requirements and will therefore not impose any additional costs on these mines. This point is further explained in the discussion of § 46.12 costs in this chapter. MSHA also anticipates that requirement (4) above, concerning training in a language understood by the miner receiving the training, is already being met by exempt mines currently in compliance with existing part 48 training requirements. MSHA believes that, in practice, mine operators possess and rely on bilingual capabilities, as needed, to provide and explain work assignments. Therefore, this requirement should impose no additional costs, or only negligible costs, on mine operators.

also increased. Several commenters specifically mentioned very small “mom and pop” operations, where family members are the employees, as currently having particularly high rates of non-compliance (or substantial non-compliance) with existing part 48 training requirements. MSHA has interpreted “mom and pop” operations broadly to mean mines with 5 or fewer employees.

A commenter at the Dallas preproposal public meeting and at the Washington, D. C. public hearing on the proposed rule estimated that roughly 60 percent of exempt mines in Texas, most of which have fewer than 10 employees, are currently not in compliance with existing part 48 training requirements. A commenter, at the Albany preproposal public meeting, estimated that, in New York, approximately 50 percent of small mines, employing 20 or fewer employees, are currently not in compliance with existing part 48 training requirements. A third commenter, at the Washington, D. C. public hearing on the proposed rule, estimated that only 20 to 25 percent of all mines in North Carolina are currently not in compliance with existing part 48 training requirements.

MSHA took these comments into account in developing its estimates of current non-compliance rates with existing part 48 training requirements. For this REA, MSHA estimates that 60 percent of exempt mines with 5 or fewer employees, 40 percent of exempt mines with between 6 and 19 employees, and 20 percent of

exempt mines with 20 or more employees are currently not in compliance with existing part 48 training requirements. Applying these estimates to the population of exempt mines, MSHA calculates that some 48 percent of exempt mines overall are currently not in compliance with part 48 training requirements.[19]

The Agency believes that these estimates are basically consistent both with the comments received and with the fatality rates by mine size provided in Chapter III.

[19]MSHA recognizes that many, and perhaps most, exempt mines are neither 100% in compliance with nor 100% out of compliance with existing part 48 training requirements. Nevertheless, the Agency believes that most exempt mines that it has categorized as being "in compliance" are either fully or almost fully (substantially) in compliance. The degree of compliance of "non-compliant" exempt mines is less certain, but for purposes of this REA, MSHA assumes they are completely out of compliance with existing part 48 training requirements. To the extent that this assumption is wrong, the Agency will have overestimated the costs of the final rule.

SECTION-BY-SECTION DISCUSSION

§ 46.3 Training Plans

This section contains a number of requirements——in paragraphs (a), (c), (d), (e), (g), (h) and (i)——that have associated costs.

§ 46.3(a) requires each mine operator to develop (and implement) a written plan that provides effective programs in new miner training, experienced miner training, new task training, annual refresher training, and hazard awareness training.

MSHA estimates that, in mines with fewer than 20 employees, a supervisor will require 2 hours, on average, to develop a written training plan complying with § 46.3(a). For mines with 20 or more employees, MSHA estimates a supervisor will require 4 hours, on average, to develop a written training plan complying with § 46.3(a). These estimates are contingent upon MSHA, industry, and labor developing model training plans and materials for use by mine operators, particularly small operators.

Table IV-6 provides MSHA's estimate of the cost of § 46.3(a) both for the exempt mines currently not in compliance with existing part 48 training requirements and for the exempt mines currently not out of compliance with existing part 48 training requirements. The latter mines consist entirely of construction contractors excluded from existing part 48 training requirements but covered under the final rule. MSHA estimates that

approximately 10 percent of independent contractors designated as mine operators are construction contractors. MSHA assumes that mine operators will revise the training plan once every two years, on average.[20] This cost has been converted to yearly costs in Table IV-6 using an annualization factor of 55.3%.

[20]In the PREA in support of the proposed part 46 training rule, MSHA assumed that the cost of writing a training plan was a one-time, non-recurring cost. New § 46.3 (j) of the final rule requires mine operators to comply with all of the procedures for plan approval under § 46.3 whenever a training plan undergoes revisions. As noted above, MSHA assumes for the final rule that mine operators will make changes to the training plan once every other year, on average.

Table IV-6: Cost to Write Training Plan in Accordance with § 46.3 (a) of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	3,361	$ 72	$ 242,006	$ 133,830
6-19	1,467	$ 72	$ 105,610	$ 58,402
20 or More	285	$ 144	$ 41,069	$ 22,711
Total	5,113		$ 388,685	$ 214,943
Exempt Mines Currently in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [d]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	12	$ 72	$ 878	$ 486
6-19	10	$ 72	$ 730	$ 404
20 or More	6	$ 144	$ 795	$ 440
Total	28		$ 2,403	$ 1,329
All Exempt Mines				
Mine Size by Number of Employees	# of Mines	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	3,373	$ 72	$ 242,885	$ 134,315
6-19	1,477	$ 72	$ 106,340	$ 58,806
20 or More	291	$ 144	$ 41,864	$ 23,151
Total	5,141		$ 391,088	$ 216,272

[a] Number of mines = the number of mines not currently in compliance (from Table IV-5).

[b] Cost per mine = h X $36, where h is the number of hours of supervisor's time required to develop a training plan and h=2 for mines with fewer than 20 employees and h=4 for mines with 20 or more employees. $36 is the hourly wage rate for a M/NM mine supervisor.

[c] Total annualized cost = 0.553 X total (intermittent, 2-year) cost.

[d] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.1 X c X s, where 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine opeators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

The costs summarized in Table IV-6, for writing a training plan in accordance with § 46.3(a) of the final rule, only reflect the costs borne by existing exempt mines. MSHA recognizes, however, that in the normal course of events each year, some mines in the exempt mining industries will close and other, new mines will open. These new mines will also be subject to all of the requirements of § 46.3 to develop a training plan.

Based on its analysis of mine data from 1991-1998, MSHA estimates that in the absence of cyclical macroeconomic effects, slightly more than 200 new mines in the exempt mining industries open annually.[21] This is equivalent to approximately two percent of the existing exempt mining population. MSHA assumes that the costs of developing a training plan under § 46.3 of the final rule will be the same, on average, for a new mine as for an existing exempt mine.[22] Table IV-7 provides MSHA's estimate of the cost each year of § 46.3 (a) for new mines.[23]

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[21]During the 1991-1998 period, ISTEA (the Intermodal Surface Transportation Efficiency Act) was in force. Therefore, MSHA anticipates that the number of new mines during the period is broadly representative of the number of new mines that will open annually in future years under TEA-21 (the Transportation Equity Act for the 21st Century) funding.

[22]In the PREA in support of the proposed part 46 training rule, MSHA requested information about the costs of developing a training plan under §46.3 for new mines relative to the costs for existing exempt mines. MSHA received no comments on this issue.

[23]Note that this cost for new mines recurs annually because approximately 200 new mines in exempt mining industries open each year. MSHA did not include a recurring cost for these new mines to make revisions to their training plans (on average, once every two years), because these costs would be offset by an approximately equal number of existing mines that close each year and therefore do not later revise their training plans.

Table IV-7: Annual Cost for New Mines to Write Training Plan in Accordance with § 46.3 (a) of the Final Rule

Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost
1-5	112	$ 72	$ 8,067
6-19	73	$ 72	$ 5,280
20 or More	29	$ 144	$ 4,107
Total	214		$ 17,454

[a] Number of mines = 0.02 X m, where m is the number of existing mines in the exempt mining industries (from Table IV-4).

[b] Cost per mine = h X $36, where h is the number of hours of supervisor's time required to develop a training plan and h=2 for mines with fewer than 20 employees and h=4 for mines with 20 or more employees. $36 is the hourly wage rate for a M/NM mine supervisor.

§ 46.3(c) requires the mine operator to submit the training plan for approval by the Regional Manager (or designee for the region where the mine is located) if the plan fails to contain the minimum information specified in paragraphs § 46.3(b)(1) through (b)(5). Mine operators may also voluntarily submit a training plan for MSHA approval. Mine operators must notify miners or their representatives when they submit a training plan for approval by a Regional Manager. Miners and their representatives may also request review and approval of the plan by the Regional Manager and must notify operators of their request.[24]

[24]The cost of this option, which would be borne by miners and their representatives, is captured in Table IV-12 and Table IV-13, as part of the costs of § 46.3(e).

MSHA estimates that 20 percent of the exempt mines not currently in compliance with existing part 48 training requirements and 20 percent of the construction contractors designated as operators of exempt mines will have to submit a training plan for approval—— either because the mine operator developed a training plan that did not contain the minimum information needed for automatic approval or because the operator or a miner or miners' representative requested review and approval of the plan by the Regional Manager. For each of these mines, MSHA estimates that submitting a training plan for approval and notifying miners or their representatives will involve 0.2 hours for a clerical worker to photocopy and mail the training plan, $1.50 in photocopying expense, and $2.00 for postage.

Table IV-8 presents MSHA's estimate of the cost of § 46.3(c) for the affected exempt mines. This cost has been converted to yearly costs in Table IV-8 using an annualization factor of 55.3%.

Table IV-8: Cost of Submitting Training Plan for Approval in Accordance with § 46.3 (c) of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	672	$ 6.90	$ 4,638	$ 2,565
6-19	293	$ 6.90	$ 2,024	$ 1,119
20 or More	57	$ 6.90	$ 394	$ 218
Total	1,023		$ 7,056	$ 3,902
Exempt Mines Currently in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [d]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	2	$ 6.90	$ 17	$ 9
6-19	2	$ 6.90	$ 14	$ 8
20 or More	1	$ 6.90	$ 8	$ 4
Total	6		$ 38	$ 21
All Exempt Mines				
Mine Size by Number of Employees	# of Mines	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	675	$ 6.90	$ 4,655	$ 2,574
6-19	295	$ 6.90	$ 2,038	$ 1,127
20 or More	58	$ 6.90	$ 401	$ 222
Total	1,028		$ 7,095	$ 3,923

[a] Number of mines = 0.2 X m, where m is the number of mines not currently in compliance (from Table IV-5).

[b] Cost per mine = (0.2 X $17) + (10 X $0.15) + $2, where 0.2 is the number of hours required for a clerical worker to photocopy and mail the training plan; $17 is the hourly wage rate for a clerical worker; 10 is the number of pages to be photocopied; $0.15 is the photocopying cost per page; and $2 is the cost of postage.

[c] Total annualized cost = 0.553 X total (intermittent, 2-year) cost.

[d] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.2 X 0.1 X c X s, where 0.2 is the proportion of mines submitting a training plan for approval; 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine opeators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

Table IV-9 presents MSHA's estimate of the annual cost of § 46.3(c) for new mines in the exempt industries.

Table IV-9: Annual Cost for New Mines to Submit Training Plan for Approval in Accordance with § 46.3 (c) of the Final Rule

Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost
1-5	22	$ 6.90	$ 155
6-19	15	$ 6.90	$ 101
20 or More	6	$ 6.90	$ 39
Total	43		$ 295

[a] Number of mines = 0.02 X 0.2 X m, where m is the number of existing mines in the exempt mining industries (from Table IV-4).

[b] Cost per mine = (0.2 X $17) + (10 X $0.15) + $2, where 0.2 is the number of hours required for a clerical worker to photocopy and mail the training plan; $17 is the hourly wage rate for a clerical worker; 10 is the number of pages to be photocopied; $0.15 is the photocopying cost per page; and $2 is the cost of postage.

§ 46.3(d) requires the mine operator to provide the miners' representative, if any, with a copy of the training plan. At mines where no miners' representative has been designated, the operator must post a copy of the plan at the mine site or provide a copy to each miner.

For each exempt mine not currently in compliance with existing part 48 training requirements and for each of the construction contractors designated as operators of exempt mines, MSHA estimates that § 46.3(d) will impose the following cost burden: 0.1 hours for a clerical worker to photocopy and either

post or deliver the training plan and $0.75 in photocopying expense.

Table IV-10 displays MSHA's estimate of the cost of § 46.3(d) for the affected exempt mines. This cost has been converted to yearly costs in Table IV-10 using an annualization factor of 55.3%.

Table IV-10: Cost of Providing Training Plan to Miners' Representative or Posting Plan in Accordance with § 46.3 (d) of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	3,361	$ 2.45	$ 8,235	$ 4,554
6-19	1,467	$ 2.45	$ 3,594	$ 1,987
20 or More	285	$ 2.45	$ 699	$ 386
Total	5,113		$ 12,527	$ 6,928
Exempt Mines Currently in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [d]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	12	$ 2.45	$ 30	$ 17
6-19	10	$ 2.45	$ 25	$ 14
20 or More	6	$ 2.45	$ 14	$ 7
Total	28		$ 68	$ 38
All Exempt Mines				
Mine Size by Number of Employees	# of Mines	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	3,373	$ 2.45	$ 8,265	$ 4,570
6-19	1,477	$ 2.45	$ 3,619	$ 2,001
20 or More	291	$ 2.45	$ 712	$ 394
Total	5,141		$ 12,596	$ 6,965

[a] Number of mines = the number of mines not currently in compliance (from Table IV-5).

[b] Cost per mine = (0.1 X $17) + (5 X $0.15), where 0.1 is the number of hours required for a clerical worker to photocopy and either post or deliver the training plan; $17 is the hourly wage rate for a clerical worker; 5 is the number of pages to be photocopied; and $0.15 is the photocopying cost per page.

[c] Total annualized cost = 0.553 X total (intermittent, 2-year) cost.

[d] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.1 X c X s, where 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine opeators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

Table IV-11 presents MSHA's estimate of the annual cost of § 46.3 (d) for new mines in the exempt industries.

Table IV-11: Annual Cost for New Mines to Provide Training Plan to Miners' Representatives or to Post Plan in Accordance with § 46.3 (d) of the Final Rule

Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost
1-5	112	$ 2.45	$ 274
6-19	73	$ 2.45	$ 180
20 or More	29	$ 2.45	$ 70
Total	214		$ 524

[a] Number of mines = 0.02 X m, where m is the number of existing mines in the exempt mining industries (from Table IV-4).

[b] Cost per mine = (0.1 X $17) + (5 X $0.15), where 0.1 is the number of hours required for a clerical worker to photocopy and either post or deliver the training plan; $17 is the hourly wage rate for a clerical worker; 5 is the number of pages to be photocopied; and $0.15 is the photocopying cost per page.

§ 46.3(e) allows miners or their representatives to submit written comments on the training plan to the operator or to the Regional Manager, as appropriate. In addition, § 46.3(c) requires that miners and their representatives notify the production-operator or independent contractor if they request review and approval of the training plan by the Regional Manager.

MSHA assumes that miners or their representatives who submit written comments will prepare those comments while off-duty and will not receive compensation from the mine operator for their

efforts. Similarly, MSHA assumes that miners and their representatives will use their own time and resources to notify the production-operator or independent contractor that they request review and approval of the training plan. Therefore, these provisions will not impose a cost on mine operators. MSHA believes, however, that there will be a cost associated with these provisions, in the form of the resource cost and the opportunity cost of the time spent by miners and miners' representatives. MSHA further believes the appropriate opportunity cost to be the wage rate for the miner or miners' representative.

MSHA estimates that a miner or miners' representative will submit written comments on the training plan for only 5 percent of the exempt mines that are currently not in compliance with existing part 48 training requirements and for only 5 percent of the construction contractors designated as operators of exempt mines. MSHA further estimates that a miner or miners' representative will require 2 hours, on average, to prepare written comments on the training plan and that mailing the written comments would impose postage costs of $1.00.

MSHA estimates that a miner or miners' representative will request review and approval of the training plan by the Regional Manager for only 2 percent of the exempt mines that are currently not in compliance with existing part 48 training requirements and

for only 2 percent of the construction contractors designated as operators of exempt mines. MSHA further estimates that a miner or miners' representative will require 0.3 hours to prepare and submit written notification, $0.15 to photocopy the notification, and $1.00 in postage costs to mail the notification.

Table IV-12 provides MSHA's estimate of the total cost associated with § 46.3(e), as well as with § 46.3(c), borne by miners and miners' representatives in exempt mines not currently in compliance with existing part 48 training requirements and in exempt mines in which the mine operator is a construction contractor. This cost has been converted to yearly costs in Table IV-12 using an annualization factor of 55.3%.

Table IV-12: Cost of Miners or Their Representatives Submitting Written Comment about the Training Plan in Accordance with § 46.3 (e) of the Final Rule*

Exempt Mines Currently Not in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	3,361	$ 2.51	$ 8,430	$ 4,662
6-19	1,467	$ 2.51	$ 3,679	$ 2,034
20 or More	285	$ 2.51	$ 715	$ 396
Total	5,113		$ 12,824	$ 7,092

Exempt Mines Currently in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [d]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	12	$ 2.51	$ 31	$ 17
6-19	10	$ 2.51	$ 25	$ 14
20 or More	6	$ 2.51	$ 14	$ 8
Total	28		$ 70	$ 39

All Exempt Mines				
Mine Size by Number of Employees	# of Mines	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	3,373	$ 2.51	$ 8,460	$ 4,679
6-19	1,477	$ 2.51	$ 3,704	$ 2,048
20 or More	291	$ 2.51	$ 729	$ 403
Total	5,141		$ 12,894	$ 7,130

* These costs are borne not by mine operators, but by miners and miners' representatives.

[a] Number of mines = the number of mines not currently in compliance (from Table IV-5).

[b] Cost per mine = (0.05 X ((2 X $23) + $1)) + (0.02 X ((0.3 X $23) + $1)), where 0.05 is the proportion of mines for which a miner or miners' representative submits written comments; 2 is the number of hours needed to prepare written comments; $23 is the hourly wage rate for a M/NM miner; $1 is the cost of postage; 0.02 is the proportion of exempt mines whose training plans a miner or miners' representative will request review and approval by the Regional Manager; and 0.3 is the number of hours to prepare and submit written notification.

[c] Total annualized cost = 0.553 X total (intermittent, 2-year) cost.

[d] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.1 X c X s, where 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine opeators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

Table IV-13 presents MSHA's estimate of the annual cost of § 46.3 (e), as well as § 46.3(c) to miners and miners' representatives in new mines in the exempt industries.

Table IV-13: Annual Cost of Miners or Their Representatives in New Mines Submitting Written Comments about the Training Plan in Accordance with § 46.3 (e) of the Final Rule*

Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost
1-5	112	$ 2.51	$ 281
6-19	73	$ 2.51	$ 184
20 or More	29	$ 2.51	$ 72
Total	214		$ 536

* These costs are borne not by mine operators, but by miners and miners' representatives.

[a] Number of mines = 0.02 X m, where m is the number of existing mines in the exempt mining industries (from Table IV-4).

[b] Cost per mine = (0.05 X ((2 X $23) + $1)) + (0.02 X ((0.3 X $23) + $1)), where 0.05 is the proportion of mines for which a miner or miners' representative submits written comments; 2 is the number of hours needed to prepare written comments; $23 is the hourly wage rate for a M/NM miner; $1 is the cost of postage; 0.02 is the proportion of exempt mines not currently in compliance with the part 48 training requirements whose training plans a miner or miners' representative will request review and approval by the Regional Manager; and 0.3 is the number of hours to prepare and submit written notification.

§ 46.3(g) requires the mine operator to provide the miners' representative, if any, with a copy of the approved training plan within one week of approval. At mines where no miners' representative has been designated, the operator must post a copy of the plan at the mine site or provide a copy to each miner within one week of approval.

For each exempt mine not currently in compliance with existing part 48 training requirements and for each exempt mine in which the mine operator is a construction contractor, MSHA estimates that § 46.3(g) will impose the following cost burden: 0.1 hours for a clerical worker to photocopy and either post or deliver the approved training plan and $0.75 in photocopying expense.

Table IV-14 displays MSHA's estimate of the cost of § 46.3(g) for the affected exempt mines. This cost has been converted to yearly costs in Table IV-14 using an annualization factor of 55.3%.

Table IV-14: Cost of Providing Approved Training Plan to Miners' Representatives or Posting Approved Plan in Accordance with § 46.3 (g) of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	672	$ 3.45	$ 2,319	$ 1,283
6-19	293	$ 3.45	$ 1,012	$ 560
20 or More	57	$ 3.45	$ 197	$ 109
Total	1,023		$ 3,528	$ 1,951

Exempt Mines Currently in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [d]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	2	$ 3.45	$ 8	$ 5
6-19	2	$ 3.45	$ 7	$ 4
20 or More	1	$ 3.45	$ 4	$ 2
Total	6		$ 19	$ 11

All Exempt Mines				
Mine Size by Number of Employees	# of Mines	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	675	$ 3.45	$ 2,328	$ 1,287
6-19	295	$ 3.45	$ 1,019	$ 564
20 or More	58	$ 3.45	$ 201	$ 111
Total	1,028		$ 3,547	$ 1,962

[a] Number of mines = 0.2 X m, where m is the number of mines not currently in compliance (from Table IV-5).

[b] Cost per mine = (0.1 X $17) + (5 X $0.15) + $1, where 0.1 is the number of hours required for a clerical worker to photocopy and mail the training plan; $17 is the hourly wage rate for a clerical worker; 5 is the number of pages to be photocopied; $0.15 is the photocopying cost per page; and $1 is the cost of postage.

[c] Total annualized cost = 0.553 X total (intermittent, 2-year) cost.

[d] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.2 X 0.1 X c X s, where 0.2 is the proportion of mines submitting a training plan for approval; 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine opeators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

Table IV-15 presents MSHA's estimate of the annual cost of § 46.3(g) for new mines in the exempt industries.

Table IV-15: Annual Cost of New Mines Providing Approved Training Plan to Miners' Representatives or Posting Approved Plan in Accordance with § 46.3 (g) of the Final Rule

Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost
1-5	22	$ 3.45	$ 77
6-19	15	$ 3.45	$ 51
20 or More	6	$ 3.45	$ 20
Total	43		$ 148

[a] Number of mines = 0.02 X 0.2 X m, where m is the number of existing mines in the exempt mining industries (from Table IV-4).

[b] Cost per mine = (0.1 X $17) + (5 X $0.15) + $1, where 0.1 is the number of hours required for a clerical worker to photocopy and mail the training plan; $17 is the hourly wage rate for a clerical worker; 5 is the number of pages to be photocopied; $0.15 is the photocopying cost per page; and $1 is the cost of postage.

§ 46.3(h) permits an operator, miner, or miners' representative to appeal a decision of the Regional Manager regarding the approval of a training plan.

MSHA assumes that appeals would be rare and would come predominantly from mine operators. MSHA estimates that 2 percent of mine operators that submit a written training plan for approval will appeal the decision on approval. Of these, MSHA estimates that 90% will have a mine supervisor write a written appeal (taking 4 hours per appeal to write) and that 10% will use a lawyer to appeal (at a cost of $2,000 per appeal).

Table IV-16 presents MSHA's estimate of the appeal costs associated with § 46.3(h) for the exempt mines currently not in compliance with existing part 48 training requirements and for the exempt mines in which the mine operator is a construction contractor. This cost has been converted to yearly costs in Table IV-16 using an annualization factor of 55.3%.

Table IV-16: Cost of Appealing Decision on Approval of the Training Plan in Accordance with § 46.3 (h) of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	13	$ 330.50	$ 4,444	$ 2,457
6-19	6	$ 330.50	$ 1,939	$ 1,072
20 or More	1	$ 330.50	$ 377	$ 209
Total	20		$ 6,760	$ 3,738

Exempt Mines Currently in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [d]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	0.05	$ 330.50	$ 16	$ 9
6-19	0.04	$ 330.50	$ 13	$ 7
20 or More	0.02	$ 330.50	$ 7	$ 4
Total	0.11		$ 37	$ 20

All Exempt Mines				
Mine Size by Number of Employees	# of Mines	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	13	$ 330.50	$ 4,460	$ 2,466
6-19	6	$ 330.50	$ 1,953	$ 1,080
20 or More	1	$ 330.50	$ 384	$ 213
Total	21		$ 6,796	$ 3,758

[a] The number of mines = 0.02 X 0.2 X m, where m is the number of mines not currently in compliance (from Table IV-5); 0.2 is the proportion of those mines that will submit a training plan for approval; and 0.02 is the proportion of those that appeal their approval status.

[b] Cost per mine = (0.9 X (4 X $36 +$1)) + (0.1 X $2,000), where 0.9 is the share of those appealing that do not use a lawyer to appeal; 4 is the number of hours needed for a mine supervisor to prepare a written appeal; $36 is the hourly wage rate for a M/NM mine supervisor; $1 is the cost of postage for mailing; 0.1 is the share of those appealing that use a lawyer to appeal; and $2,000 is the cost of using legal services to appeal.

[c] Total annualized cost = 0.553 X total (intermittent, 2-year) cost.

[d] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.2 X 0.02 X 0.1 X c X s, where 0.2 is the proportion of mines submitting a training plan for approval; 0.02 is the proportion of those that appeal their approval status; 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine opeators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

Table IV-17 presents MSHA's estimate of the annual cost of §46.3(h) for new mines in the exempt industries.

Table IV-17: Cost of New Mines Appealing Decision on Approval of the Training Plan in Accordance with § 46.3 (h) of the Final Rule

Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost
1-5	22	$ 6.61	$ 148
6-19	15	$ 6.61	$ 97
20 or More	6	$ 6.61	$ 38
Total	43		$ 283

[a] Number of mines = 0.02 X 0.2 X m, where m is the number of existing mines in the exempt mining industries (from Table IV-4).

[b] Cost per mine = 0.02 X ((0.9 X (4 X $36 +$1)) + (0.1 X $2,000)), where 0.02 is the proportion of mines that will appeal the approval decision; 0.9 is the share of those appealing that do not use a lawyer to appeal; 4 is the number of hours needed for a mine supervisor to prepare a written appeal; $36 is the hourly wage rate for a M/NM mine supervisor; $1 is the cost of postage for mailing; 0.1 is the share of those appealing that use a lawyer to appeal; and $2,000 is the cost of using legal services to appeal.

§ 46.3 (i) requires the mine operator to make available a copy of the current training plan for inspection by MSHA and for examination by miners and their representatives at the mine site within one business day of the request.

For each exempt mine not currently in compliance with existing part 48 training requirements and for each exempt mine in which the mine operator is a construction contractor, MSHA estimates that § 46.3(i) will impose the following cost burden: 0.1 hours for a clerical worker to photocopy and file the training plan and $0.75 in photocopying expense.

Table IV-18 displays MSHA's estimate of the cost of § 46.3(i) for the affected exempt mines. This cost has been converted to yearly costs in Table IV-18 using an annualization factor of 55.3%.

Table IV-18: Cost of Maintaining Copy of Current Training Plan in Accordance with § 46.3 (i) of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	3,361	$ 2.45	$ 8,235	$ 4,554
6-19	1,467	$ 2.45	$ 3,594	$ 1,987
20 or More	285	$ 2.45	$ 699	$ 386
Total	5,113		$ 12,527	$ 6,928
Exempt Mines Currently in Compliance with Part 48				
Mine Size by Number of Employees	# of Mines [d]	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	12	$ 2.45	$ 30	$ 17
6-19	10	$ 2.45	$ 25	$ 14
20 or More	6	$ 2.45	$ 14	$ 7
Total	28		$ 68	$ 38
All Exempt Mines				
Mine Size by Number of Employees	# of Mines	Cost per Mine [b]	Total Cost	Total Annualized Cost [c]
1-5	3,373	$ 2.45	$ 8,265	$ 4,570
6-19	1,477	$ 2.45	$ 3,619	$ 2,001
20 or More	291	$ 2.45	$ 712	$ 394
Total	5,141		$ 12,596	$ 6,965

[a] Number of mines = the number of mines not currently in compliance (from Table IV-5).

[b] Cost per mine = (0.1 X $17) + (5 X $0.15), where 0.1 is the number of hours required for a clerical worker to photocopy and file the training plan; $17 is the hourly wage rate for a clerical worker; 5 is the number of pages to be photocopied; and $0.15 is the photocopying cost per page.

[c] Total annualized cost = 0.553 X total (intermittent, 2-year) cost.

[d] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.1 X c X s, where 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine opeators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

Table IV-19 presents MSHA's estimate of the annual cost of § 46.3(i) for new mines in the exempt industries.

Table IV-19: Cost of New Mines Maintaining Copy of Current Training Plan in Accordance with § 46.3 (i) of the Final Rule

Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost
1-5	112	$ 2.45	$ 274
6-19	73	$ 2.45	$ 180
20 or More	29	$ 2.45	$ 70
Total	214		$ 524

[a] Number of mines = 0.02 X m, where m is the number of existing mines in the exempt mining industries (from Table IV-4).

[b] Cost per mine = (0.1 X $17) + (5 X $0.15), where 0.1 is the number of hours required for a clerical worker to photocopy and either post or deliver the training plan; $17 is the hourly wage rate for a clerical worker; 5 is the number of pages to be photocopied; and $0.15 is the photocopying cost per page.

Table IV-20 summarizes MSHA's estimate of the yearly costs to both existing and new mines in the exempt industries to comply with § 46.3 of the final rule.

Table IV-20: Summary of Yearly Costs to Comply with § 46.3 of the Final Rule *

Requirement/ Provision	Mines with 1-5 Employees	Mines with 6-19 Employees	Mines with 20+ Employees	Total Cost for All Mines	Total Cost for Other Parties	Total Cost
§ 46.3 (a) Existing	$ 134,315	$ 58,806	$ 23,151	$ 216,272	$ -	$ 216,272
§ 46.3 (a) New	$ 8,067	$ 5,280	$ 4,107	$ 17,454	$ -	$ 17,454
§ 46.3 (c) Existing	$ 2,574	$ 1,127	$ 222	$ 3,923	$ -	$ 3,923
§ 46.3 (c) New	$ 155	$ 101	$ 39	$ 295	$ -	$ 295
§ 46.3 (d) Existing	$ 4,570	$ 2,001	$ 394	$ 6,965	$ -	$ 6,965
§ 46.3 (d) New	$ 274	$ 180	$ 70	$ 524	$ -	$ 524
§ 46.3 (e) Existing	$ -	$ -	$ -	$ -	$ 7,130	$ 7,130
§ 46.3 (e) New	$ -	$ -	$ -	$ -	$ 536	$ 536
§ 46.3 (g) Existing	$ 1,287	$ 564	$ 111	$ 1,962	$ -	$ 1,962
§ 46.3 (g) New	$ 77	$ 51	$ 20	$ 148	$ -	$ 148
§ 46.3 (h) Existing	$ 2,466	$ 1,080	$ 213	$ 3,758	$ -	$ 3,758
§ 46.3 (h) New	$ 148	$ 97	$ 38	$ 283	$ -	$ 283
§ 46.3 (i) Existing	$ 4,570	$ 2,001	$ 394	$ 6,965	$ -	$ 6,965
§ 46.3 (i) New	$ 274	$ 180	$ 70	$ 524	$ -	$ 524
Total	$ 158,780	$ 71,467	$ 28,827	$ 259,074	$ 7,667	$ 266,741

*Source: Table IV-6, Table IV-7, Table IV-8, Table IV-9, Table IV-10, Table IV-11, Table IV-12, Table IV-13, Table IV-14, Table IV-15, Table IV-16, Table IV-17, Table IV-18, and Table IV-19.

§ 46.5 New Miner Training

Paragraph (a) of this section requires that each operator provide each new miner with at least 24 hours of training. Those miners who have not received the full 24 hours of new miner training must work under the close observation of an experienced miner. Paragraph (f) of this section exempts certain new

miners——those who have less than 12 months of surface mining or equivalent experience and have completed new miner training under this section or under § 48.25 within 36 months of beginning work——from having to repeat new miner training.

In order to determine the costs of new miner training under § 46.5, MSHA began by estimating the number of new employees hired each year in exempt mines currently not in compliance with existing part 48 training requirements. MSHA's estimates of the number of new employees each year for these mines, disaggregated by mine size and commodity classification, is presented in Table IV-21. These estimates reflect MSHA's estimates of the following annual hire rates for the various commodity classifications: sand and gravel mines, 40%; limestone mines and stone mines, 10%; and clay mines and colloidal phosphate mines, 5%.[25]

[25]These estimates are broadly consistent with comments on turnover rates MSHA received concerning the proposed rule.

Table IV-21: Number of New Employees in Mines Not Currently in Compliance with the Final Rule

Commodity	1-5 Employees		6-19 Employees		20+ Employees		Total	
	Mines [a]	Employees[b]	Mines [a]	Employees[b]	Mines [a]	Employees[b]	Mines [a]	Employees[b]
Sand & Gravel	2,597	2,851	775	2,993	58	744	3,430	6,587
Limestone [c]	320	103	400	464	139	790	859	1,358
Stone [d]	348	105	264	283	66	261	678	649
Clays [e]	96	15	27	13	22	85	145	113
Colloidal Phosphate	1	0	0	0	-	-	2	0
Total	3,361	3,074	1,467	3,754	285	1,880	5,113	8,708

[a] Number of mines = the number of mines not currently in compliance (from Table IV-5).

[b] Number of new employees = n X h, where n is the number of miners in mines that are not currently in compliance and h is hire rate (as a percentage of miners); h=40% for sand and gravel mines; h=10% for limestone mines and stone mines; and h=5% for clay mines and collodial phosphate mines.

[c] This category includes the following: crushed/broken and dimension limestone, hydraulic cement, and lime mines.

[d] This category includes the following: crushed/broken and dimension stone mines (stone, granite, marble, sandstone, slate, and taprock), as well as feldspar and shale mines.

[e] This category includes the following: ceramic and refractory mineral clay, common clay, and fire clay mines.

MSHA estimates that approximately 50 percent of newly-hired employees are new miners who have less than 12 months of surface mining or equivalent experience and have not previously completed new miner training within 36 months of starting work. (Thus, this estimate excludes those miners exempt from new miner training under paragraph (f) of § 46.5.) Table IV-22 provides MSHA's estimate of the number of miners—those in exempt mines currently not in compliance with existing part 48 training requirements—who

requirements——who annually qualify as new miners and would require new miner training under § 46.5 of the final rule.

Table IV-22: Number of New Employees Who Are New Miners and Require Training under § 46.5 of the Final Rule

	Mines with 1-5 Employees	Mines with 6-19 Employees	Mines with 20+ Employees	Total for All Mines
# of New Employees [a]	3,074	3,754	1,880	8,708
# of New Employees that Are Experienced Miners [b]	1,537	1,877	940	4,354
# of New Miners Requiring New Miner Training under § 46.5 [c]	1,537	1,877	940	4,354

[a] Source: Table IV-21.

[b] Number of new employees that are miners with at least some surface mining or equivalent experience = p = 50% X n, where n is the number of new employees.

[c] Number of new miners requiring new miner training under § 46.5 = n - p .

MSHA anticipates that new miners receive the majority of, but not all, new miner training on-site. For purposes of this final REA, MSHA assumes that, on average, new miners receive 16 hours of new miner training on-site and 8 hours of new miner training off-site.

The cost per miner for on-site new miner training is equal to the miner's hourly wage rate of $23 multiplied by the number

of hours of training received. The actual number of hours of on-site new miner training required, however, is only 13.44 hours per miner, rather than 16 hours per miner, because of two provisions in the final rule.

First, as provided in paragraph (c) of § 46.4, new miners would be permitted to substitute equivalent training required by the Occupational Safety and Health Administration (OSHA), or other federal or state agencies, to meet requirements under part 46, where appropriate. MSHA believes that training required by OSHA, or other federal or state agencies, could be appropriately substituted for new miner training as required under this section of the final rule. MSHA estimates that 20 percent of new miners would receive an average of 12 hours of training required by OSHA, or other federal or state agencies, that is equivalent to on-site new miner training.

Second, as provided in paragraph (e) of § 46.7, new task training may be credited toward new miner training, as appropriate. MSHA estimates that miners in the exempt industries receive, on average, 0.8 hours of new task training per year. Since new miner training must be completed within 90 days after a new miner begins work (as specified in paragraph (d) of § 46.5), MSHA estimates that only 20% of the 0.8 hours of annual new task training could properly be applied to on-site new miner

training.[26] On-site new miner training will impose other costs as well on exempt mines not currently in compliance with the final rule. MSHA estimates that, for each such mine, a mine supervisor giving the on-site new miner training will require 6 hours of preparation. In addition, that mine supervisor will provide 13.48 hours of on-site new miner training per session (where a session here refers to the complete package of on-site new miner training received by each new miner in a particular mine). The average number of sessions provided per mine is determined by the number of new miners annually per mine divided by the number of new miners trained per session. MSHA estimates that the number of new miners trained per session will be 1 for mines with 5 or fewer employees; 2 for mines with between 6 and 19 employees; and 4 for mines with 20 or more employees.

Table IV-23 provides MSHA's estimate of the cost of on-site new miner training borne by exempt mine operators to comply with § 46.5 of the final rule. As indicated in Table IV-23, these costs are a function of both the number of affected mines and the number of affected miners. Note that the affected mines include both exempt mines not currently in compliance with existing part 48 training requirements and exempt mines in which the mine operator is a construction contractor. The cost factors are identical for both types of exempt mines; however the number of

[26]The cost of annual new task training is provided in Table IV-28, Table IV-29, and Table IV-30.

miners per mine is generally different, which affects the cost per mine.

Table IV-23: Annual Cost of On-Site New Miner Training in Accordance with § 46.5 of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48							
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost Related to # of Mines	# of Miners [c]	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	3,361	$ 437	$ 1,469,692	1,537	$ 309	$ 475,124	$ 1,944,817
6-19	1,467	$ 526	$ 770,861	1,877	$ 309	$ 580,152	$ 1,351,013
20 or More	285	$ 615	$ 175,329	940	$ 309	$ 290,632	$ 465,961
Total	5,113		$ 2,415,882	4,354		$ 1,345,909	$ 3,761,791
Exempt Mines Currently in Compliance with Part 48							
Mine Size by Number of Employees	# of Mines [e]	Cost per Mine [b]	Total Cost Related to # of Mines	# of Miners [f]	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	12	$ 437	$ 5,334	6	$ 309	$ 1,725	$ 7,059
6-19	10	$ 507	$ 5,141	12	$ 309	$ 3,770	$ 8,911
20 or More	6	$ 559	$ 3,085	16	$ 309	$ 4,838	$ 7,923
Total	28		$ 13,560	33		$ 10,332	$ 23,893
All Exempt Mines							
Mine Size by Number of Employees	# of Mines	Cost per Mine [g]	Total Cost Related to # of Mines	# of Miners	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	3,373	$ 437	$ 1,475,027	1,543	$ 309	$ 476,849	$ 1,951,876
6-19	1,477	$ 525	$ 776,002	1,889	$ 309	$ 583,922	$ 1,359,924
20 or More	291	$ 614	$ 178,414	956	$ 309	$ 295,470	$ 473,884
Total	5,141		$ 2,429,443	4,387		$ 1,356,241	$ 3,785,684

[a] Number of mines = the number of mines not currently in compliance (from Table IV-5).

[b] Cost per mine = (6 X $36) + (13.44 X $36 X n/m X 1/r), where 6 is the number of hours of preparation for a supervisor to give on-site new miner training; $36 is the hourly wage rate for a M/NM mine supervisor; 13.44 is the number of hours of on-site new miner training per session; (n/m X 1/r) is the number of sessions of new miner training; n is the number of new miners in that mine size class; m is the number of mines in that size class; and r is the number of miners per session, where r=1 for mines with 1-5 employees; r=2 for mines with 6-19 employees; and r=4 for mines with 20 or more employees.

[c] The number of miners = the number of new miners requiring new miner training under § 46.5 (from Table IV-22).

[d] The cost per miner = (16 X $23) - (0.2 X 12 X $23) - (0.2 X 0.8 X $23), where 16 is the number of hours of on-site new miner training; $23 is the hourly wage rate for a M/NM miner; 0.2 is the fraction of miners receiving equivalent training from OSHA or other Federal or State agencies; 12 is the average number of hours of equivalent training received; 0.2 is the fraction of annual task training received within 60 days of hire; and 0.8 is the number of hours of annual task training received.

[e] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.1 X c X s, where 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine operators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

[f] The number of miners (the number of new construction workers requiring new miner training under § 46.5) = d X p X w, where d is the number of construction contractors defined as mine operators (derived above in this table); p is the number of new miners per mine for exempt mines not currently in compliance with part 48 (derived above in this table); and w is the ratio of miners per mine for construction operators to miners per mine for mines not currently in compliance with part 48 (from Table IV-3 and Table IV-5).

[g] Cost per mine = the weighted average for all exempt mines.

The cost per miner for off-site new miner training consists of the following: (1) the miner's hourly wage rate of $23 multiplied by the 8 hours of off-site new miner training received; (2) the off-site new miner training fee, which MSHA estimates (based on a composite of fees charged by private training consultants and free or subsidized rates for state grant training programs) would average $35 per miner; (3) $30 for per diem meal costs; (4) $30, on average, for transportation costs to and from the training site; and (5) $35, on average, for overnight lodgings (assuming half the new miners require one night of overnight lodgings at a cost of $70).

Table IV-24 provides MSHA's estimate of the cost of off-site new miner training borne by exempt mine operators to comply with § 46.5 of the final rule.

Table IV-24: Annual Cost of Off-Site New Miner Training in Accordance with § 46.5 of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48			
Mine Size by Number of Employees	# of Miners [a]	Cost per Miner [b]	Total Cost
1-5	1,537	$ 314	$ 482,625
6-19	1,877	$ 314	$ 589,311
20 or More	940	$ 314	$ 295,220
Total	4,354		$ 1,367,156
Exempt Mines Currently in Compliance with Part 48			
Mine Size by Number of Employees	# of Miners [c]	Cost per Miner [b]	Total Cost
1-5	6	$ 314	$ 1,752
6-19	12	$ 314	$ 3,829
20 or More	16	$ 314	$ 4,914
Total	33		$ 10,495
All Exempt Mines			
Mine Size by Number of Employees	# of Miners	Cost per Miner [b]	Total Cost
1-5	1,543	$ 314	$ 484,377
6-19	1,889	$ 314	$ 593,140
20 or More	956	$ 314	$ 300,134
Total	4,387		$ 1,377,652

[a] The number of miners = the number of miners requiring new miner training under § 46.5 (from Table IV-23).

[b] The cost per miner = (8 X$23) + $35 + $30 + $30 + (0.5 X$70), where 8 is the number of hours of off-site new miner training; $23 is the hourly wage rate for a M/NM miner; $35 is the average off-site new miner training fee; $30 is the per diem cost for meals; $30 is the average transportation cost to and from the training site; 0.5 is the fraction of miners requiring overnight lodgings for the off-site training; and $70 is the average cost of overnight lodgings.

Based on the sum of on-site and off-site new miner training costs, Table IV-25 summarizes MSHA's estimate of the yearly costs to comply with § 46.5 of the final rule.

Table IV-25: Summary of Yearly Costs to Comply with § 46.5 of the Final Rule *

	Mines with 1-5 Employees	Mines with 6-19 Employees	Mines with 20+ Employees	Total Cost
On-Site Training	$1,951,876	$1,359,924	$ 473,884	$ 3,785,684
Off-Site Training	$ 484,377	$ 593,140	$ 300,134	$ 1,377,652
Total	$2,436,253	$1,953,064	$ 774,018	$ 5,163,335

*Source: Table IV-23 and Table IV-24.

§ 46.6 Newly-Hired Experienced Miner Training

Paragraph (b) of this section requires each operator to provide each newly-hired experienced miner with training in the following seven areas before the miner begins work: an introduction to the work environment; instruction on the recognition and avoidance of hazards; a review of the mine's escape and emergency evacuation plans; instruction on the health and safety aspects of the tasks to be assigned; instruction on the statutory rights of miners; a review of the line of authority and responsibilities of supervisors and miners' representatives; and an introduction to rules and procedures for reporting hazards.

In order to determine the costs of newly-hired experienced miner training under § 46.6, MSHA began by estimating the number of experienced miners hired each year in exempt mines currently not in compliance with existing part 48 training requirements. MSHA estimates that half of the newly-hired employees are new miners and that the other half have at least some work experience. The newly-hired experienced miners include some miners, such as drillers or blasters, who are employees of independent contractors and who work at the mine on a short-term basis. Under paragraph (c) of § 46.11, these miners are required to receive site-specific hazard awareness training and therefore need not receive experienced miner training. MSHA estimates that 25 percent of the contractor workers who are designated as miners will be subject to paragraph (c) of § 46.11.

Of the remaining newly-hired miners with at least some work experience, MSHA estimates that 20 percent are experienced miners who return to the same mine, following an absence of 12 months or less. Under paragraph (f) of this section, these miners must receive training on any changes at the mine that would have occurred during their absence that could adversely affect their health or safety, as well as any annual refresher training the miners might have missed during their absence.

MSHA estimates that another 20 percent of the remaining newly-hired miners with at least some work experience are new

miners with less than 12 months of surface mining or equivalent experience who have completed new miner training under § 46.5 or under § 48.25 within 36 months before beginning work at the mine. These miners are covered under paragraph (f) of § 46.5, which provides that these miners receive training (specified in paragraph (b) of § 46.5) similar in content to that provided newly-hired experienced miners under paragraph (b) of § 46.6.

Table IV-26 presents MSHA's estimates of the number of miners who require training under the various provisions of § 46.6 of the final rule.

Table IV-26: Number of Newly-Hired Experienced Miners Who Require Training under § 46.6 of the Final Rule

	Mines with 1-5 Employees	Mines with 6-19 Employees	Mines with 20+ Employees	Total for All Mines
# of New Employees[a]	3,074	3,754	1,880	8,708
# of New Employees with at Least Some Experience[b]	1,537	1,877	940	4,354
# of Contractor Workers Who Are Exempt under § 46.11 (c) [c]	21	20	10	51
# of Newly-Hired Experienced Miners Requiring Training under §46.6 [d]	1,516	1,856	930	4,303
# of Experienced Miners Requiring Training under §46.6 (b) [e]	910	1,114	558	2,582
# of Experienced Miners Covered under § 46.6 (f) [f]	303	371	186	861
# of Experienced Miners Covered under § 46.5 (f) [g]	303	371	186	861

[a] Source: Table IV-22.

[b] Number of new employees with at least some experience = e = n - v, where n is the number of new employees and v is the number of new employees that are new miners (from Table IV-22).

[c] The number of contractor workers who are exempted under § 46.11 (c) = c= w X y X n/k X 0.5 X 0.25, where w is the number of contractor workers designated as miners (from Table IV-3); y is the proportion of miners not currently in compliance (from Table IV-5); n/k is the hire rate where n is the number of new employees and k is the number of miners not currently in compliance (from Table IV-5); 0.5 is the proportion of new employees who are not new miners; and 0.25 is the proportion of contractor workers who are short-term, specialized extraction or production workers covered under § 46.11 (c).

[d] The number of newly-hired experienced miners requiring training under § 46.6 = b = e -c.

[e] The number of experienced miners requiring training under § 46.6 (a) = 60% X b.

[f] The number of experienced miners covered under § 46.6 (f) = 20% X b.

[g] The number of miners with at least some experience covered under § 46.5 (f) = 20% X b.

The cost per miner for newly-hired experienced miner training is equal to the miner's hourly wage rate of $23 multiplied by the number of hours of training received. MSHA estimates that those miners covered under paragraph (a) of § 46.6 will require 4 hours of training; those miners covered under paragraph (f) of § 46.5 will require 4 hours of training;[27] and those miners covered under paragraph (f) of § 46.6 will require 1 hour of training to comply with these respective provisions.[28]

Newly-hired experienced miner training will impose other costs as well on exempt mines not currently in compliance with the final rule. MSHA estimates that, for each such mine, a mine supervisor giving newly-hired experienced miner training will require 1 hour of preparation. In addition, that mine supervisor will provide a weighted average of 3 hours of newly-hired experienced miner training per session (where a session here refers to the complete package of experienced miner training received by newly-hired experienced miners in a particular mine). The average number of sessions provided per mine is determined by

[27]In the proposed rule, there was no minimum number of hours of required training for miners covered under paragraph (f) of § 46.5. In the preliminary regulatory economic analysis (PREA) in support of the proposed rule, MSHA estimated that these miners would need only 2 hours of training. However, the final rule requires a minimum of 4 hours of training for miners covered under paragraph (f) of § 46.5, and MSHA has modified its estimate to equal this requirement.

[28]MSHA anticipates that only 1 hour of training will be required for those miners covered under paragraph (f) of § 46.6 because an experienced miner returning to the same mine after an absence of less than 12 months—typically the absence is only a couple of months— would require training only on (1) changes at the mine during the miner's absence that could affect health and safety, and (2) any part of annual refresher training under § 46.8 missed during the miner's absence.

the number of experienced miners hired annually per mine divided by the number of newly-hired experienced miners trained per session. MSHA estimates that the number of newly-hired experienced miners trained per session will be 1 for mines with 5 or fewer employees; 2 for mines with between 6 and 19 employees; and 4 for mines with 20 or more employees.

Table IV-27 presents MSHA's estimate of the cost of newly-hired experienced miner training borne by exempt mine operators to comply with § 46.6 (and paragraph (f) of § 46.5) of the final rule. Note that the affected mines include both exempt mines in which the mine operator is a construction contractor as well as exempt mines not currently in compliance with existing part 48 training requirements. The cost factors are identical for both types of exempt mines; however the number of miners per mine is generally different, which affects the cost per mine.

Table IV-27: Annual Cost of Newly-Hired Experienced Miner Training under § 46.6 of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48							
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost Related to # of Mines	# of Miners [c]	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	3,361	$ 91	$ 306,574	1,516	$ 78	$ 118,559	$ 425,133
6-19	1,467	$ 113	$ 166,414	1,856	$ 78	$ 145,167	$ 311,581
20 or More	285	$ 136	$ 38,739	930	$ 78	$ 72,760	$ 111,499
Total	5,113		$ 511,726	4,303		$ 336,486	$ 848,213
Exempt Mines Currently in Compliance with Part 48							
Mine Size by Number of Employees	# of Mines [e]	Cost per Mine [b]	Total Cost Related to # of Mines	# of Miners [f]	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	12	$ 91	$ 1,113	6	$ 78	$ 430	$ 1,543
6-19	10	$ 109	$ 1,103	12	$ 78	$ 943	$ 2,047
20 or More	6	$ 122	$ 673	15	$ 78	$ 1,211	$ 1,884
Total	28		$ 2,889	33		$ 2,585	$ 5,473
All Exempt Mines							
Mine Size by Number of Employees	# of Mines	Cost per Mine [g]	Total Cost Related to # of Mines	# of Miners	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	3,373	$ 91	$ 307,687	1,522	$ 78	$ 118,989	$ 426,676
6-19	1,477	$ 113	$ 167,517	1,868	$ 78	$ 146,111	$ 313,628
20 or More	291	$ 136	$ 39,411	946	$ 78	$ 73,971	$ 113,382
Total	5,141		$ 514,615	4,336		$ 339,071	$ 853,686

[a] Source: Table IV-5.

[b] Cost per mine = (1 X $36) + ($36 X (0.6 X 4 + 0.2 X 4 + 0.2 X 1) X (n/m X 1/r)), where 1 is the number of hours of preparation for a supervisor to give experienced miner training; $36 is the hourly wage rate for a M/NM mine supervisor; (0.6 X 4 + 0.2 X 4 + 0.2 X 1) is the number of hours of experienced miner training given by the supervisor per (composite) session, where 4 is the number of hours of experienced miner training under § 46.6 (a) ; 0.6 is the fraction of experienced miners covered under § 46.6 (a) ; 4 is the number of hours of experienced miner training under § 46.5 (f); 0.2 is the fraction of miners with at least some experience receiving training under § 46.5 (f); 1 is the number of hours of experienced miner training under § 46.6 (f); and 0.2 is the fraction of experienced miners covered under § 46.6 (f); and (n/m X 1/r) is the number of (composite) sessions of experienced miner training, where n is the number of experienced miners in that mine size class, m is the number of mines in that size class, and r is the number of miners per session, where r=1 for mines with 1-5 employees; r=2 for mines with 6-19 employees; and r=4 for mines with 20 or more employees.

[c] The number of miners = the number of newly-hired experienced miners requiring training under § 46.6 (from Table IV-26).

[d] Cost per miner = $23 X (0.6 X 4 + 0.2 X 4 + 0.2 X 1), where $23 is the hourly wage rate for a M/NM miner; 4 is the number of hours of experienced miner training under § 46.6 (a); 0.6 is the fraction of experienced miners covered under § 46.6 (a); 4 is the number of hours of experienced miner training under § 46.5 (f); 0.2 is the fraction of miners with at least some experience receiving training under § 46.5 (f); 1 is the number of hours of experienced miner training under § 46.6 (f); and 0.2 is the fraction of experienced miners covered under § 46.6 (f).

[e] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.1 X c X s, where 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine operators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

[f] The number of miners (the number of new construction workers requiring experienced miner training under § 46.6) = d X p X w, where d is the number of construction contractors defined as mine operators (derived above in this table); p is the number of experienced miners per mine for exempt mines not currently in compliance with part 48 (derived above in this table); and w is the ratio of miners per mine for construction operators to miners per mine for mines not currently in compliance with part 48 (from Table IV-3 and Table IV-5).

[g] Cost per mine = the weighted average for all exempt mines.

§ 46.7 New Task Training

Under this section, the operator must train a miner in (1) the safety and health aspects and safe work procedures specific to a new regularly-assigned or one-time task for which a miner has no previous experience and (2) any changes that have occurred in a miner's regularly-assigned task. As explained below, different mines will be affected by these requirements, depending upon whether the task is a regular assignment or a one-time assignment.

MSHA expects that regularly-assigned tasks covered under this section will apply to all miners, except the supervisor giving the task training (who presumably has relevant experience or, in some prior year, received training to perform the task in a safe and healthful manner), in all exempt mines currently not in compliance with existing part 48 training requirements and in all exempt mines in which the mine operator is a construction contractor. The cost per miner is equal to the miner's hourly wage rate of $23 multiplied by the number of hours of task training received. MSHA estimates that each miner will be given, on average, three new or significantly-changed regularly-assigned tasks each year. The duration of each task training could vary substantially, depending on the task. For example, some task training could last 2 minutes or less (for instance, showing a miner how to shovel safely along a moving conveyor belt) while

others could last 20 minutes or more (for instance, instructing a miner about hearing protection, respiratory protection, and avoiding acute hazards when working near an operating crusher). MSHA estimates that, on average, each task training, as required under § 46.7, will last approximately 0.2 hours.

Regularly-assigned task training will impose other costs as well on exempt mines not currently in compliance with the final rule. MSHA estimates that, for each such mine, a mine supervisor giving task training will require 0.25 hours of preparation. In addition, the mine supervisor will provide 0.6 hours of new task training per session (where a session here refers to the complete package of new task training received annually by miners in a particular mine). The average number of sessions provided per mine is determined by the number of miners receiving task training per mine divided by the number of miners trained per session. MSHA anticipates that task training will usually be one-on-one between a supervisor and a miner, but that occasionally the supervisor will give task training to two or three miners at once, as appropriate. MSHA estimates that the number of miners trained per session will average 1.2 regardless of mine size.

Table IV-28 provides MSHA's estimate of the cost of regularly-assigned task training borne by exempt mine operators to comply with § 46.7 of the final rule.

Table IV-28: Annual Cost of New Regularly-Assigned Task Training in Accordance with § 46.7 of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48							
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost Related to # of Mines	# of Miners [c]	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	3,361	$ 42	$ 140,929	6,149	$ 14	$ 84,853	$ 225,783
6-19	1,467	$ 178	$ 260,838	13,758	$ 14	$ 189,855	$ 450,693
20 or More	285	$ 880	$ 250,848	13,793	$ 14	$ 190,349	$ 441,197
Total	5,113		$ 652,615	33,700		$ 465,057	$1,117,672
Exempt Mines Currently in Compliance with Part 48							
Mine Size by Number of Employees	# of Mines [e]	Cost per Mine [b]	Total Cost Related to # of Mines	# of Miners [f]	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	12	$ 42	$ 512	22	$ 14	$ 308	$ 820
6-19	10	$ 167	$ 1,698	89	$ 14	$ 1,232	$ 2,930
20 or More	6	$ 753	$ 4,158	228	$ 14	$ 3,150	$ 7,308
Total	28		$ 6,368	340		$ 4,690	$ 11,058
All Exempt Mines							
Mine Size by Number of Employees	# of Mines	Cost per Mine [g]	Total Cost Related to # of Mines	# of Miners	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	3,373	$ 42	$ 141,441	6,171	$ 14	$ 85,161	$ 226,602
6-19	1,477	$ 178	$ 262,536	13,847	$ 14	$ 191,087	$ 453,623
20 or More	291	$ 877	$ 255,006	14,022	$ 14	$ 193,499	$ 448,505
Total	5,141		$ 658,983	34,040		$ 469,747	$1,128,730

[a] Source: Table IV-5.

[b] Cost per mine = (0.25 X $36) + (0.6 X $36 X n/m X 1/1.2), where 0.25 is the number of hours of preparation for a supervisor to give task training; $36 is the hourly wage rate for a M/NM mine supervisor; 0.6 is the number of hours of task training per (composite) session given by the supervisor annually; (n/m X 1/1.2) is the number of sessions of task training; n is the number of miners in that mine size class, m is the number of mines in that size class, and 1.2 is the average number of miners per session.

[c] The number of miners = n - (m X 1), where n is the number of miners in mines not currently in compliance (from Table IV-5); m is the number of mines not currently in compliance (Table IV-5); and 1 is the number of supervisors per mine giving training.

[d] Cost per miner = 0.6 X $23, where 0.6 is the number of hours of task training annually and $23 is the hourly wage rate for a M/NM miner.

[e] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.1 X c X s, where 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine operators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

[f] Number of miners = (0.1 X k X s) - (c X 1), where 0.1 is the proportion of independent contractor workers designated as miners that are construction workers; k is the number of contractor workers working for mine operators that are not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); s is the proportion of mine operators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers); c is the number of construction contractors defined as mine operators (derived above in this table); and 1 is the number of supervisors per mine giving training.

[g] Cost per mine = the weighted average for all exempt mines.

Under § 46.7 of the final rule, the mine operator must also provide task training when a miner is reassigned to a task in which the miner has no previous experience. Existing part 48 training requirements only apply to regularly-assigned tasks and consequently would not provide for task training for the one-time assignment of tasks, such as emergency repairs.

MSHA therefore expects that one-time task assignments covered under this section will apply to all exempt mines and to all miners, except the supervisor giving the task training (who presumably has relevant experience or, in some prior year, received training to perform the task in a safe and healthful manner). MSHA estimates that each miner will be given, on average, training for one new one-time task assignment each year. MSHA estimates that, on average, each task training for a one-time task assignment, as required under § 46.7, will last approximately 0.2 hours. As before, the cost per miner is equal to the miner's hourly wage rate of $23 multiplied by the number of hours of task training received.

Task training for one-time task assignments will impose other costs as well on exempt mines. MSHA estimates that, for each such mine, a mine supervisor giving task training will require 0.08 hours of preparation. In addition, the mine supervisor will provide 0.2 hours of new task training per session (where a session here refers to the complete package of

new task training received annually by miners in a particular mine). MSHA anticipates that task training for one-time task assignments will usually be one-on-one between a supervisor and a miner, but that occasionally the supervisor will give task training to two or three miners at once, as appropriate. As was the case for regularly-assigned task training, MSHA estimates that the number of miners trained per session for one-time task assignments will average 1.2 regardless of mine size.

Table IV-29 provides MSHA's estimate of the cost of regularly-assigned task training borne by all exempt mine operators to comply with § 46.7 of the final rule.

Table IV-29: Annual Cost of New One-Time Task Training in Accordance with § 46.7 of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48							
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost Related to # of Mines	# of Miners [c]	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	3,361	$ 14	$ 46,573	6,149	$ 5	$ 28,284	$ 74,858
6-19	1,467	$ 59	$ 86,770	13,758	$ 5	$ 63,285	$ 150,055
20 or More	285	$ 293	$ 83,582	13,793	$ 5	$ 63,450	$ 147,031
Total	5,113		$ 216,925	33,700		$ 155,019	$ 371,944
Exempt Mines Currently in Compliance with Part 48							
Mine Size by Number of Employees	# of Mines [e]	Cost per Mine [b]	Total Cost Related to # of Mines	# of Miners [f]	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	2,241	$ 14	$ 31,049	4,099	$ 5	$ 18,856	$ 49,905
6-19	2,200	$ 59	$ 130,155	20,636	$ 5	$ 94,927	$ 225,082
20 or More	1,141	$ 293	$ 334,327	55,174	$ 5	$ 253,799	$ 588,126
Total	5,582		$ 495,531	79,909		$ 367,582	$ 863,113
All Exempt Mines							
Mine Size by Number of Employees	# of Mines	Cost per Mine [g]	Total Cost Related to # of Mines	# of Miners	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	5,602	$ 14	$ 77,622	10,248	$ 5	$ 47,141	$ 124,763
6-19	3,667	$ 59	$ 216,925	34,394	$ 5	$ 158,212	$ 375,137
20 or More	1,426	$ 293	$ 417,909	68,967	$ 5	$ 317,248	$ 735,157
Total	10,695		$ 712,456	113,609		$ 522,601	$1,235,057

[a] Source: Table IV-5.

[b] Cost per mine = (0.08 X $36) + (0.2 X $36 X n/m X 1/1.2), where 0.08 is the number of hours of preparation for a supervisor to give task training; $36 is the hourly wage rate for a M/NM mine supervisor; 0.2 is the number of hours of task training per (composite) session given by the supervisor annually; (n/m X 1/1.2) is the number of sessions of task training; n is the number of miners in that mine size class, m is the number of mines in that size class, and 1.2 is the average number of miners per session.

[c] The number of miners = n - (m X 1), where n is the number of miners in mines not currently in compliance (from Table IV-5); m is the number of mines not currently in compliance (Table IV-5); and 1 is the number supervisors per mine giving training.

[d] Cost per miner = 0.2 X $23, where 0.2 is the number of hours of task training annually and $23 is the hourly wage rate for a M/NM miner.

[e] Number of mines = p, where p is the number of mines currently in compliance with part 48 (from Table IV-4 and Table IV-5).

[f] Number of miners = p - (q X 1), where p is the number of miners in mines currently in compliance with part 48 (from Table IV-4 and Table IV-5); q is the number of miners currently in compliance with part 48 (Table IV-5); and 1 is the number supervisors per mine giving training.

[g] Cost per mine = the weighted average for all exempt mines.

Table IV-30 provides MSHA's estimate of the annual costs of new task training, both for regular task assignments and for one-time task assignments, borne by exempt mine operators to comply with § 46.7 of the final rule.

Table IV-30: Summary of Yearly Costs of New Task Training to Comply with § 46.7 of the Final Rule *

	Mines with 1-5 Employees	Mines with 6-19 Employees	Mines with 20+ Employees	Total Cost
Regularly-Assigned	$ 226,602	$ 453,623	$ 448,505	$ 1,128,730
One-Time	$ 124,763	$ 375,137	$ 735,157	$ 1,235,057
Total	$ 351,365	$ 828,761	$ 1,183,662	$ 2,363,787

*Source: Table IV-28 and Table IV-29.

§ 46.8 Annual Refresher Training

At least once every 12 months, each mine operator must provide each miner with no less than 8 hours of refresher training.

MSHA expects that this section will apply to all miners, except the supervisor giving the annual refresher training,[29] in all exempt mines currently not in compliance with existing part 48 training requirements and in all exempt mines in which the mine operator is a construction contractor. The cost per miner

[29]By policy, the supervisor preparing for and giving the annual refresher training is considered to have received the annual refresher training.

is equal to the miner's hourly wage rate of $23 multiplied by the 8 hours of annual refresher training received.

Annual refresher training will impose other costs as well on affected exempt mines. MSHA estimates that, for each such mine, a mine supervisor giving the annual refresher training will require 3 hours of preparation. In addition, that mine supervisor will provide 8 hours of annual refresher training per session (where a session here refers to the complete package of refresher training received annually by each miner in a particular mine). The average number of sessions provided per mine is determined by the number of miners per mine receiving refresher training annually divided by the number of miners trained per session. MSHA anticipates that, in most cases, in mines with fewer than 20 employees, the miners will receive annual refresher training together in one session and that, in mines with 20 or more employees, two sessions of refresher training will be provided annually. Accordingly, MSHA estimates that, on average, the number of miners trained per session will be 2 for mines with 5 or fewer employees; 10 for mines with between 6 and 19 employees; and 24 for mines with 20 or more employees.

Table IV-31 provides MSHA's estimate of the cost of annual refresher training borne by affected exempt mine operators to comply with § 46.8 of the final rule.

Table IV-31: Cost of Annual Refresher Training (to Currently Non-Compliant Mines) in Accordance with § 46.8 of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48							
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost Related to # of Mines	# of Miners [c]	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	3,361	$ 371	$ 1,248,437	6,149	$ 184	$1,131,379	$2,379,816
6-19	1,467	$ 378	$ 554,633	13,758	$ 184	$2,531,398	$3,086,032
20 or More	285	$ 688	$ 196,322	13,793	$ 184	$2,537,986	$2,734,308
Total	5,113		$ 1,999,392	33,700		$6,200,763	$8,200,156
Exempt Mines Currently in Compliance with Part 48							
Mine Size by Number of Employees	# of Mines [e]	Cost per Mine [b]	Total Cost Related to # of Mines	# of Miners [f]	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	12	$ 371	$ 4,532	22	$ 184	$ 4,107	$ 8,639
6-19	10	$ 362	$ 3,666	89	$ 184	$ 16,428	$ 20,094
20 or More	6	$ 604	$ 3,335	228	$ 184	$ 41,996	$ 45,331
Total	28		$ 11,533	340		$ 62,531	$ 74,064
All Exempt Mines							
Mine Size by Number of Employees	# of Mines	Cost per Mine [g]	Total Cost Related to # of Mines	# of Miners	Cost per Miner [d]	Total Cost Related to # of Miners	Total Cost
1-5	3,373	$ 371	$ 1,252,968	6,171	$ 184	$1,135,486	$2,388,455
6-19	1,477	$ 378	$ 558,300	13,847	$ 184	$2,547,826	$3,106,126
20 or More	291	$ 687	$ 199,657	14,022	$ 184	$2,579,982	$2,779,639
Total	5,141		$ 2,010,926	34,040		$6,263,294	$8,274,219

[a] Source: Table IV-5.

[b] Cost per mine = (3 X $36) + (8 X $36X n/m X 1/s), where 3 is the number of hours of preparation for a supervisor to give refresher training; $36 is the hourly wage rate for a mine supervisor; 8 is the number of hours of refresher training per session given annually by the supervisor; and (n/m X 1/s) is the number of sessions of refresher training, where n is the number of miners in that size class, m is the number of mines in that size class, and s is the average number of miners per session, where s = 2 for mines with 1-5 employees, s = 10 for mines with 6-19 employees, and s = 24 for mines with 20 or more employees.

[c] Number of miners = n - (m X 1), where n is the number of miners in mines not currently in compliance with part 48 (from table IV-5); m is the number of mines not currently in compliance with part 48 (from Table IV-5); and 1 is the number of supervisors per mine giving annual refresher training.

[d] Cost per miner = 8 X $23, where 8 is the number of hours of annual refresher training received and $23 is the hourly wage rate for a miner.

[e] Number of mines = the number of construction contractors (for whom existing part 48 requirements do not apply) = 0.1 X c X s, where 0.1 is the proportion of independent contractors designated as mine operators that are construction contractors; c is the number of mines not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); and s is the proportion of mine operators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers).

[f] Number of miners = (0.1 X k X s) - (c X 1), where 0.1 is the proportion of independent contractor workers designated as miners that are construction workers; k is the number of contractor workers working for mine operators that are not out of compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5); s is the proportion of mine operators in that size class not out of compliance with part 48 (s = 0.4 for mines with 5 or fewer workers, s = 0.6 for mines with 6-19 workers, and s = 0.8 for mines with 20 or more workers); c is the number of construction contractors defined as mine operators (derived above in this table); and 1 is the number of supervisors per mine giving training.

[g] Cost per mine = the weighted average for all exempt mines.

MSHA believes that, as a result of the final rule, some exempt operations currently in compliance with existing part 48 training requirements will enjoy savings in the resources they devote to the combination of short employee safety meetings (lasting less than 30 minutes) and annual refresher training. Under the existing part 48 rule, short employee safety meetings may not be credited toward training requirements. Under paragraph (e) of § 46.4, however, all documented employee safety meetings, regardless of duration, may be credited toward training requirements. MSHA believes that some operations will take advantage of this option by crediting short-term employee safety meetings toward annual refresher training.

MSHA estimates that approximately 30 percent of the exempt mines currently in compliance with existing part 48 training requirements hold short employee safety meetings. Of that total, MSHA anticipates that half will choose to credit short employee safety meetings toward annual refresher training and reduce the other forms of annual refresher training accordingly. (The other half, MSHA expects, will find their current level of training to be worthwhile and effective and will not reduce it in response to the final rule.)

MSHA estimates that mines that hold short employee safety meetings devote approximately 6 hours annually to them. Therefore, each exempt, currently-compliant mine that chooses to

take advantage of paragraph (e) of § 46.4 will derive savings—— equal to 6 hours of time (valued at the miner's hourly wage rate) currently devoted to other types of annual refresher training——for each of its miners (except the supervisor giving the annual refresher training).

These mines will derive other savings as well. MSHA estimates that, for each such mine, a mine supervisor giving the annual refresher training will be able to eliminate 2.25 hours of training preparation. In addition, that mine supervisor will provide 6 fewer hours of annual refresher training per session (relative to current levels of annual refresher training, net of short employee safety meetings provided under existing part 48 training requirements).

Table IV-32 provides MSHA's estimate of the savings accruing to exempt mine operators currently in compliance with existing part 48 training requirements, in accordance with § 46.8 (and paragraph (e) of § 46.4) of the final rule.

Table IV-32: Savings to Mines Currently in Compliance with Part 48 Requirements Applied to Annual Refresher Training in Accordance with § 46.8 of the Final Rule*

Mine Size by Number of Employees	# of Mines [a]	Savings per Mine [b]	Total Savings Related to # of Mines	# of Miners [c]	Savings per Miner [d]	Total Savings Related to # of Miners	Total Savings
1-5	336	$ 370	$ 124,489	901	$ 138	$ 124,280	$ 248,769
6-19	330	$ 302	$ 99,654	3,376	$ 138	$ 465,886	$ 565,540
20 or More	171	$ 524	$ 89,654	8,421	$ 138	$1,162,166	$1,251,820
Total	837		$ 313,796	12,698		$1,752,332	$2,066,129

* Savings to mine currently in compliance arise from the removal in § 46.4(e) of restriction in part 48 training requirements on application of short safety meetings (lasting less than 30 minutes) to training requirements. Savings applied to annual refresher training under § 46.8 of the final rule.

[a] Number of mines = m = (b - d) X 0.3 X 0.5, where m is the number of exempted mines currently in compliance with part 48 training requirements; b is the number of exempted mines covered by the final rule (from Table IV-4); d is the number of exempted mines currently not in compliance (from Table IV-5); 0.3 is the fraction of currently compliant mines that hold short safety meetings; and 0.5 is the fraction of those mines that would reduce refresher training hours in response to § 46.4(e).

[b] Savings per mine = (2.25 X $36) + (6 X $36 X n/m X 1/s), where 2.25 is the number of hours of preparation for a supervisor to give 6 hours of refresher training; $36 is the hourly wage rate for a mine supervisor; 6 is the reduction in the number of hours of refresher training per session given annually by the supervisor; and (n/m X 1/s) is the number of sessions of refresher training, where n is the number of miners in that size class, m is the number of mines in that size class, and s is the average number of miners per session, where s = 2 for mines with 1-5 employees, s = 10 for mines with 6-19 employees, and s = 24 for mines with 20 or more employees.

[c] Number of miners = ((n - h) - (m X 1)) X 0.3 X 0.5, where n is the number of miners covered by the final rule (from Table IV-4); h is the number of miners not currently in compliance with part 48 (from Table IV-5); m is the number of exempted mines currently in compliance with part 48; 1 is the number supervisors per mine giving annual refresher training; 0.3 is the fraction of currently compliant mines that hold short safety meetings; and 0.5 is the fraction of those mines that would reduce refresher training hours in response to § 46.4(e).

[d] Savings per miner = 6 X $23, where 6 is the reduction in the number of hours of annual refresher training received and $23 is the hourly wage rate for a miner.

Table IV-33: Summary of Net Cost of Annual Refresher Training Associated with § 46.8 of the Final Rule *

	Mines with 1-5 Employees	Mines with 6-19 Employees	Mines with 20+ Employees	Total Cost
Cost	$2,388,455	$3,106,126	$ 2,779,639	$ 8,274,219
Savings	$ 248,769	$ 565,540	$ 1,251,820	$ 2,066,129
Net Cost	$2,139,686	$2,540,586	$ 1,527,819	$ 6,208,091

*Source: Table IV-31 and Table IV-32.

§ 46.9 Records of Training

Under this section, upon completion of each training program, the operator must record and certify that each miner has completed the training. The operator must provide a copy of the training certificate to each miner at the completion of each training program; in addition, when the miner leaves the operator's employ, the operator must provide a copy of the miner's training records and certificates, upon request. The operator must also make available a copy of each miner's training records and certificates for inspection by MSHA and for examination by miners and their representatives.

Table IV-34 shows the number of completed miner training programs under §§ 46.5, 46.6, 46.7, and 46.8, summed for all miners working in exempt mines. MSHA estimates that each miner requires, on average, new task training for 4 new or

significantly-changed tasks (including both regular and one-time task assignments) annually. Under § 46.9(d)(3) of the final rule, new task training records need be certified, and a copy provided to the miner, only once every 12 months or upon request by the miner. Accordingly, MSHA will treat the annual task training (on average, 4 new or significantly-changed tasks) as a single program under this section. MSHA assumes that exempt mines currently in compliance with existing part 48 training requirements (excluding construction contractors) are already annually recording and certifying new task training and will be able to include one-time assignments as part of the annual task training program at no additional cost. Employee safety meetings may contribute to the various training programs and be recorded as such, but they have no recordkeeping requirements as a separate training program, under this section.

Table IV-34: Number of Completed Miner Training Programs Annually*

Exempt Mines Currently Not in Compliance with Part 48				
Requirement/ Provision	Mines with 1-5 Employees	Mines with 6-19 Employees	Mines with 20+ Employees	Total for All Mines
§ 46.5	1,537	1,877	940	4,354
§ 46.6	1,516	1,856	930	4,303
§ 46.7 [a]	6,149	13,758	13,793	33,700
§ 46.8	6,149	13,758	13,793	33,700
Total	15,351	31,248	29,457	76,056
Exempt Mines Currently in Compliance with Part 48				
Requirement/ Provision	Mines with 1-5 Employees	Mines with 6-19 Employees	Mines with 20+ Employees	Total for All Mines
§ 46.5	6	12	16	33
§ 46.6	6	12	15	33
§ 46.7 [a]	22	89	228	340
§ 46.8	22	89	228	340
Total	56	203	488	746
All Exempt Mines				
Requirement/ Provision	Mines with 1-5 Employees	Mines with 6-19 Employees	Mines with 20+ Employees	Total for All Mines
§ 46.5	1,543	1,889	956	4,387
§ 46.6	1,522	1,868	946	4,336
§ 46.7	6,171	13,847	14,022	34,040
§ 46.8	6,171	13,847	14,022	34,040
Total	15,406	31,451	29,945	76,803

*Source: Table IV-23, Table IV-27, Table IV-28, Table IV-29, and Table IV-31.

[a] Each miner is assumed to require training for 4 new or significantly-changed tasks annually. Training for the four new tasks annually counts as a single training program. Exempt mines currently in compliance with part 48 (excluding construction contractors) are assumed to report regularly-assigned new tasks currently, and new one-time task would already be counted as part of the new task training program.

For each completed training program for each miner, MSHA estimates that the recordkeeping costs under this section will be 0.05 hours for a supervisor to record and certify completion of the training program; 0.05 hours for a clerical worker to copy and distribute the certificate twice and file the form; and $0.30 in photocopying expense for two copies of the certificate.

Table IV-35 summarizes MSHA's estimate of the annual cost of recordkeeping in accordance with § 46.9 of the final rule.

Table IV-35: Annual Cost of Recordkeeping in Accordance with § 46.9 of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48			
Mine Size by Number of Employees	# of Completed Mining Training Programs [a]	Recordkeeping Cost per Completed Miner Training Program [b]	Total Cost
1-5	15,351	$ 2.95	$ 45,285
6-19	31,248	$ 2.95	$ 92,183
20 or More	29,457	$ 2.95	$ 86,899
Total	76,056		$ 224,367
Exempt Mines Currently in Compliance with Part 48			
Mine Size by Number of Employees	# of Completed Mining Training Programs [a]	Recordkeeping Cost per Completed Miner Training Program [b]	Total Cost
1-5	56	$ 2.95	$ 164
6-19	203	$ 2.95	$ 598
20 or More	488	$ 2.95	$ 1,438
Total	746		$ 2,201
All Exempt Mines			
Mine Size by Number of Employees	# of Completed Mining Training Programs	Recordkeeping Cost per Completed Miner Training Program [b]	Total Cost
1-5	15,406	$ 2.95	$ 45,449
6-19	31,451	$ 2.95	$ 92,781
20 or More	29,945	$ 2.95	$ 88,338
Total	76,803		$ 226,568

[a] Source: Table IV-34.

[b] Recordkeeping cost per completed miner training program = (0.05 X $36) + (0.05 X $17) + (2 X 1 X $0.15), where 0.05 is the number of hours required for a supervisor to record and certify completion of a training program for each miner; $36 is the hourly wage rate for M/NM mine supervisor; 0.05 is the number of hours required for a clerical worker to copy and distribute the certificate (twice) and file the form and certificate; $17 is the hourly wage rate for a clerical worker; 2 is the number of copies made of the certificate; 1 is the number of pages per certificate; and $0.15 is the cost per page for photocopying.

§ 46.11 Hazard Awareness Training

Under this section, each mine operator must provide site-specific hazard awareness training to any person who is not one of its miners as defined under § 46.2 of this part. The group includes office or staff personnel; scientific workers; delivery workers and customers; construction workers or employees of independent contractors who are not miners; maintenance or service workers who do not work at the mine site for frequent or extended periods; and outside vendors or visitors. In addition, each mine operator must provide site-specific hazard awareness training to miners, such as drillers or blasters, who move from one mine to another while remaining employed by the same production-operator or independent contractor. Hazard awareness training is not required for any person who is accompanied at all times by an experienced miner who is familiar with hazards specific to the mine site.

MSHA estimates that the number of persons (including non-miners as well as miners lacking newly-hired experienced miner training) required to receive hazard awareness training annually under this section will be 50 persons for mines with fewer than five employees; 100 persons for mines with between 6 and 19 employees; and 200 persons for mines with 20 or more employees. MSHA assumes that most mines will have a miner provide hazard awareness training one-on-one to each person. The cost per mine,

for each mine not currently in compliance with existing part 48 training requirements and for each mine in which the mine operator is a construction contractor, will be 0.15 hours for a miner to provide hazard awareness training (valued in terms of the miner's hourly wage rate) multiplied by the number of persons receiving hazard awareness training at that mine.

Other parties——the employers of the persons receiving the hazard awareness training——will also incur costs related to § 46.11 of the final rule. Their costs per mine will be 0.15 hours for a person to receive hazard awareness training (valued in terms of that person's hourly wage rate) multiplied by the number of persons receiving hazard awareness training at that mine. MSHA estimates that the persons receiving hazard awareness training would have an hourly wage rate comparable to a miner's.

Table IV-36 provides MSHA's estimate of the cost of annual hazard awareness training borne by affected exempt mine operators (including both those not currently in compliance with existing part 48 training requirements and those which are construction contractors) and by other parties to comply with § 46.11 of the final rule.

Table IV-36: Annual Cost of Hazard Awareness Training in Accordance with § 46.11 of the Final I

Exempt Mines Currently Not in Compliance with Part 48						
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost for Mines	Other Party Costs Per Mine [c]	Total Cost for Other Parties	Total Cost
1-5	3,361	$ 173	$ 579,807	$ 173	$ 579,807	$ 1,159,614
6-19	1,467	$ 345	$ 506,046	$ 345	$ 506,046	$ 1,012,092
20 or More	285	$ 690	$ 196,788	$ 690	$ 196,788	$ 393,576
Total	5,113		$1,282,641		$1,282,641	$ 2,565,282
Exempt Mines Currently in Compliance with Part 48						
Mine Size by Number of Employees	# of Mines [d]	Cost per Mine [b]	Total Cost for Mines	Other Party Costs Per Mine [c]	Total Cost for Other Parties	Total Cost
1-5	12	$ 173	$ 2,105	$ 173	$ 2,105	$ 4,209
6-19	10	$ 345	$ 3,498	$ 345	$ 3,498	$ 6,997
20 or More	6	$ 690	$ 3,809	$ 690	$ 3,809	$ 7,618
Total	28		$ 9,412		$ 9,412	$ 18,823
All Exempt Mines						
Mine Size by Number of Employees	# of Mines	Cost per Mine [b]	Total Cost for Mines	Other Party Costs Per Mine [c]	Total Cost for Other Parties	Total Cost
1-5	3,373	$ 173	$ 581,912	$ 173	$ 581,912	$ 1,163,823
6-19	1,477	$ 345	$ 509,544	$ 345	$ 509,544	$ 1,019,089
20 or More	291	$ 690	$ 200,597	$ 690	$ 200,597	$ 401,194
Total	5,141		$1,292,053		$1,292,053	$ 2,584,105

[a] Number of mines = the number of mines not currently in compliance (from Table IV-5).

[b] Cost per mine = t X 0.15 X $23, where t is the number of persons required to receive hazard awareness training ea year and t=50 for mines with 5 or fewer employees, t=100 for mines with 6-19 employees, and t=200 for mines with more employees; 0.15 is the number of hours needed for a miner to give hazard awareness training; and $23 is the wage rate for a M/NM miner.

[c] Other party costs per mine= t X 0.15 X $23, where 0.15 now refers to the number of hours needed for a non-miner

§ 46.12 Responsibility for Independent Contractor Training

Under paragraph (b)(2) of this section, each independent contractor must inform the production-operator of any hazards of which the contractor is aware that may be created by the performance of the contractor's work at the mine.[30] This is a new requirement not covered under existing part 48 training requirements.

MSHA expects that this requirement will impose costs on all exempt mines. MSHA estimates that the frequency with which production operators are informed by independent contractors of hazards created by the contractor's work at the mine will be 5 times annually at mines with 5 or fewer employees; 10 times annually at mines with between 6 and 19 employees; and 20 times annually at mines with 20 or more employees. MSHA further estimates that it will take .05 hours for a contractor worker to inform a mine supervisor of the hazards created by the contractor's work. MSHA assumes that the contractor worker receives an hourly wage comparable to that of a miner. MSHA

[30]In addition, under paragraph (a)(2) of this section, each production-operator must provide information about site-specific hazards to each independent contractor who performs work at the mine. This requirement is not explicitly addressed under existing part 48 training requirements. However, MSHA believes that this requirement is generally covered under § 48.31, concerning hazard training, and that, in practice, exempt mines currently in compliance with existing part 48 training requirements are also informing independent contractors about site-specific hazards in compliance with paragraph (a)(2) of § 46.12 of the final rule. Furthermore, for exempt mines not currently in compliance with existing part 48 training requirements, the requirements under paragraph (a)(2) of § 46.12 can be achieved by complying with hazard awareness training requirements under § 46.11 of the final rule, and MSHA has already assigned costs for such compliance. Therefore, MSHA has assigned no additional costs to exempt mines to comply with the requirements under paragraph (a)(2) of § 46.12.

expects that 80 percent of the independent contractors are not themselves defined as mine operators but as other parties.

Table IV-37 provides MSHA’s estimate of the cost of complying with § 46.12 of the final rule borne by all exempt mines as well as by other parties.

Table IV-37: Annual Cost of Independent Contractors Informing Mine Operators of Hazards in Accordance with § 46.12 of the Final Rule

Exempt Mines Currently Not in Compliance with Part 48						
Mine Size by Number of Employees	# of Mines [a]	Cost per Mine [b]	Total Cost for Mines	Other Party Costs Per Mine [c]	Total Cost for Other Parties	Total Cost
1-5	3,361	$ 10	$ 34,116	$ 5	$ 15,462	$ 49,578
6-19	1,467	$ 20	$ 29,776	$ 9	$ 13,495	$ 43,271
20 or More	285	$ 41	$ 11,579	$ 18	$ 5,248	$ 16,827
Total	5,113		$ 75,471		$ 34,204	$ 109,675
Exempt Mines Currently in Compliance with Part 48						
Mine Size by Number of Employees	# of Mines [d]	Cost per Mine [b]	Total Cost for Mines	Other Party Costs Per Mine [c]	Total Cost for Other Parties	Total Cost
1-5	2,241	$ 10	$ 22,744	$ 5	$ 10,308	$ 33,052
6-19	2,200	$ 20	$ 44,664	$ 9	$ 20,242	$ 64,906
20 or More	1,141	$ 41	$ 46,316	$ 18	$ 20,991	$ 67,307
Total	5,582		$ 113,725		$ 51,540	$ 165,265
All Exempt Mines						
Mine Size by Number of Employees	# of Mines	Cost per Mine [b]	Total Cost for Mines	Other Party Costs Per Mine [c]	Total Cost for Other Parties	Total Cost
1-5	5,602	$ 10	$ 56,860	$ 5	$ 25,769	$ 82,630
6-19	3,667	$ 20	$ 74,440	$ 9	$ 33,736	$ 108,177
20 or More	1,426	$ 41	$ 57,896	$ 18	$ 26,238	$ 84,134
Total	10,695		$ 189,196		$ 85,744	$ 274,940

[a] Number of mines = the number of mines not currently in compliance with part 48 (from Table IV-5).

[b] Cost per mine = t X 0.05 X ($36 + (0.2 X $23)), where t is the frequency with which a mine supervisor is informed about independent contractor hazards annually; t=5 for mines with 5 or fewer employees, t=10 for mines with 6-19 employees, and t=20 for mines with 20 or more employees; 0.05 is the number of hours needed for a contractor to inform a supervisor about contractor-created hazards; $36 is the hourly wage rate for a mine supervisor; 0.2 is the proportion of independent contractors that are mine operators; and $23 is the hourly wage rate for a contractor worker.

[c] Other party costs per mine= t X 0.05 X 0.8 X $23, where 0.05 now refers to the number of hours needed for an independent contractor to inform a mine supervisor about contractor-created hazards; 0.8 is the proportion of independent contractors that are not mine operators but other parties; and $23 is the hourly wage rate for a contractor worker.

[d] Number of mines = the number of mines currently in compliance with part 48 (from Table IV-3, Table IV-4, and Table IV-5).

V. REGULATORY FLEXIBILITY CERTIFICATION AND INITIAL REGULATORY FLEXIBILITY ANALYSIS

INTRODUCTION

In accordance with section 605 of the Regulatory Flexibility Act, the Mine Safety and Health Administration certifies that the final rule does not have a significant economic impact on a substantial number of small entities. Under the Small Business Regulatory Enforcement Fairness Act (SBREFA) amendments to the Regulatory Flexibility Act, MSHA must include in the final rule a factual basis for this certification. The Agency must also publish the regulatory flexibility certification statement in the Federal Register, along with the factual basis, followed by an opportunity for the public to comment.

DEFINITION OF A SMALL MINE

Under the RFA, in analyzing the impact of a rule on small entities, MSHA must use the SBA definition for a small entity or, after consultation with the SBA Office of Advocacy, establish an alternative definition for the mining industry by publishing that definition in the Federal Register for notice and comment. MSHA has not taken such an action, and hence is required to use the SBA definition.

The SBA defines a small entity in the mining industry as an establishment with 500 or fewer employees (13 CFR 121.201). All nonmetal mines affected by this rulemaking fall into this category and hence can be viewed as sharing the special regulatory concerns which the RFA was designed to address.

The Agency is concerned, however, that looking only at the impacts of the rule on all mines does not provide the Agency with a very complete picture on which to make decisions. Traditionally, the Agency has also looked at the impacts of its rules on what the mining community refers to as "small mines"——those with fewer than 20 employees. The way these small mines perform mining operations is generally recognized as being different from the way other mines operate. In addition, MSHA has chosen to break out mines with 5 or fewer employees for purposes of this rulemaking because these mines appear to have different compliance rates and compliance costs than the other mines in the fewer-than-20-employee category.

This analysis complies with the legal requirements of the RFA for an analysis of the impacts on "small entities" while continuing MSHA's traditional look at "small mines." MSHA concludes that it can certify that the final rule has no significant impact on a substantial number of small entities that are affected by this rulemaking. The Agency determined that this is the case for affected mines that have: five or fewer

employees; between 6 and 19 employees; 20 or more employees; and 500 or fewer employees (which, in this case, are all mines affected by this rule).

FACTUAL BASIS FOR CERTIFICATION

General approach: The Agency's analysis of impacts on "small entities" begins with a "screening" analysis. The screening compares the estimated compliance costs of the rule for small mine operators in the affected sector to the estimated revenues for that sector. When estimated compliance costs are less than 1 percent of estimated revenues (for the size categories considered) the Agency believes it is generally appropriate to conclude that there is no significant impact on a substantial number of small entities. When estimated compliance costs approach or exceed 1 percent of revenue, it tends to indicate that further analysis may be warranted.

Derivation of costs and revenues: In the case of this final rule, because the compliance costs must be absorbed by the nonmetal mines affected by this rule, the Agency decided to focus its attention exclusively on the relationship between costs and revenues for these mines, rather than looking at the entire metal and nonmetal mining sector as a whole.

The compliance costs noted in this chapter are presented earlier in Chapter IV of this document along with an explanation

of how they were derived. In estimating compliance costs, different assumptions often had to be made for mines of different employment sizes in order to account for differences in mining operations. For example, MSHA varied assumptions on the basis of mine size concerning the following: the current compliance rate of exempted mines with existing part 48 training requirements; the number of persons trained per mine; and the number of training sessions a mine will have annually.

In determining revenues for the nonmetal mines affected by this rulemaking, MSHA multiplied their production data (in tons) by the price per ton of the commodity. The production and price data were obtained from the United States Geological Survey (USGS), Mining and Quarrying Trends 1997 Annual Review and other Minerals Information publications.[31]

Results of screening analysis. As shown in Table V-1 with respect to the exempt nonmetal mines with 5 or fewer employees, the estimated annual costs of the rule as a percentage of annual revenues are 0.32 percent. For exempt nonmetal mines that have between 6 and 19 employees, the estimated annual costs of the rule as a percentage of annual revenues are 0.14 percent. For exempt nonmetal mines with 20 or more employees, the estimated annual costs of the rule as a percentage of annual revenues are

[31]U.S. Department of the Interior/U.S. Geological Survey. Mining and Quarrying Trends, 1997 Annual Review. Tables 2 and 3. 1997. USGS Minerals Information - 1997.

0.04 percent. Finally, for all exempt nonmetal mines (which are mines that have 500 or fewer employees) the estimated annual costs of the rule as a percentage of annual revenues are 0.10 percent.

These estimated costs as a percentage of revenues may be slightly misleading insofar as they include the net compliance cost savings and the revenues of exempt mines currently in compliance with existing part 48 training requirements. As shown in Table V-2, for the exempt mines not currently in compliance with existing part 48 training requirements, the annual costs of the rule as a percentage of annual revenues are 0.54 percent for mines with 5 or fewer employees, 0.36 percent for mines with between 6 and 19 employees, and 0.23 percent for mines with 20 or more employees. For all exempt mines not currently in compliance with existing part 48 training requirements, the annual cost of the rule is 0.35 percent of annual revenues.

In every case, the estimated compliance costs are substantially less than 1 percent of revenues, well below the level suggesting that the rule might have a significant impact on a substantial number of small entities. Accordingly, MSHA has certified that there is no such impact for small entities that mine the commodities that are affected by this rule.

As required under the law, MSHA is complying with its obligation to consult with the Chief Counsel for Advocacy at the

Small Business Administration on this final rule, and on the Agency's certification of no significant economic impact on the mines affected by this rule. Consistent with Agency practice, notes of any meetings with the Chief Counsel's office on this rule, or any written communications, will be placed in the rulemaking record.

TABLE V-1: Exempt Nonmetal Mines Covered by the Final Rule[a] (dollars in thousands)

Employment Size	Estimated Costs	Estimated Revenues[b]	Costs as Percentage of Revenues
(1-5)	6,197	1,950,102	0.32%
(6-19)	6,384	4,556,847	0.14%
(20 or more)	3,975	9,756,081	0.04%
All Mines[c]	16,556	16,263,030	0.10%

[a]All mines covered by the final rule are surface mines.

[b]Data for revenues derived from U.S. Department of the Interior/U.S. Geological Survey. Mining and Quarrying Trends, 1997 Annual Review. 1997. Tables 2 and 3. Revenues for the three U.S. colloidal phosphate mines estimated using average revenues of the other exempt mines in the same size categories covered by the final rule.

[c]Every mine affected by the rule has 500 or fewer employees.

TABLE V-2: Exempt Nonmetal Mines Not Currently in Compliance with the Final Rule[a] (dollars in thousands)

Employment Size	Estimated Costs[b]	Estimated Revenues[c]	Costs as Percentage of Revenues
(1-5)	6,329	1,170,061	0.54%
(6-19)	6,608	1,822,739	0.36%
(20 or more)	4,490	1,951,216	0.23%
All Mines[d]	17,426	4,944,016	0.35%

[a]All mines covered by the final rule and not currently in compliance with existing part 48 training requirements are surface mines.

[b]The estimated costs of the final rule do not include the costs incurred by new mines or the costs and savings of exempt mines currently in compliance (or, at least, not out of compliance) with existing part 48 training requirements

[C]Estimated revenues based on total revenues for exempt nonmetal mines in that size category (from Table V-1) multiplied by the percentage of exempt mines in that size category not currently in compliance with existing part 48 training requirements.

[d]Every mine affected by the rule has 500 or fewer employees.

VI. THE UNFUNDED MANDATES REFORM ACT OF 1995 AND OTHER REGULATORY CONSIDERATIONS

THE UNFUNDED MANDATES REFORM ACT

MSHA has determined that, for purposes of § 202 of the Unfunded Mandates Reform Act of 1995, this final rule does not include any Federal mandate that may result in increased expenditures by State, local, or tribal governments in the aggregate of more than $100 million, or increased expenditures by the private sector of more than $100 million. Moreover, the Agency has determined that for purposes of § 203 of that Act, this final rule would not significantly or uniquely affect these entities.

Background

The Unfunded Mandates Reform Act was enacted in 1995. While much of the Act is designed to assist the Congress in determining whether its actions will impose costly new mandates on State, local, and tribal governments, the Act also includes requirements to assist Federal agencies to make this same determination with respect to regulatory actions.

Analysis

Based on the analysis in this Regulatory Economic Analysis (REA), the yearly compliance costs resulting from this final rule will be approximately 17.9 million, of which about 16.6 million will be borne by the affected nonmetal mine operators. Accordingly, there is no need for further analysis under § 202 of the Unfunded Mandates Reform Act.

MSHA has concluded that small governmental entities would not be significantly or uniquely impacted by the regulation. The final rule will affect 10,152 surface nonmetal mining operations; however, increased costs will be incurred only by those nonmetal mines affected by the rule who currently are not fully in compliance with the rule's provisions. MSHA data indicate that there are 185 nonmetal mines affected by this rule that are state or local government owned. In the PREA in support of the proposed rule, MSHA expressed its belief that all 185 of these mines are already in compliance with existing part 48 training requirements. However, a speaker at the Pittsburgh public hearing on the proposed rule asserted that (in New York State, at least) there were many mines operated by local governments not counted or inspected by MSHA and not in compliance with existing part 48 training requirements. Even if this assertion were true, MSHA's analysis of regulatory impacts indicates that the cost of the final rule will range from only $1,800 per mine to $15,300

per mine not currently in compliance with existing part 48 training requirements. MSHA believes that these costs do not significantly or uniquely impact these small government entities.

When MSHA issued the proposed rule, the Agency affirmatively sought input of any state, local, and tribal government which may be affected by the training rulemaking. This included state and local governmental entities who operate sand and gravel mines in the construction and repair of highways and roads. MSHA mailed a copy of the proposed rule to these entities. The Agency received comments from several state agencies and local government entities. No tribal government entity commented on the proposed rule. MSHA will mail a copy of the final rule to approximately 185 such entities.

EXECUTIVE ORDER 13045: PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS

In accordance with Executive Order 13045, MSHA has evaluated the environmental health and safety effects of the final rule on children. The Agency has determined that the rule will have no effect on children.

EXECUTIVE ORDER 13084: CONSULTATION AND COORDINATION WITH INDIAN TRIBAL GOVERNMENTS

MSHA certifies that the final rule will not impose substantial direct compliance costs on Indian tribal governments.

VII. THE PAPERWORK REDUCTION ACT OF 1995

The rule contains information collection requirements for nonmetal (NM) mines affected by the final rule. The provisions that require paperwork for mine operators are contained in the following sections: §§ 46.3, 46.5, 46.6, 46.7, 46.8, 46.9, and 46.11. In addition, one provision (§46.3) also contains paperwork for miners and/or miners' representatives.

Table VII-1 displays mine operators' first year and recurring burden hours and costs by provision and mine size. On average, first year and recurring burden hours and costs will occur once every two years (i.e., 1st year, 3rd year, etc.). Table VII-2 provides annual burden hours and costs for mine operators by provision and mine size. Table VII-3 shows first year and recurring burden hours and costs by provision and mine size for miners and their representatives. Table VII-4 shows annual burden hours and costs by provision and mine size for miners and their representatives.

The rule imposes first year total burden hours of 253,393 and costs related to those hours are $8,284,953. The first year burden hours and costs are composed by summing the figures in Tables VII-1, VII-2, VII-3, and VII-4. In the second year, the annual burden hours would be 240,575 and costs related to those

hours are $7,855,987, which is shown in Tables VII-2 and VII-4.[32] In the third year, total burden hours and related costs will be the same as the first year. This is because the first year/recurring burden hours and related costs recur every other year.

Following the tables is an explanation of how the burden hours and compliance costs related to each provision were determined. Although the paperwork compliance costs are included in the total compliance costs of the rule estimated in Chapter IV of this document, the paperwork compliance costs are again presented in this section in order to show their relationship to burden hours.

[32]All of the preceding costs for Tables VII-1, VII-2, VII-3 and VII-4 do not include photocopying and postage costs. These costs are itemized in Chapter IV of this REA and summarized in the accompanying paperwork package submitted to OMB for this rule.

Table 1 Mine Operators' First Year/Recurring Burden Hours and Costs								
	Mines (1-5)		Mines (6-19)		Mines (≥20)		Totals	
Prov.	Hrs.	Costs	Hrs.	Costs	Hrs.	Costs	Hrs.	Costs
46.3	7,670	$259,458	3,360	$113,653	1,243	$43,321	12,273	$416,432

Table 2 Mine Operators' Annual Burden Hours and Costs								
	Mines (1-5)		Mines (6-19)		Mines (≥20)		Totals	
Prov.	Hrs.	Costs	Hrs.	Costs	Hrs.	Costs	Hrs.	Costs
46.3	254.584	$8,614	166.180	$5,620	124.032	$4,321	545	$18,554
46.5	41,153	$1,481,519	21,604	$777,757	4,963	$178,654	67,720	$2,437,930
46.6	8,534	$307,213	4,641	$167,066	1,092	$39,327	14,267	$513,606
46.7	6,102	$219,673	13,328	$479,804	18,692	$672,924	38,122	$1,372,401
46.8	34,944	$1,257,994	15,538	$559,369	5,552	$199,882	56,035	$2,017,246
46.9	1,541	$40,829	3,145	$83,345	2,995	$79,357	7,680	$203,531
46.11	25,298	$581,843	22,155	$509,565	8,730	$200,790	56,183	$1,292,198
Total	117,826	$3,897,684	80,577	$2,582,527	42,148	$1,375,254	240,552	$7,855,465

Table VII-3 Miners and Miners' Representatives First Year/Recurring Burden Hours and Costs								
	Mines (1-5)		Mines (6-19)		Mines (≥20)		Totals	
Prov.	Hrs.	Costs	Hrs.	Costs	Hrs.	Costs	Hrs.	Costs
46.3	358	$8,223	157	$3,601	31	$709	545	$12,534

Table VII-4 Miners and Miners' Representatives Annual Burden Hours and Costs								
	Mines (1-5)		Mines (6-19)		Mines (≥20)		Totals	
Prov.	Hrs.	Costs	Hrs.	Costs	Hrs.	Costs	Hrs.	Costs
46.3	12	$273	8	$178	3	$71	23	$522

§ 46.3(a) for Existing Mines Under this provision each affected existing mine operator must develop a written training plan. The total affected NM mines in each size category that must write a plan are: 3,373 mines that employ 5 or fewer workers; 1,477

mines that employ between 6 and 19 workers; and 291 mines that employ 20 or more workers. MSHA estimates that writing the training plan will take 2 hours for mines that employ fewer than 20 workers, and 4 hours for mines that employ 20 or more workers. For all affected mines, a mine supervisor earning $36 per hour will write the plan. On average, these burden hours and costs will occur once every two years (occurring in the first year, third year, etc.); thus, the costs are annualized using an annualization factor of 0.553.

§ 46.3(a) First Year/Recurring Burden Hours For Existing Mines

(a) Mine Size	(b) Mines	(c) Hrs. to Write Plan	(d) Total Hours
(1-5)	3,373	2	6,746
(6-19)	1,477	2	2,954
(≥20)	291	4	1,164
	5,141		10,864

Total Hours = Col.(b) x Col.(c)

§ 46.3(a) First Year/Recurring Annualized Burden Costs For Existing Mines

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Recurring Costs	(e) Total Annualized Costs
(1-5)	6,746	$36	$242,856	$134,299
(6-19)	2,954	$36	$106,344	$58,808
(≥20)	1,164	$36	$41,904	$23,173
			$391,104	$216,281

Total Costs = Col.(b) x Col.(c)
Total Annualized costs = Col.(d) x 0.553

§ 46.3(a) for New Mines Under this provision each affected new mine operator must develop a written training plan. The affected NM mines in each size category that must write a plan are: 112 mines that employ 5 or fewer workers; 73 mines that employ between 6 and 19 workers; and 29 mines that employ 20 or more workers. MSHA estimates that writing the training plan will take 2 hours for mines that employ fewer than 20 workers, and 4 hours for mines that employ 20 or more workers. For all affected mines, a mine supervisor earning $36 per hour will write the plan. These burden hours and costs will occur annually.

§ 46.3(a) Annual Burden Hours
For New Mines

(a) Mine Size	(b) Mines	(c) Hrs. to Write Plan	(d) Total Hours
(1-5)	112	2	224
(6-19)	73	2	146
(≥20)	29	4	116
	214		486

Total Hours = Col.(b) x Col.(c)

§ 46.3(a) Annual Burden Costs
For New Mines

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	224	$36	$8,064
(6-19)	146	$36	$5,256
(≥20)	116	$36	$4,176
			$17,496

Total Costs = Col.(b) x Col.(c)

§ 46.3(c)for Existing Mines A plan that does not include the minimum information specified in proposed § 46.3(b) must be approved by MSHA. The plan must be sent to MSHA and the miner or miners' representative must be notified of the submission. For each size category, MSHA estimates that 20 percent of existing mine operators will choose to write a plan and send it to MSHA for approval. Thus, the NM mines affected by this provision in each size category are: 675 mines that employ 5 or fewer workers; 295 mines that employ between 6 and 19 workers; and 58 mines that employ 20 or more workers. MSHA estimates that a clerical worker, earning $17 per hour, will require about 0.2 hours per mine to photocopy the plan, mail it, and notify the miner or miners' representative. On average, these burden hours and costs will occur once every two years (occurring in the first year, third year, etc.); thus, the costs are annualized using an annualization factor of 0.553.

§ 46.3(c) First Year/Recurring One-Time Burden Hours For Existing Mines

(a) Mine Size	(b) Mines	(c) Clerical Time (per mine)	(d) Total Hours
(1-5)	675	0.2	135
(6-19)	295	0.2	59
(≥20)	58	0.2	12
	1,028		206

Total Hours = Col.(b) x Col.(c)

§ 46.3(c) First Year/Recurring Annualized Burden Costs For Existing Mines

(a) Mine Size	(b) Total Hours	(c) Clerical Wage (per hr.)	(d) Total Recurring Costs	(e) Total Annualized Costs
(1-5)	135	$17	$2,295	$1,269
(6-19)	59	$17	$1,003	$555
(≥20)	12	$17	$197	$109
			$3,495	$1,933

Total Costs = Col.(b) x Col.(c)
Total Annualized costs = Col.(d) x 0.553

§46.3(c)for New Mines A plan that does not include the minimum information specified in proposed § 46.3(b) must be approved by MSHA. The plan must be sent to MSHA and the miner or miners' representative must be notified of the submission. For each size category, MSHA estimates that 20 percent of new mine operators will choose to write a plan and send it to MSHA for approval. Thus, the NM mines affected by this provision in each size category are: 22 mines that employ 5 or fewer workers; 15 mines that employ between 6 and 19 workers; and 6 mines that employ 20 or more workers. MSHA estimates that a clerical worker, earning $17 per hour, will require about 0.2 hours per mine to photocopy the plan, mail it, and notify the miner or miner representative.

§ 46.3(c) Annual Burden Hours
For New Mines

(a) Mine Size	(b) Mines	(c) Clerical Time (per mine)	(d) Total Hours
(1-5)	22	0.2	4
(6-19)	15	0.2	3
(≥20)	6	0.2	1
	43		9

Total Hours = Col.(b) x Col.(c)

§ 46.3(c) Annual Burden Costs
For New Mines

(a) Mine Size	(b) Total Hours	(c) Clerical Wage (per hr.)	(d) Total Annual Costs
(1-5)	4	$17	$75
(6-19)	3	$17	$51
(≥20)	1	$17	$20
			$146

Total Costs = Col.(b) x Col.(c)

§ 46.3(d) for Existing Mines The mine operator must provide the miners' representative with a copy of the training plan. At mines where no miners' representative has been designated, a copy of the plan must be posted at the mine or a copy must be provided to each miner. The existing NM mines that are affected by this provision, in each size category, are: 3,373 mines that employ 5 or fewer workers; 1,477 mines that employ between 6 and 19 workers; and 291 mines that employ 20 or more workers. MSHA estimates that a clerical worker, earning $17 per hour will require 0.1 hours to photocopy the plan and either deliver or post the plan. On average, these burden hours and costs will occur once every two years (occurring in the first year, third year, etc.); thus, the costs are annualized using an annualization factor of 0.553.

§ 46.3(d) First Year/Recurring Burden Hours
For Existing Mines

(a) Mine Size	(b) Mines	(c) Clerical Time (per mine)	(d) Total Hours
(1-5)	3,373	0.1	337
(6-19)	1,477	0.1	148
(≥20)	291	0.1	29
	5,141		514

Total Hours = Col.(b) x Col.(c)

§ 46.3(d) First Year/Recurring Annualized Burden Costs
For Existing Mines

(a) Mine Size	(b) Total Hours	(c) Clerical Wage (per hr.)	(d) Total Recurring Costs	(e) Total Annualized Costs
(1-5)	337	$17	$5,734	$3,171
(6-19)	148	$17	$2,511	$1,389
(≥20)	29	$17	$495	$274
			$8,740	$4,833

Total Costs = Col.(b) x Col.(c)
Total Annualized costs = Col.(d) x 0.553

§ 46.3(d) for New Mines The mine operator must provide the miners' representative with a copy of the training plan. At mines where no miners' representative has been designated, a copy of the plan must be posted at the mine or a copy must be provided to each miner. The New NM mines that are affected by this provision, in each size category, are: 112 mines that employ 5 or fewer workers; 73 mines that employ between 6 and 19 workers; and 29 mines that employ 20 or more workers. MSHA estimates that a clerical worker, earning $17 per hour, will require 0.1 hours to photocopy the plan and either deliver or post the plan.

§ 46.3(d) Annual Burden Hours
For New Mines

(a) Mine Size	(b) Mines	(c) Clerical Time (per mine)	(d) Total Hours
(1-5)	112	0.1	11
(6-19)	73	0.1	7
(≥20)	29	0.1	3
	214		21

Total Hours = Col.(b) x Col.(c)

§ 46.3(d) Annual Burden Costs
For New Mines

(a) Mine Size	(b) Total Hours	(c) Clerical Wage (per hr.)	(d) Total Annual Costs
(1-5)	11	$17	$190
(6-19)	7	$17	$124
(≥20)	3	$17	$49
			$364

Total Costs = Col.(b) x Col.(c)

§ 46.3(e) for Existing Mines. This provision are not borne by the mine operator, but by miners or miners' representatives. Within 2 weeks following the receipt or posting of the training plan, miners or their representatives may submit written comments on the plan to the operator, or to MSHA, and they may also ask that the plan be reviewed. The existing NM mines in each size category affected by this rule are: 3,373 mines that employ 5 or fewer workers; 1,477 mines that employ between 6 and 19 workers; and 291 mines that employ 20 or more workers. It is estimated that a miner or miners' representative, earning $23 per hr., will require 2 hrs. per mine to prepare written comments, and 0.3 hrs. to prepare a letter asking for plan review. MSHA estimates that a miner or miners' representative will submit written comments for 5% of the existing mines in each size category, and will request a plan review for 2% of such mines. Thus, the time allotted for this provision is 0.106 hours [(0.05 x 2 hrs.) +(0.02 x 0.3 hours)]. On average, these burden hours and costs occur once every 2 years (occurring in the 1st year, 3rd year, etc.); thus, the costs are annualized using a 0.553 annualization factor.

§ 46.3(e) First Year/Recurring Burden Hours
For Existing Mines

(a) Mine Size	(b) Mines	(c) Miner Time (per hr.)	(d) Total Hours
(1-5)	3,373	0.106	358
(6-19)	1,477	0.106	157
(≥20)	291	0.106	31
	5,141		545

Total Hours = Col.(b) x Col.(c)

§ 46.3(e) First Year/Recurring Annualized Burden Costs
For Existing Mines

(a) Mine Size	(b) Total Hours	(c) Miner Wage (per hr.)	(d) Total Recurring Costs	(e) Total Annualized Costs
(1-5)	358	$23	$8,223	$4,548
(6-19)	157	$23	$3,601	$1,991
(≥20)	31	$23	$709	$392
			$12,534	$6,931

Total Costs = Col.(b) x Col.(c)
Total Annualized costs = Col.(d) x 0.553

§ 46.3(e) for New Mines. This provision are not borne by the mine operator, but by miners or miners' representatives. Within 2 weeks following the receipt or posting of the training plan, miners or their representatives may submit written comments on the plan to the operator, or to MSHA, and they may also ask that the plan be reviewed. The new NM mines in each size category affected by this rule are: 112 mines that employ 5 or fewer workers; 73 mines that employ between 6 and 19 workers; and 29 mines that employ 20 or more workers. It is estimated that a miner or miners' representative, earning $23 per hr., will require 2 hrs. per mine to prepare written comments, and 0.3 hrs. to prepare a letter asking for plan review. MSHA estimates that a miner or miners' representative will submit written comments for 5% of the existing mines in each size category, and will request a plan review for 2% of such mines. Thus, the time allotted for this provision is 0.106 hours [(0.05 x 2 hrs.) +(0.02 x 0.3 hours)].

§ 46.3(e) Annual Burden Hours
For New Mines

(a) Mine Size	(b) Mines	(c) Miner Time (per hr.)	(d) Total Hours
(1-5)	112	0.106	12
(6-19)	73	0.106	8
(≥20)	29	0.106	3
	214		23

Total Hours = Col.(b) x Col.(c)

§ 46.3(e) Annual Burden Costs
For New Mines

(a) Mine Size	(b) Total Hours	(c) Miner Wage (per hr.)	(d) Total Annual Costs
(1-5)	12	$23	$273
(6-19)	8	$23	$178
(≥20)	3	$23	$71
			$522

Total Costs = Col.(b) x Col.(c)

§ 46.3(g) for Existing Mines Requires the mine operator to provide the miners' representative, if any, with a copy of the approved training plan within one week of approval. At mines where no miners' representative has been designated, the operator must post a copy of the plan at the mine site or provide a copy to each miner within one week of approval. MSHA estimates that the affected existing mines are: 675 mines that employ 5 or fewer workers; 295 mines that employ between 6 and 19 workers; and 58 mines that employ 20 or more workers. On average, a clerical person, earning $17 per hour, is estimated to take 0.1 hours to photocopy and either post or deliver the approved training plan. On average, these burden hours and costs occur once every 2 years (occurring in the 1st year, 3rd year, etc.); thus, the costs are annualized using a 0.553 annualization factor.

§ 46.3(g) First Year/Recurring Burden Hours For Existing Mines

(a) Mine Size	(b) Mines	(c) Miner Time (per hr.)	(d) Total Hours
(1-5)	675	0.1	68
(6-19)	295	0.1	30
(≥20)	58	0.1	6
	1,028		103

Total Hours = Col.(b) x Col.(c)

§ 46.3(g) First Year/Recurring Annualized Burden Costs For Existing Mines

(a) Mine Size	(b) Total Hours	(c) Clerical Wage (per hr.)	(d) Total Recurring Costs	(e) Total Annualized Costs
(1-5)	68	$17	$1,148	$635
(6-19)	30	$17	$502	$277
(≥20)	6	$17	$99	$55
			$1,748	$966

Total Costs = Col.(b) x Col.(c)
Total Annualized costs = Col.(d) x 0.553

§ 46.3(g) for New Mines Requires the mine operator to provide the miners' representative, if any, with a copy of the approved training plan within one week of approval. At mines where no miners' representative has been designated, the operator must post a copy of the plan at the mine site or provide a copy to each miner within one week of approval. MSHA estimates that the affected new mines are: 22 mines that employ 5 or fewer workers; 15 mines that employ between 6 and 19 workers; and 6 mines that employ 20 or more workers. On average, a clerical person, earning $17 per hour, is estimated to take 0.1 hours to photocopy and either post or deliver the approved training plan.

§ 46.3(g) Annual Burden Hours
For New Mines

(a) Mine Size	(b) Mines	(c) Miner Time (per hr.)	(d) Total Hours
(1-5)	22	0.1	2
(6-19)	15	0.1	2
(≥20)	6	0.1	1
	43		4

Total Hours = Col.(b) x Col.(c)

§ 46.3(g) Annual Burden Costs
For New Mines

(a) Mine Size	(b) Total Hours	(c) Clerical Wage (per hr.)	(d) Total Annual Costs
(1-5)	2	$17	$37
(6-19)	2	$17	$26
(≥20)	1	$17	$10
			$73

Total Costs = Col.(b) x Col.(c)

§ 46.3(h)for Existing Mines A mine operator may appeal an MSHA decision concerning the approval of its training plan. The existing NM mines affected by this provision in each size category are: 13.05 mines that employ 5 or fewer workers; 6.04 mines that employ between 6 and 19 workers; and 1.02 mine that employs 20 or more workers. MSHA assumes that, for 90% of the mines affected by this provision, the appeal will be written by a mine supervisor. MSHA estimates that a mine supervisor, earning $36 per hour, will require 4 hours to write the appeal. On average, these burden hours and costs occur once every 2 years (occurring in the 1st year, 3rd year, etc.); thus, the costs are annualized using a 0.553 annualization factor.

§ 46.3(h) First Year/Recurring Burden Hours
For Existing Mines

(a) Mine Size	(b) Mines	(c) Miner Time (per hr.)	(d) Total Hours
(1-5)	11.745	4	47
(6-19)	5.436	4	22
(≥20)	0.918	4	4
	18.099		72

Col.(b) = affected mines x 0.90
Total Hours = Col.(b) x Col.(c)

§ 46.3(h) First Year/Recurring Annualized Burden Costs
For Existing Mines

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Recurring Costs	(e) Total Annualized Costs
(1-5)	47	$36	$1,691	$935
(6-19)	22	$36	$783	$433
(≥20)	4	$36	$132	$73
			$2,606	$1,441

Total Costs = Col.(b) x Col.(c)
Total Annualized costs = Col.(d) x 0.553

§ 46.3(h) For Existing Mines - Continued In the remaining 10 percent of existing mines that appeal the decision on approval, the appeal process is expected to be handled by an outside lawyer (a third party). There are no mine operator burden hours in this case, because the mine operator will pay the third party for its services. The existing mines affected in each size category are: 1.305 mines that employ 1 to 5 workers, 0.604 mines that employ between 6 and 19 workers, and 0.102 mines that employ 20 or more workers. The lawyer fees to handle an appeal process is estimated to be $2,000 per appeal. On average, these burden hours and costs occur once every 2 years (occurring in the 1st year, 3rd year, etc.); thus, the costs are annualized using a 0.553 annualization factor.

§ 46.3(h) First Year/Recurring Annualized Burden Costs For Existing Mines

(a) Mine Size	(b) Mines	(c) Lawyers Fee (per mine)	(d) Total Recurring Costs	(e) Total Annualized Costs
(1-5)	1.305	$2,000	$2,610	$1,443
(6-19)	0.604	$2,000	$1,208	$668
(≥20)	0.102	$2,000	$204	$113
	2.011		$4,022	$2,224

Total Costs = Col.(b) x Col.(c)
Total Annualized Costs = Col.(d) x 0.553

§ 46.3(h)for New Mines A mine operator may appeal an MSHA decision concerning the approval of its training plan. The number of new mines that will write an appeal are: 22 mines that employ 1 to 5 workers, and 15 mines that employs between 6 and 19 workers, and 6 mines that employs 20 or more workers. Of these mines, 2 percent of them will file an appeal, and in 90 percent of these cases the appeal will be written by a mine supervisor. Thus, the number of mines affected by this provision, in each size category, are: 0.396 mines that employ 1 to 5 workers, 0.270 mines that employ between 6 and 19 workers, and 0.108 mines that employ 20 or more workers. MSHA estimates that a mine supervisor, earning $36 per hour, will require 4 hours to write the appeal.

§ 46.3(h) Annual Burden Hours
For New Mines

(a) Mine Size	(b) Mines	(c) Miner Time (per hr.)	(d) Total Hours
(1-5)	0.396	4	2
(6-19)	0.270	4	1
(≥20)	0.108	4	0
	1		3

Col.(b) = affected mines x 0.90
Total Hours = Col.(b) x Col.(c)

§ 46.3(h) Annual Annualized Burden Costs
For New Mines

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	2	$36	$57
(6-19)	1	$36	$39
(≥20)	0	$36	$16
			$111

Total Costs = Col.(b) x Col.(c)

§ 46.3(h) For New Mines - Continued In the remaining 10 percent of new mines that appeal the decision on approval, the appeal process is expected to be handled by an outside lawyer (a third party). There are no mine operator burden hours in this case, because the mine operator will pay the third party for its services. About 20 percent of new mines will have a written plan, or 22 mines that employ 1 to 5 workers, 15 mines that employs between 6 and 19 workers, and 6 mines that employs 20 or more workers. Of these mines, 2 percent will file an appeal, and in 10 percent of these cases the appeal will be written by an attorney, who is a contractor of the operator. Thus, the number of mines affected by this provision, in each size category, are: 0.044 mines that employ 1 to 5 workers, 0.030 mines that employ between 6 and 19 workers, and 0.012 mines that employ 20 or more workers. The lawyer fees to handle an appeal process are estimated to be $2,000 per appeal.

§ 46.3(h) Annual Burden Costs
For New Mines

(a) Mine Size	(b) Mines	(c) Attorney Fee per Mine	(d) Total Annual Costs
(1-5)	0.044	$2,000	$88
(6-19)	0.030	$2,000	$60
(≥20)	0.012	$2,000	$24
	0.086		$172

Total Costs = Col.(b) x Col.(c)

§ 46.3(i) For Existing Mines The mine operator must make available a copy of the current training plan for inspection by MSHA and for examination by miners and their representatives. The existing mines affected by this provision for each size category are: 3,373 mines that employ 5 or fewer workers; 1,477 mines that employ between 6 and 19 workers; and 291 mine that employ 20 or more workers. MSHA estimates that a clerical worker, earning $17 per hour, will require 0.1 hours to photocopy and file the training plan. On average, these burden hours and costs occur once every 2 years (occurring in the 1st year, 3rd year, etc.); thus, the costs are annualized using a 0.553 annualization factor.

§ 46.3(i) First Year/Recurring Burden Hours
For Existing Mines

(a) Mine Size	(b) Mines	(c) Clerical Time (per hr.)	(d) Total Hours
(1-5)	3,373	0.1	337
(6-19)	1,477	0.1	148
(≥20)	291	0.1	29
	5,141		514

Total Hours = Col.(b) x Col.(c)

§ 46.3(i) First Year/Recurring Annualized Burden Costs
For Existing Mines

(a) Mine Size	(b) Total Hours	(c) Clerical Wage (per hr.)	(d) Total Recurring Costs	(e) Total Annualized Costs
(1-5)	337	$17	$5,734	$3,171
(6-19)	148	$17	$2,511	$1,389
(≥20)	29	$17	$495	$274
			$8,740	$4,833

Total Costs = Col.(b) x Col.(c)
Total Annualized costs = Col.(d) x 0.553

§ 46.3(i) For New Mines The mine operator must make available a copy of the current training plan for inspection by MSHA and for examination by miners and their representatives. The new mines affected by this provision for each size category are: 112 mines that employ 5 or fewer workers; 73 mines that employ between 6 and 19 workers; and 29 mine that employ 20 or more workers. MSHA estimates that a clerical worker, earning $17 per hour, will require 0.1 hours to photocopy and file the training plan.

§ 46.3(i) Annual Burden Hours
For New Mines

(a) Mine Size	(b) Mines	(c) Clerical Time (per hr.)	(d) Total Hours
(1-5)	112	0.1	11
(6-19)	73	0.1	7
(≥20)	29	0.1	3
	214		21

Total Hours = Col.(b) x Col.(c)

§ 46.3(i) Annual Burden Costs
For New Mines

(a) Mine Size	(b) Total Hours	(c) Clerical Wage (per hr.)	(d) Total Annual Costs
(1-5)	11	$17	$190
(6-19)	7	$17	$124
(≥20)	3	$17	$49
			$364

Total Costs = Col.(b) x Col.(c)

§ 46.5(a) Each operator must provide each newly-hired miner lacking mining experience with new miner training. When the new-miner training is given by the mine supervisor, there is a paperwork burden imposed on mine operators associated with the preparation time the mine supervisor requires to provide training.

The mines affected by this provision for each size category are: 3,373 mines that employ 5 or fewer workers; 1,477 mines that employ between 6 and 19 workers; and 291 mine that employ 20 or more workers. Annually, MSHA estimates that, for each mine, a mine supervisor, earning $36 per hour, will require 6 hours to prepare for the new miner training.

§ 46.5(a) Annual Burden Hours
Supervisor Preparation for New Miner Training

(a) Mine Size	(b) Mines	(c) Superv. Time (per hr.)	(d) Total Hours
(1-5)	3,373	6	20,238
(6-19)	1,477	6	8,862
(≥20)	291	6	1,746
	5,141		30,846

Total Hours = Col.(b) x Col.(c)

§ 46.5(a) Annual Burden Costs
Supervisor Preparation for New Miner Training

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	20,238	$36	$728,568
(6-19)	8,862	$36	$319,032
(≥20)	1,746	$36	$62,856
			$1,110,456

Total Costs = Col.(b) x Col.(c)

§ 46.5(a) Continued In addition to the supervisor's preparation for new miner training, there is also a paperwork burden attributable to the time it takes the mine supervisor to provide the training.

With respect to each size category, the average number of training sessions that the mine supervisor will provide annually per mine will be: 0.46 sessions for mines that employ 5 or fewer workers; 0.64 sessions for mines that employ between 6 and 19 workers; and 0.82 sessions for mines that employ 20 or more workers. On average, each training session is estimated to last 13.48 hours. A mine supervisor earns $36 per hour.

§ 46.5(a) Annual Burden Hours
Supervisor Training Time for New Miner Training

(a) Mine Size	(b) Mines	(c) # of Mine Sessions (per mine)	(d) Superv. Time (per hr.)	(e) Total Hours
(1-5)	3,373	0.46	13.48	20,915.30
(6-19)	1,477	0.64	13.48	12,742.37
(≥20)	291	0.82	13.48	3,216.60
	5,141			36,874.27

Total Hours = Col.(b) x Col.(c) x Col.(d)

§ 46.5(a) Annual Burden Costs
Supervisor Training Time for New Miner Training

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	20,915.30	$36	$752,951
(6-19)	12,742.37	$36	$458,725
(≥20)	3,216.60	$36	$115,798
			$1,327,474

Total Costs = Col.(b) x Col.(c)

§ 46.5(a) Continued In addition, part of new miner training will also be provided off-site by a third party. The mine operator will pay the third party for providing this part of the new miner training; thus the mine operator will incur burden costs but no burden hours.

The number of miners receiving off-site training in each category are: 1,543 miners in mines that employ 5 or fewer workers; 1,889 miners in mines that employ between 6 and 19 workers; and 956 miners in mines that employ 20 or more workers.

On average, the annual costs for off-site training are $130 per miner. This consists of the following: a $35 training fee, $30 for transportation to off-site training, $30 per diem for meals, and $35 for overnight lodgings (MSHA assumes that half of the miners receiving off-site training will require overnight lodgings for one night at $70 per night, or 0.5 x $70).

§ 46.5(a) Annual Burden Costs
Off Site New Miner Training

(a) Mine Size	(b) Miners	(c) Off Site Training Costs (per miner)	(d) Total Annual Costs
(1-5)	1,543	$130	$200,590
(6-19)	1,889	$130	$245,570
(≥20)	956	$130	$124,280
	4,388		$570,440

Total Costs = Col.(b) x Col.(c)

§ 46.6 Each mine operator must provide training to newly-hired experienced miners. The burden borne by mine operators is for the time the mine supervisor requires to prepare for the experienced miner training.

The mines affected by this provision for each size category are: 3,373 mines that employ 5 or fewer workers; 1,477 mines that employ between 6 and 19 workers; and 291 mines that employ 20 or more workers. Annually, MSHA estimates that, for each mine, a mine supervisor, earning $36 per hour, will require 1 hour to prepare to give the experienced miner training.

§ 46.6 Annual Burden Hours - Supervisor Preparation for Newly-Hired Experienced Miner Training

(a) Mine Size	(b) Mines	(c) Superv. Time (per hr.)	(d) Total Hours
(1-5)	3,373	1	3,373
(6-19)	1,477	1	1,477
(≥20)	291	1	291
	5,141		5,141

Total Hours = Col.(b) x Col.(c)

§ 46.6 Annual Burden Costs - Supervisor Preparation for Newly-Hired Experienced Miner Training

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	3,373	$36	$121,428
(6-19)	1,477	$36	$53,172
(≥20)	291	$36	$10,476
			$185,076

Total Costs = Col.(b) x Col.(c)

§ 46.6 Continued In addition to preparing for newly-hired experienced miner training, there is also a paperwork burden attributable to the time it takes the mine supervisor to give the training.

With respect to each size category, the average number of training sessions that the mine supervisor will give annually per mine will be: 0.45 sessions for mines that employ 5 or fewer workers; 0.63 sessions for mines that employ between 6 and 19 workers; and 0.81 sessions for mines that employ 20 or more workers. On average, each training session is estimated to last 3.4 hours. A mine supervisor earns $36 per hour.

§ 46.6 Annual Burden Hours - Supervisor Training Time for Newly-Hired Experienced Miner Training

(a) Mine Size	(b) Mines	(c) # of Mine Sessions (per mine)	(d) Superv. Time (per hr.)	(e) Total Hours
(1-5)	3,373	0.45	3.4	5,161
(6-19)	1,477	0.63	3.4	3,164
(≥20)	291	0.81	3.4	801
	5,141			9,126

Total Hours = Col.(b) x Col.(c) x Col.(d)

§ 46.6 Annual Burden Costs - Supervisor Training Time for Newly-Hired Experienced Miner Training

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	5,161	$36	$185,785
(6-19)	3,164	$36	$113,894
(≥20)	801	$36	$28,851
			$328,530

Total Costs = Col.(b) x Col.(c)

§ 46.7 Before performing a regularly-assigned task for which the miner has no previous experience, the operator must train the miner in safety and health aspects and safe work procedures of the task. The burden imposed on mine operators is for the time the mine supervisor needs to prepare for the training.

The mines affected by this provision for each size category are: 3,373 mines that employ 5 or fewer workers; 1,477 mines that employ between 6 and 19 workers; and 291 mines that employ 20 or more workers. Annually, MSHA estimates that, for each mine, a mine supervisor, earning $36 per hour, will require 0.25 hours to prepare for the regularly-assigned task training.

§ 46.7 Annual Burden Hours - Supervisor Preparation for Regularly-Assigned Task Training

(a) Mine Size	(b) Mines	(c) Superv. Time (per hr.)	(d) Total Hours
(1-5)	3,373	0.25	843
(6-19)	1,477	0.25	369
(>20)	291	0.25	73
	5,141		1,285

Total Hours = Col.(b) x Col.(c)

§ 46.7 Annual Burden Costs - Supervisor Preparation for Regularly-Assigned Task Training

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	843	$36	$30,357
(6-19)	369	$36	$13,293
(>20)	73	$36	$2,619
			$46,269

Total Costs = Col.(b) x Col.(c)

§ 46.7 Continued In addition to preparing for regularly-assigned training, there is also a paperwork burden attributable to the time it takes the mine supervisor to provide such task training.

With respect to each size category, the average number of (composite) training sessions that the mine supervisor will give annually per mine will be: 1.53 sessions for mines that employ 5 or fewer workers; 7.82 sessions for mines that employ between 6 and 19 workers; and 40.16 sessions for mines that employ 20 or more workers. On average, each training session is estimated to last 0.6 hours. A mine supervisor earns $36 per hour.

§ 46.7 Annual Burden Hours - Supervisor Training Time for Regularly-Assigned Task Training

(a) Mine Size	(b) Mines	(c) #of Mine Sessions (per mine)	(d) Superv. Time (per hr.)	(e) Total Hours
(1-5)	3,373	1.53	0.6	3,096
(6-19)	1,477	7.82	0.6	6,930
(≥20)	291	40.16	0.6	7,012
	5,141			17,038

Total Hours = Col.(b) x Col.(c) x Col.(d)

§ 46.7 Annual Burden Costs - Supervisor Training Time for Regularly-Assigned Task Training

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	3,096	$36	$111,471
(6-19)	6,930	$36	$249,483
(≥20)	7,012	$36	$252,430
			$613,384

Total Costs = Col.(b) x Col.(c)

§ 46.7 Continued Before performing a new one-time task for which the miner has no previous experience, the operator must train the miner in safety and health aspects and safe work procedures of the task. The burden imposed on mine operators is for the time the mine supervisor needs to prepare for the training.

The mines affected by this provision for each size category are: 5,602 mines that employ 5 or fewer workers; 3,667 mines that employ between 6 and 19 workers; and 1,426 mines that employ 20 or more workers. Annually, MSHA estimates that, for each mine, a mine supervisor, earning $36 per hour, will require 0.08 hours to prepare for the new one-time task training.

§ 46.7 Annual Burden Hours - Supervisor Preparation for New One-Time Assigned Task Training

(a) Mine Size	(b) Mines	(c) Superv. Time (per hr.)	(d) Total Hours
(1-5)	5,602	0.08	448
(6-19)	3,667	0.08	293
(≥20)	1,426	0.08	114
	10,695		856

Total Hours = Col.(b) x Col.(c)

§ 46.7 Annual Burden Costs - Supervisor Preparation for New One-Time Task Training

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	448	$36	$16,134
(6-19)	293	$36	$10,561
(≥20)	114	$36	$4,107
			$30,802

Total Costs = Col.(b) x Col.(c)

§ 46.7 Continued In addition to preparing for new one-time training, there is also a paperwork burden attributable to the time it takes the mine supervisor to provide such task training.

With respect to each size category, the average number of (composite) training sessions that the mine supervisor will give annually per mine will be: 1.53 sessions for mines that employ 5 or fewer workers; 7.82 sessions for mines that employ between 6 and 19 workers; and 40.30 sessions for mines that employ 20 or more workers. On average, each training session is estimated to last 0.2 hours. A mine supervisor earns $36 per hour.

§ 46.7 Annual Burden Hours - Supervisor Training Time for New One-Time Task Training

(a) Mine Size	(b) Mines	(c) #of Mine Sessions (per mine)	(d) Superv. Time (per hr.)	(e) Total Hours
(1-5)	5,602	1.53	0.2	1,714
(6-19)	3,667	7.82	0.2	5,735
(≥20)	1,426	40.3	0.2	11,494
	10,695			18,943

Total Hours = Col.(b) x Col.(c) x Col.(d)

§ 46.7 Annual Burden Costs - Supervisor Training Time for New One-Time Task Training

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	1,714	$36	$61,712
(6-19)	5,735	$36	$206,467
(≥20)	11,494	$36	$413,768
			$681,947

Total Costs = Col.(b) x Col.(c)

§ 46.8 At least once every 12 months, each mine operator must provide each miner with annual refresher training. The burden imposed on mine operators is for the time the mine supervisor requires to prepare for the training.

The mines affected by this provision for each size category are: 3,373 mines that employ 5 or fewer workers; 1,477 mines that employ between 6 and 19 workers; and 291 mines that employ 20 or more workers. Annually, MSHA estimates that, for each mine, a mine supervisor, earning $36 per hour, will require 3 hours to prepare for the task training.

§ 46.8 Annual Burden Hours
Supervisor Preparation for Annual Refresher Training

(a) Mine Size	(b) Mines	(c) Superv. Time (per hr.)	(d) Total Hours
(1-5)	3,373	3	10,119
(6-19)	1,477	3	4,431
(≥20)	291	3	873
	5,141		15,423

Total Hours = Col.(b) x Col.(c)

§ 46.8 Annual Burden Costs
Supervisor Preparation for Annual Refresher Training

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	10,119	$36	$364,284
(6-19)	4,431	$36	$159,516
(≥20)	873	$36	$31,428
			$555,228

Total Costs = Col.(b) x Col.(c)

§ 46.8 Continued In addition to preparing for annual refresher training, there is also a paperwork burden attributable to the time it takes the mine supervisor to provide the training.

With respect to each size category, the average number of training sessions that the mine supervisor will give annually per mine will be: 0.92 sessions for mines that employ 5 or fewer workers; 0.94 sessions for mines that employ between 6 and 19 workers; and 2.01 sessions for mines that employ 20 or more workers. On average, each training session is estimated to last 8 hours. A mine supervisor earns $36 per hour.

§ 46.8 Annual Burden Hours
Supervisor Training Time for Annual Refresher Training

(a) Mine Size	(b) Mines	(c) # of Mine Sessions (per mine)	(d) Superv. Time (per hr.)	(e) Total Hours
(1-5)	3,373	0.92	8	24,825
(6-19)	1,477	0.94	8	11,107
(≥20)	291	2.01	8	4,679
	5,141			40,612

Total Hours = Col.(b) x Col.(c) x Col.(d)

§ 46.8 Annual Burden Costs
Supervisor Training Time for Annual Refresher Training

(a) Mine Size	(b) Total Hours	(c) Superv. Wage (per hr.)	(d) Total Annual Costs
(1-5)	24,825	$36	$893,710
(6-19)	11,107	$36	$399,853
(≥20)	4,679	$36	$168,454
			$1,462,018

Total Costs = Col.(b) x Col.(c)

§ 46.9 Records have to be maintained for training required by the rule under §§ 46.5(a), 46.6, 46.7, and 46.8. Under paragraph (a), a mine supervisor is required to record and certify the record. For all records, MSHA estimates that it will take a mine supervisor, earning $36 per hour, 0.05 hours to record and certify each miner's training record. MSHA estimates, in addition, that it will take a clerical worker, earning $17 per hour, 0.05 hours to prepare, copy, and distribute the certificate.

The paperwork burden hours and costs for recordkeeping concerning the aforementioned provisions appear below.

§ 46.9 Annual Burden Hours
Records for 46.5(a) New Miner Training

(a)	(b)	(c)	(d)	(e)	(f)	(e)
Mine Size	No. of Training Programs	Superv. Time (per hr.)	Total Hrs. for Superv. Duties	Clerical Time (per hr.)	Total Hrs. for Clerical Duties	Total Hrs. (d+f)
(1-5)	1,543	0.05	77.15	0.05	77.15	154.30
(6-19)	1,889	0.05	94.45	0.05	94.45	188.90
(≥20)	956	0.05	47.80	0.05	47.8	95.60
	4,388		219.40		219.4	438.80

Total Hrs. for Superv. Duties = Col.(b) x Col.(c)
Total Hrs. for Clerical Duties = Col.(b) x Col.(e)

§ 46.9 Annual Burden Costs
Records for 46.5(a) New Miner Training

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Mine Size	Total Hrs. for Superv. Duties	Superv. Wage (per hr.)	Costs for Superv. Duties	Total Hrs. for Clerical Duties	Clerical Wage (per hr.)	Costs for Clerical Duties	Total Hours	Total Annual Costs
(1-5)	77.15	$36	$2,777	77.15	$17	$1,312	154	$4,089
(6-19)	94.45	$36	$3,400	94.45	$17	$1,606	189	$5,006
(≥20)	47.80	$36	$1,721	47.80	$17	$813	96	$2,533
			$7,898			$3,730	439	$11,628

Total Costs for Superv. Duties = Col.(b) x Col.(c)
Total Costs for Clerical Duties = Col.(e) x Col.(f)
Total Hours = Col.(b) + Col.(e)
Total Annual Costs = Col.(d) + Col.(g)

§ 46.9 Continued

§ 46.9 Annual Burden Hours
Records for 46.6 Newly-Hired Experienced Miner Training

(a)	(b)	(c)	(d)	(e)	(f)	(e)
Mine Size	No. of Training Programs	Superv. Time (per hr.)	Total Hrs. for Superv. Duties	Clerical Time (per hr.)	Total Hrs. for Clerical Duties	Total Hrs. (d+f)
(1-5)	1,522	0.05	76.10	0.05	76.1	152.20
(6-19)	1,868	0.05	93.40	0.05	93.4	186.80
(≥20)	946	0.05	47.30	0.05	47.3	94.60
	4,336		216.80		216.8	433.60

Total Hrs. for Superv. Duties = Col.(b) x Col.(c)
Total Hrs. for Clerical Duties = Col.(b) x Col.(e)

§ 46.9 Annual Burden Costs
Records for 46.6 Newly-Hired Experienced Miner Training

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Mine Size	Total Hrs. for Superv. Duties	Superv. Wage (per hr.)	Costs for Superv. Duties	Total Hrs. for Clerical Duties	Clerical Wage (per hr.)	Costs for Clerical Duties	Total Hours	Total Annual Costs
(1-5)	76.10	$36	$2,740	76.10	$17	$1,294	152	$4,033
(6-19)	93.40	$36	$3,362	93.40	$17	$1,588	187	$4,950
(≥20)	47.30	$36	$1,703	47.30	$17	$804	95	$2,507
			$7,805			$3,686	434	$11,490

Total Costs for Superv. Duties = Col.(b) x Col.(c)
Total Costs for Clerical Duties = Col.(e) x Col.(f)
Total Hours = Col.(b) + Col.(e)
Total Annual Costs = Col.(d) + Col.(g)

§ 46.9 Continued

§ 46.9 Annual Burden Hours
Records for 46.7 Task Training

(a)	(b)	(c)	(d)	(e)	(f)	(e)
Mine Size	No. of Training Programs	Superv. Time (per hr.)	Total Hrs. for Superv. Duties	Clerical Time (per hr.)	Total Hrs. for Clerical Duties	Total Hrs. (d+f)
(1-5)	6,171	0.05	308.55	0.05	308.55	617.10
(6-19)	13,847	0.05	692.35	0.05	692.35	1384.70
(≥20)	14,022	0.05	701.10	0.05	701.10	1402.20
	34,040		1702.00		1,702.00	3,404.00

Total Hrs. for Superv. Duties = Col.(b) x Col.(c)
Total Hrs. for Clerical Duties = Col.(b) x Col.(e)

§ 46.9 Annual Burden Costs
Records for 46.7 Task Training

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Mine Size	Total Hrs. for Superv. Duties	Superv. Wage (per hr.)	Costs for Superv. Duties	Total Hrs. for Clerical Duties	Clerical Wage (per hr.)	Costs for Clerical Duties	Total Hours	Total Annual Costs
(1-5)	308.55	$36	$11,108	308.55	$17	$5,245	617	$16,353
(6-19)	692.35	$36	$24,925	692.35	$17	$11,770	1,385	$36,695
(≥20)	701.10	$36	$25,240	701.10	$17	$11,919	1,402	$37,158
			$61,272			$28,934	3,404	$90,206

Total Costs for Superv. Duties = Col.(b) x Col.(c)
Total Costs for Clerical Duties = Col.(e) x Col.(f)
Total Hours = Col.(b) + Col.(e)
Total Annual Costs = Col.(d) + Col.(g)

§ 46.9 Continued

§ 46.9 Annual Burden Hours
Records for 46.8 Annual Refresher Miner Training

(a)	(b)	(c)	(d)	(e)	(f)	(e)
Mine Size	No. of Training Programs	Superv. Time (per hr.)	Total Hrs. for Superv. Duties	Clerical Time (per hr.)	Total Hrs. for Clerical Duties	Total Hrs. (d+f)
(1-5)	6,171	0.05	308.55	0.05	308.55	617.10
(6-19)	13,847	0.05	692.35	0.05	692.35	1384.70
(≥20)	14,022	0.05	701.10	0.05	701.10	1402.20
	34,040		1702.00		1,702.00	3,404.00

Total Hrs. for Superv. Duties = Col.(b) x Col.(c)
Total Hrs. for Clerical Duties = Col.(b) x Col.(e)

§ 46.9 Annual Burden Costs
Records for 46.8 Annual Refresher Miner Training

(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
Mine Size	Total Hrs. for Superv. Duties	Superv. Wage (per hr.)	Costs for Superv. Duties	Total Hrs. for Clerical Duties	Clerical Wage (per hr.)	Costs for Clerical Duties	Total Hours	Total Annual Costs
(1-5)	308.55	$36	$11,108	308.55	$17	$5,245	617	$16,353
(6-19)	692.35	$36	$24,925	692.35	$17	$11,770	1,385	$36,695
(≥20)	701.10	$36	$25,240	701.10	$17	$11,919	1,402	$37,158
			$61,272			$28,934	3,404	$90,206

Total Costs for Superv. Duties = Col.(b) x Col.(c)
Total Costs for Clerical Duties = Col.(e) x Col.(f)
Total Hours = Col.(b) + Col.(e)
Total Annual Costs = Col.(d) + Col.(g)

§ 46.11 Each operator must provide site-specific hazard awareness training to any worker who is not a miner. A miner, earning $23 per hour, will require 0.15 hours, on average, to provide the hazard awareness training. The annual number of non-miners to be trained in each mine size category are: 50 non-miners in each of the 3,373 mines that employs 5 or fewer workers; 100 non-miners in each of the 1,477 mines that employs between 6 and 19 workers; and 200 non-miners in each of the 291 mines that employs 20 or more workers. No record is required for this type of training.

§ 46.11 Annual Burden Hours
Miner Training Time for Hazard Awareness Training

(a) Mine Size	(b) Mines	(c) non-Miners Trained (per mine)	(d) Miner Time (per hr.)	(e) Total Hours
(1-5)	3,373	50	0.15	25,298
(6-19)	1,477	100	0.15	22,155
(≥20)	291	200	0.15	8,730
	5,141			56,183

Total Hours = Col.(b) x Col.(c) x Col.(d)

§ 46.11 Annual Burden Costs
Miner Training Time for Hazard Awareness Training

(a) Mine Size	(b) Total Hours	(c) Miner Wage (per hr.)	(d) Total Annual Costs
(1-5)	25,298	$23	$581,843
(6-19)	22,155	$23	$509,565
(≥20)	8,730	$23	$200,790
			$1,292,198

Total Costs = Col.(b) x Col.(c)

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