1Mining Industry and Workforce Survey (MIWS)

Request for Office of Management and Budget (OMB) Review and Approval

Information Collection Request (ICR)

Section A

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- The National Institute for Occupational Safety and Health (NIOSH) Office of Mine Safety and Health Research (OMSHR) Pittsburgh Mining Research Division (PMRD) is planning to conduct the Mining Industry and Workforce Survey (MIWS). The major objectives of the survey—to be conducted in the stone/sand and gravel mining sector, the metal/nonmetal mining sector, and the coal mining sector—will be to utilize and complement existing data sources by collecting updated estimates and by filling existing data gaps to inform worker safety recommendations. NIOSH will collect basic information about mines; establish the demographic and occupational characteristics of mine employees; and estimate the number and occupational characteristics of independent contractor employees.
- The intended use of the data will be to: monitor changes and emerging trends; provide current data to guide research and training activities; provide updated demographic and occupational data for the mining workforce; and provide denominator data to help NIOSH understand the risk of work-related injuries, disease, and fatalities. This information is vital to the NIOSH mission to protect the safety and health of the mining workforce.
- Data will be collected using a probability survey where mines will be stratified by the number of employees. Mines within the same stratum will have an equal probability of selection.
- The population to be surveyed will be U.S. mines and their employees.
- The data will be analyzed using a statistical package that supports the analysis of data from complex sample surveys. The survey data will be used to generate frequencies, percentages, and denominator data. Generalized estimating equations (GEE) procedures will be used for linear and logistic regression models.

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Attachments

11A. Justification

A.1 Circumstances Making the Collection of Information Necessary

This is a New Information Collection Request (ICR). The requested approval time is three years. For the Mining Industry and Workforce Survey (MIWS), data will be collected through surveys conducted in consultation with national mining associations in the following mining sectors: the stone/sand and gravel mining sector, the metal/nonmetal mining sector, and the coal mining sector. Each sector will be surveyed only one time during the three year data collection period. This MIWS request would become the third in a series of past surveys of the mining industry (the most recent was conducted in 2008 – OMB Control No. 0920-0754).

Surveillance of occupational injuries, illnesses, and exposures has been an integral part of the work of NIOSH since its creation by the Occupational Safety and Health Act in 1970. Surveillance activities at the Office of Mine Safety and Health Research (OMSHR) in Pittsburgh, Pennsylvania, a division of NIOSH, are focused on the nation's mining workforce. The Federal Mine Safety & Health Act of 1977, Section 501, enables NIOSH to carry out research relevant to the health and safety of workers in the mining industry **(Attachment A)**. The 60-day Federal Register Notice was published on December 17, 2015 (**Attachment B**).

In reviewing the available data, NIOSH has determined that more current surveillance data on mines and mine employees is vital to its mission to protect the safety and health of the mining workforce. The MIWS will be a unique and complementary source of information on U.S. mines and their employees. Its purpose will be to: (1) track changes and emerging trends by comparing with prior surveys; (2) provide current data to guide OMSHR research on reducing risk through hazard control interventions and improved miner training; (3) provide updated demographic and occupational data for the mining workforce; and (4) provide estimates of denominator data to help NIOSH understand the risk of work-related injuries, disease, and fatalities in specific demographic and occupational subgroups (described further below). The MIWS is designed to provide such estimates, and the MIWS data will maximize the utility of records already required under 30 CFR Part 50. This part requires mine operators to file reports to the Mine Safety and Health Administration (MSHA) pertaining to accidents, occupational injuries, and occupational illnesses as well as employment and coal production.

Due to MSHA reporting requirements for contractors (more fully described below), it is currently not possible to assign contractor hours to the individual mining operations where they worked. NIOSH needs a better understanding of the safety record of this important segment of the mining industry in order to determine whether contractors are more at risk of injuries in individual mines than are mine operator employees. The data collected with the MIWS will be a first step to determine the current number of contractor employees working in metal, nonmetal, stone, or sand and gravel mines, and the type of work they perform. This new information may lead to a decision to prepare a future survey of the mine contractor industry.

The MIWS is also desirable because available sources of information are out of date or incomplete for each of the proposed mining sectors. As a strength, the MIWS will sample and survey each of the three mining sectors as a unit of analysis to arrive at sector-specific estimates. A description of the existing data and information gaps addressed by the MIWS follows.

A.2 Purpose and Use of Information Collection

There has been a renewed focus on mine safety and training issues in response to disasters at the Sago Mine (January 2006), the Darby Mine No. 1 (June 2006), the Crandall Canyon Mine (August 2007) and, more recently, the Upper Big Branch Mine-South (April 2010).

The high rates of fatalities, injuries, and illnesses in the mining industry call for solutions guided by a surveillance program that identifies the greatest hazards and tracks impact on reducing the hazards. NIOSH will use the MIWS to provide timely information to an industry where workers are at high risk. The most important objective of the MIWS will be to estimate denominator data so that existing health and safety reports can be evaluated in relation to the population and specific subpopulations at risk. Incidence rate data of this type is currently not available from existing reporting systems.

The survey will also determine the quantity of contract labor that mine operators use (overall and by major mining sector) and the type of work performed. Since 1986, the use of contract laborers has become commonplace in mines. These laborers may be specialists in a particular field or they may be temporary workers brought in to supplement the existing labor force. Contractors are required to report aggregate employment data under two categories (all coal locations, and all metal, nonmetal, stone, and sand and gravel locations), rather than for the individual mines where their employees worked during a particular quarter.

The following discussion of prior surveys and ongoing required reporting from mining sectors will explain the purpose and the utility of the MIWS to fill data gaps and to update necessary data. This collection will allow NIOSH to complement the data on hand to inform mining health and safety recommendations and recommend ways to reduce health and safety risks within specific mining sectors. The MIWS is designed to adapt this required data reporting to estimate risks.

Background on Prior Surveys

Mining Industry Population Survey (MIPS)

In 1986, the Bureau of Mines, U.S. Department of the Interior, conducted the Mining Industry Population Survey (MIPS) (OMB Control No. 1219-0096, Expiration Date 09/30/1986), the first survey collecting mine-level information about the characteristics of mine workers [Butani and Bartholomew 1988a 1988b]. By the 2000s, demographic changes in the mining workforce and the ever increasing use of independent contractors made the 1986 MIPS too outdated for anything other than historical use.

National Survey of the Mining Population (NSMP)
In 2008, NIOSH conducted the National Survey of the Mining Population (OMB Control No. 0920-0754, Expiration Date 10/31/2010) [McWilliams, Lenart, Lancaster and Zeiner 2012a 2012b], the first comprehensive survey of the U.S. mining industry in more than 20 years. Unlike the MIPS, the NSMP was designed to collect data at the mine level, as well as at the employee level. Randomly selected mining operations in all of the major mining sectors (coal, metal, nonmetal, stone, and sand and gravel) received the survey and had the option of completing a paper or web-based questionnaire. The data from this survey has allowed OMSHR to obtain valuable information about mining operations (e.g., miner training, work schedules, safety and rescue measures); to establish demographic and occupational characteristics of mine operator employees; to estimate the number and type of independent contractor employees used by mining operations; and to produce denominator data to calculate injury rates for various demographic and occupational subgroups. For example, OMSHR knows the number of electricians reported as injured in mine accidents, but prior to the NSMP there was no information regarding the total number of electricians employed in the mining industry. Consequently, injury rates for electricians could not be computed. The calculation of rates provides a way to standardize the injury data to allow comparisons among occupational and demographic groups so that the impact of future research priorities and interventions are evidence-based and meaningful.

The NSMP made clear the importance of having surveys to capture the current data that NIOSH needs to monitor safety and health issues for the nation's mines and to respond effectively to changes in mining practices and workforce composition. The MIWS is proposed to update and fill this information need.

Existing Sources of Current Industry Information and Their Limitations
The NIOSH Mining Program maintains mining surveillance activities that make extensive use of data from a number of different national databases. Even though these databases are currently being used for surveillance of the mining population, they are not fully able to meet the surveillance requirements for the mining industry.

1The most frequently used databases are those maintained by MSHA. Both mine operator and contractor information is released to the public as preliminary quarterly and final annual basis data, and is available for downloading on the MSHA website (http://www.msha.gov/). MSHA collects information about, and maintains several mining safety and health databases on reported employment, accidents/injuries/illnesses, hazardous exposures, coal production, mine inspections, violations and citations, etc. Two of the most commonly used databases are the mine operator and contractor address/employment files and the file listing reports of accidents, injuries, and illnesses.

Analysis of data from the existing MSHA employment and accident/injury/illness databases has been able to meet some, but not all, of the NIOSH surveillance needs. As one example, to identify subpopulations in each mining sector or type of mine at risk of adverse health and safety outcomes, NIOSH needs the capability to calculate demographic and occupation-specific

rates of injury, fatalities, and disease. The ability to do so on an ongoing basis, however, does not currently exist because MSHA data on age, gender, and occupation are available only for injured or ill workers but not for the entire mining workforce. The MIWS is proposed to fill this data need.

MSHA Quarterly Mine Employment and Coal Production Report
Under 30 CFR Part 50, mine operators and independent contractors (whose employees perform certain types of work on mine property) are required to file a *Quarterly Mine Employment and Coal Production Report (MSHA Form 7000-2*; OMB Control Number 1219-0007; Approval Expires September 30, 2017*)* **(Attachment C)**. In addition to the number of clean tons of coal produced (coal mines only), this report requests both the total number of employee hours worked and the average number of employees working within each valid operational subunit[1] associated with the mining establishment. Each mining establishment is uniquely identified by its MSHA-assigned Mine ID number. Quarterly mine employment is collected for each subunit of the mine, which allows for accident rates to be computed by mine or by work location within the mine and for aggregates of these two variables.

1In addition to the quarterly employment information reported—i.e., total hours worked, average number of workers, and short tons of clean coal produced—the following outlines information from the MSHA reports:

- The address/employment file for mine operators includes location and descriptive information, including the controlling company (owner), mine operator, mine name, state and county locations, operational status, mailing address, and Standard Industrial Classification (SIC) code of the establishment.

- The additional information provided by contractor companies is limited to the contractor company name, operational status (active or inactive), mailing address, and whether the reported employment is for coal or metal/nonmetal[2] (MNM) mines.
    - 1In the case of contractor companies, employment is also reported for each operational subunit for which employees worked. However, this employment may have occurred at multiple mining establishments and thus it is not possible to determine the number of contractor employees working at each specific mine.
    - Independent contractor companies are required to file a maximum of two reports for each quarter, one for employment across coal mines and another for employment across MNM operations. These independent contractor companies are uniquely identified by an MSHA-assigned Contractor ID number.

[1] Underground areas; surface areas at underground mines; strip mines, open pit mines, or quarries; auger operations (coal mine only); culm banks or refuse piles (coal mine only); dredging operations; other surface mining (metal/nonmetal mines only); independent shops/yards; preparation plants or mills; office locations.
[2] Includes metal, nonmetal, stone, and sand and gravel mines.

The MIWS is designed to provide estimates on work schedules and shift work for mine operator employees, including production workers, production support workers, and prep plant/mill workers. Importantly, this information is not currently collected by MSHA. Estimates of the extent of the total hours per shift and the use of rotating shifts (clockwise, counterclockwise) is vital to the NIOSH mission to protect the safety and health of mine workers. In addition, the MIWS will fill another data gap with regard to mine contractor employees. Information will be collected on the use of contract labor, the type of work performed, the mining subunit where this work is performed (e.g., underground, surface), and estimates of the number of contractor employees and their hours **(Attachment D).** This information is currently unavailable in a form that is broken down by metal, nonmetal, stone, and sand and gravel mines. NIOSH will use these data as part of its effort to monitor the safety and health of mine contractor employees**.**

MSHA Mine Accident, Injury, and Illness Report
Under 30 CFR Part 50, mine operators and independent contractors whose employees perform certain types of work on mine property are required to file a *Mine Accident, Injury, and Illness Report (MSHA Form 7000-1;* OMB Control Number 1219-0007; Approval Expires September 30, 2017*)* **(Attachment E)** which reports data for injured and ill miners.[3]

Information requested on *MSHA Form 7000-1* includes the Mine ID and the operational subunit where the incident occurred (underground, surface, plant/mill). The form also documents whether the affected employee is a regular employee or a contractor employee, and the Contractor ID if the incident involved an independent contractor worker. Also requested is information about the individual involved in the incident such as the injured worker's birth date, gender, job title, years of experience in the current job title, at that mine, and overall, other mines where the victim was employed, resultant days away from work and/or days of restricted work activity, the source of the injury, body part(s) injured, and a narrative description of the incident.

Despite this documentation on injured and ill miners, data on all mine employees by age, gender, job title, and experience are not collected. Consequently, the accident data cannot be fully exploited to study the employee-level correlates of mining accidents. The MIWS will collect employee-level demographic data. These data will be used by NIOSH to create the estimated denominator data needed to construct accident rates for various demographic and occupational groups that reflect the population at risk **(Attachment D)**, including mining occupation, mining experience, primary work location, gender, and age. This vital information will allow NIOSH to target research efforts to subgroups of the mining workforce most affected by safety and health challenges.

Summary of the Value in Conducting an Updated Survey
In summary, because the mining industry continues to experience many changes in its workforce, work practices, and the use of contract labor, there is a need to conduct an updated

[3] For certain serious accidents and events (e.g., fatalities), mine operators are required to notify MSHA immediately; for other reportable incidents, notification is required within 10 working days after the accident or injury, or 10 working days following the illness diagnosis.

survey. The MIWS in the three mining sectors that align with categories used by national mining associations: (1) stone and sand and gravel mines, (2) metal and nonmetal mines, and (3) coal mines will obtain up-to-date, appropriate, and accurate demographic and other job-related characteristics of the U.S. mining workforce. The proposed survey will collect data at both the mine and employee levels. Also, the MIWS is designed to adapt required data reported to MSHA to estimate risks.

A.3 Use of Improved Information Technology and Burden Reduction

NIOSH conducted a pilot study (OMB Control No. 0920-0633, Expiration March 31, 2005) to evaluate the recruitment materials, questionnaire, and survey procedures developed for the NSMP. In 2008, NIOSH conducted the NSMP main survey. Both NSMP data collections provided input into the MIWS. This allowed NIOSH to explore the feasibility of reducing respondent burden associated with completing the paper version of the questionnaire, providing telephone and on-line support for the survey (especially the employee sampling task), and further developing a web-based version of the questionnaire.

The majority of respondents to the NSMP indicated that an internet connection was available at their mine and more than 50% reported preferring an electronic response option. Thus, for the MIWS, a web-based survey (**Attachment F**) will be available. Additional changes to reduce burden based on prior NSMP experience are: 1) fewer mines being selected from companies with multiple mines, 2) an abbreviated mine-level questionnaire, 3) simplified employee sampling instructions, 4) sampling support by telephone and on-line, 5) fewer employees sampled, and 6) employee demographic questions that can be answered from one data system (e.g., payroll). The estimated time burden attributed to electronic reporting is 75% of the total time burden for 50% of the total number of respondents per year.

In the case of the MIWS, an important component to reducing burden is restricting sample size. It should be noted that one respondent, the mine representative, will complete and report both the mine-level and the employee-level data. 1The number of mines sampled per mining sector is variable, but the sample size of employee records per mine is restricted to no more than 10 employees for mines with less than 50 employees. For mines with 50 or more employees, the sample size per mine is restricted to no more than 15 employees. Based on NIOSH experience in the 2008 NSMP, about 25 employees were sampled per mine which increased the burden on the mine representative and led to lower response rates; therefore, 10 and sometimes 15 employee-level records are proposed per mine for the MIWS to increase the likelihood of improved response rates while reducing the time burden per mine. Reducing the number to 10 or at most 15 employees drives the desired 40% response rate. More detail on design effects can be found in the tables in **Attachment G**.

The 2008 NSMP was conducted in March through August of 2008, with 737 mines completing the questionnaires and reporting data for 9,008 employees. The overall weighted response rate for this survey was 36.7% with the lowest response rate for coal mines (25.8%) and the highest for nonmetal mines (48.8%). For the MIWS, approximately 1,075 stone, sand and gravel mines;

697 metal and nonmetal mines; and 644 coal mines will be sent a survey packet. Based on the response rate achieved in the NSMP, NIOSH is anticipating an overall minimum 40% response rate for the MIWS.

A.4 Efforts to Identify Duplication and Use of Similar Information

The two previous surveys of the mining population are too old to be of use today except for historical comparisons. 1The purpose of the first survey, the Mining Industry Population Survey in 1986, was to collect information about the entire mining workforce to identify high-risk groups of workers and determine mine employee characteristics. The mining industry has experienced many changes in the last 29 years; consequently, the MIPS data are no longer representative of the current mining industry labor force. For instance, independent contractor employees were not covered by the MIPS.

The purpose of the 2008 National Survey of the Mining Population was to provide updated demographic and occupational information on the mining workforce. The survey collected information from each of the five major mining sectors (i.e., coal, metal, nonmetal, stone, and sand and gravel). The survey's main objectives were to: collect basic information about mines; establish the demographic and occupational characteristics of mine operator employees; and estimate the number of independent contractor employees used by mines. The mine questions included items such as training, work schedules, shift work, communication and safety systems, and the mine's use of independent contractor employees. The employee questions included demographic and occupational questions about individual employees. The survey's employee-level data were used by OMSHR to determine the accident rates for various demographic and occupational categories as well as to provide information used to improve the safety and health of miners. Although these data proved to be useful, they have become seriously dated given the amount of change in the industry, including the aging population, inexperience of replacements, increased use of contractors, and more sophisticated safety tools and equipment.

1The Current Population Survey (CPS) is a stratified sample survey of the civilian non-institutional population, age 16 and older. The CPS is administered by the Bureau of Labor Statistics (BLS), United States Department of Labor. The final monthly sample size is approximately 50,000 households. This survey is the primary source of information on the labor force characteristics of the U.S. population. Importantly, the CPS is a general labor force survey and is not designed to provide a representative sample of mine workers. In addition, NIOSH requires information about the miner's work location, job title, and mining experience for effective data collection. Further, the coding of the CPS data does not allow for the differentiation of underground versus surface workers, nor can one differentiate mine operator employees from independent contractor employees working on mine property. Under NAICS, these workers will still be captured under Transportation and Manufacturing. In another national survey, Census 2010, occupation is coded using the Standard Occupational Classification (SOC) scheme, which is limited in terms of its specificity for mining occupations.

NIOSH will consult with OSHA, and then approach the Census Bureau and BLS to seek ways to leverage the CPS to better address combined OSHA and NIOSH data needs, including miner's work location, job title, and mining experience, differentiation of underground versus surface workers, differentiation of mine operator employees from independent contractor employees, and inclusion of non-miners such as administrative staff in the CPS mining category. In consultation, BLS will be able to compare how NIOSH captures many workers excluded from mining under CPS, including workers in haulage and processing facilities.

NIOSH will also seek consultation with SOC and NAICS staff to better align U.S. Census estimates of certain mining sectors relative to MHSA methods using the Standard Industry Classification (SIC). A notable example of differences in industry coding methodology are for personnel in mine haulage or working in processing facilities. Under NAICS, these workers are captured under Transportation and Manufacturing while the U.S. Census uses the SOC scheme which is non-specific for mining occupations. These conversations will include OSHA so that unified requests can be developed.

Improving estimates from CPS and other Census products should reduce the need to conduct future surveys, thus reducing burden on industry and increasing the quality of data.
1In summary, the 1986 MIPS and the 2008 NSMP are now too outdated to be considered useful for surveillance on the current mining workforce. Neither the CPS nor the Census 2010 differentiates between underground and surface workers, and only a limited number of mining occupations are specifically coded. The use of CPS employment estimates for the mining industry provides different coverage, compared to the data collected by MSHA, for certain specific sectors, work locations, and work activities. Due to the lack of up-to-date, appropriate, and accurate information for mine operator and independent contractor employees, it is important that a well-designed national survey be undertaken that will provide demographic and occupational information for the mining population consistent with the population reported to MSHA.

A.5 Impact on Small Businesses or Other Small Entities

Small mines will be included in the MIWS. As shown in Table A.5.1, sand and gravel mines tend to be the smallest with an average mine size of five employees. Small mines will be asked to complete the mine-level and employee-level portions of the questionnaire. However, the burden will be minimized for small mines because they will report data for fewer employees than the survey average of 10 employees per mine, and will not have to sample from their employee roster.

1**Table A.5.1. Summary of mine-level characteristics by sector (Source: MSHA 2014)**

Mine-level characteristics	Sector					Total
	Coal	Metal	Nonmetal	Stone	Sand and Gravel	

Number of mines	1,632	345	911	4,350	6,366	13,604
Number of employees	77,462	44,838	26,356	65,682	34,361	248,699
Average employment size	48	130	29	15	5	18

A1.6 Consequences of Collecting the Information Less Frequently

NIOSH plans to partition mines into three subgroups with stone, sand and gravel; metal and nonmetal; and coal mines surveyed only one time. Because the U.S. mining industry and its workforce can undergo changes from year to year (e.g., the closure of coal mines due to market conditions), it is important of have a current survey to capture data that NIOSH needs for monitoring health and safety issues for the nation's mines, and for responding to changes in mining practices and workforce composition.

A.7 Special Circumstances Relating to the Guidelines of 5 CFR 1320.5

No special circumstances from the 5 CFR 1320.5 guidelines apply to this survey. Responding mines will be asked to participate in this survey once over the three-year approval period.

A1.8 Comments in Response to the Federal Register Notice and Efforts to Consult Outside the Agency

A. Federal Register Notice

In accordance with 5 CFR 1320.8(d), a review of the proposed study was sought through a 60-day publication period in the *Federal Register* (12/17/2015, Vol. 80, No. 242, pages 78736-78737) **(Attachment B)**. Public comments were not received in response to the 60-day Federal Register Notice.

B. Consultation Inside/Outside the Agency

NIOSH conducted meetings with stakeholders and obtained feedback which has been used as input in the development of the MIWS. These meetings were conducted over the course of several months in person or via telephone. The stakeholder meetings were held to collect information on the needs for statistical data on the mining population and operational issues that might be encountered during its collection. Prior to conducting the meetings, several items were characterized as discussion points. These included a listing of potential employee and mine-level variables, phases of survey implementation, and stratification categories. With respect to survey variables, stakeholders were asked about the utility of the variables and the feasibility of their collection. Ultimately, it became clear that the stakeholders' data needs required collection of data for two distinct units—mines (e.g., work schedules and safety training) and mine employees (e.g., demographic and occupational variables). This approach allows for the calculation of injury and illness rates for various subgroups.

The following individuals and organizations participated in the stakeholder meetings and consultations:

Agency/Organization	Contact Name	Location/Date of Meeting
NIOSH/Office of Mine Safety and Health Research (OMSHR)	**Jeffery Kohler** Former NIOSH Associate Director for Mining	Pittsburgh, PA June 2014
NIOSH/Office of Mine Safety and Health Research (OMSHR)	**Susan Moore** Former Director, OMSHR Division of Mining Science and Technology 412-386-6613 SMMoore@cdc.gov	Pittsburgh, PA June 2014
Mine Safety and Health Research Advisory Committee (MSHRAC)	**Marie Chovanec** Interface between OMSHR and MSHRAC members 412-386-5302 MChovanec@cdc.gov	Pittsburgh, PA June 8, 2015
National Stone, Sand and Gravel Association (NSSGA)	**Joseph Casper** Vice President, Safety Services, NSSGA 703-526-1074 www.nssga.org	Telephone conferences in July 2015
National Stone, Sand and Gravel Association (NSSGA) Safety and Health Committee	**Joseph Casper** Contact for NSSGA Safety and Health Committee 703-526-1074 www.nssga.org	Washington, DC September 15, 2015
Industrial Mineral Association – North America	**Darrell K. Smith** Executive Vice President Industrial Minerals Association – North America (IMA-NA) National Industrial Sand Association (NISA) International Diatomite Producers Association (IDPA) 2011 Pennsylvania Avenue NW, Suite 301 Washington, DC 20006 Office: 202-457-0200; Cell/Text: 202-701-3865	Telephone conference in November and December 2015
National Mining	**Bruce Watzman**	Telephone

Association	Senior Vice President, National Mining Association	conference in June 2016
Industrial Minerals Association – North America	**Mark Ellis** President Industrial Minerals Association – North America Industrial Minerals Association - North America (IMA-NA) 1200 18th Street NW, Suite 1150 Washington, DC 20036 Phone: (202) 457-0200 | Fax: (202) 457-0287	Telephone conference in June 2016

A1.9 Explanation of Any Payment or Gifts to Respondents

There will be no payment or gift to respondents.

A.10 Protection of the Privacy and Confidentiality of Information Provided by Respondents

This submission has been reviewed by the CIO who determined that the Privacy Act does not apply because NIOSH is not collecting any PII from the sampled mine employees. 1The MIWS is a survey of mines and of their employees. The respondent for both population groups will typically be the mine's operator but it may be delegated to the mine's health and safety director or another staff member. While the full name of the mine's designated respondent will be collected, this individual will be reporting for the mine and for its sampled employees. The name and contact information of the designated respondent for the sampled mine will only be used to facilitate mailing of the survey packet, telephone reminders, and problem resolution. Only the survey contractor and NIOSH project staff will have access to this information.

The mine's designated respondent will be asked to provide demographic and occupational characteristic data for a sample of mine employees working at the sampled mine during the reference quarter. The requested employee-level data should be available in personnel or payroll records. The designated respondent will be asked to create a list of all employees working during the reference quarter and to assign a sequence number to each employee. For mines with less than 50 employees, if 10 or fewer employees worked in the reference quarter, the respondent will be instructed to provide data for all employees. If 11 or more employees worked that quarter, the respondent will be asked to use the sampling instructions to determine which employees to include in the employee-level questionnaire. For mines with 50 or more employees, the respondent will sample up to 15 employees. The designated respondent will record the sequence number but not the name of the sampled employees.

The survey portion dealing with employee information does not have sensitive data—it asks only about the demographics (job title, years of experience, work location, gender, and year of birth) which can be copied from existing company records. 1NIOSH will only be reporting and

publishing aggregated data from this survey. The mine's designated respondent completing the questionnaire will be the only one able to positively link this sequence number with a particular employee.

Data safeguards will be in place to address issues related to identifiable data for both responding mines and their employees. The MSHA mine ID will be on the labels of the hard-copy questionnaire and on the log-in page of the web survey to ensure that reporting is for the correct mine. Completed questionnaires will be kept in an access-restricted area while being processed and stored in a locked file cabinet when not in use. The survey contractor has developed tools and techniques for the exchange of file-based data with outside parties that protect the security and integrity of the data throughout the transfer process. The Secure Transfer Web Site with FTP, a general-use contractor web site, allows data file transfer through a web browser. This site features user authentication based on accounts and passwords, the ability to limit users to upload-only, download only, or bi-directional transfer functions, and the use of data encryption. Data processing will be done in a password-protected computing environment.

The mine ID and employee sequence number will be included in the analysis datasets. The MSHA ID may be needed to interpret the study data and/or to merge data from publicly available MSHA data, such as injury and illness information into the analysis data files. Only NIOSH and contractor project staff will be allowed access to these databases, which will be stored in a safe, secure location. A copy of the contractor confidentiality agreement is provided in **Attachment H**. All contractor employees must comply with this policy, and all project staff have acknowledged the pledge, which is intended to protect project data obtained by the contractor from unauthorized use or disclosure. The provision to protect individual data, and all information arising from surveys concerning individual respondents, applies to both persons and organizations from or about whom information is collected.

A1.11 Institutional Review Board and Justification for Sensitive Questions

IRB Approval

The NIOSH Institutional Review Board (IRB) has determined that the MIWS project is a non-research activity. It meets the definition of public health surveillance non-research per CDC policy dated 07/29/2010. The overall purpose of this surveillance activity is to invoke and help focus public health mechanisms to prevent/control illness and injury among mine workers. The signed NIOSH Research/Non-Research Determination Form can be found in **Attachment I.**

Sensitive Questions

The data collected in this survey will include basic demographic (e.g., age, gender) and occupational characteristics (e.g., job title, work location, experience in this job title, total mining experience) for a subset of the sampled mine's workforce. The potentially sensitive questions of race, ethnicity, and highest level of education will not be asked. The information

sought is not sensitive. This information is already publicly available for injured and ill miners in the MSHA accident/injury/illness database (http://www.msha.gov/).

A.12 Estimates of Annualized Burden Hours and Costs

A. Estimated Annual Burden Hours

The burden estimates were derived in the following manner. A total of seven OMSHR employees completed the MIWS using mine sizes ranging from small to large. In addition, less than 10 contractor staff also provided time estimates for filling out the survey.

Based on the stratification and sample size allocation plan developed for the MIWS using 2016 quarter 2 data 11% of underground stone mines, 16% of surface stone mines, 86% of sand and gravel mines, 40% of underground metal mines, 41% of surface metal mines, 29% of underground nonmetal mines, 56% of surface nonmetal mines, 28% of underground coal mines, and 53% of surface coal mines have fewer than 10 employees. Mines with 10 or fewer employees will not have to do any sampling as they will be asked to provide data for all of their employees. Small mines will require up to 45 minutes to complete the survey. Mines with 11 or more employees will need up to 1.5 hours given their need to generate an employee roster and sample up to 15 of their employees. Thus, NIOSH is estimating that the average annual burden to complete the MIWS mine-level survey will be 1 hour for the hardcopy questionnaire (**Attachment D**) and 45 minutes for the web-based questionnaire (**Attachment F**).

NIOSH estimates that 50% of the sampled mines will choose the web-based questionnaire.

The MIWS will use a telephone script to establish contact with the sampled mines, introduce the survey, determine if the mine is eligible to participate, follow up on survey mailings, and probe for reasons of nonresponse **(Attachment J).** Non-responding mines will be asked to complete the Nonresponse Survey, which consists of only seven questions (**Attachment K**). The Nonresponse Survey consists of questions about why the sample mine chose not to participate in the survey, the employment status of the mine, and suggestions that may help NIOSH maximize participation in future surveys. NIOSH estimates that the burden for the Telephone Script will be 5 minutes and the burden for the brief Nonresponse Survey will be 10 minutes or less.

For annualized estimates, the number of respondents from the sector with the highest number of mines to be approached (n=1,075) are used (stone, sand, and gravel mines) to ensure sufficient burden hours are approved for all three years. The burden data are calculated based on a 40% response rate for the sampled mines (n=430) (**Attachment G**) with 50% completing the hardcopy survey and 50% completing the web-based survey. This does not take into account that some sampled mines may not be eligible to participate in the survey (e.g., inactive, temporarily closed). The burden data are presented in Table A12-A.

Table A.12-A. Estimated Annualized Burden Hours Based on NIOSH Testing and Sample Size Allocation Plan

1Type of Respondents	Form Name	Number of Respondents	Number of Responses per Respondent	Average Burden per Response (in hours)	Total Burden Hours
Responding Mines	MIWS - hardcopy	215 (50%)	1	1	215
	MIWS – web-based	215 (50%)	1	45/60	162
Nonresponding Mines	Phone Script	645	1	5/60	54
Nonresponding Mines	Nonresponse Survey	645	1	10/60	108
OVERALL TOTAL					539

1Note: MIWS = Mining Industry and Workforce Survey

B. Estimated Annual Burden Cost

The estimated burden cost for the mines surveyed in this study is shown in Table A12-B. To compute the burden estimates, NIOSH assumes that the completion of the questionnaire will be done by the health and safety director at the sampled mine. Using data available from the Bureau of Labor Statistics (May 2014), a specialty manager in coal mining earns an average hourly salary of $51.77.

1Table A.12-B. Estimated Annualized Burden Hours

1Respondents	Total Burden Hours	Hourly Wage Rate	Total Respondent Costs
Mine Designated Respondent	539	$51.77	$27,904.00

A.13 Estimates of Other Total Annual Cost Burden to Respondents or Record Keepers

There will be no additional cost burden.

A.14 Annualized Cost to the Government

Contractors have been hired to assist NIOSH with the MIWS. The contractors' total costs for the stone/sand and gravel, metal/nonmetal, and coal surveys is expected to equal $1,192,000. These costs include tasks such as: (1) development of the web questionnaire; (2) validation of

sampled mines; (3) survey packet preparation and mail-out; (4) sample tracking; (5) data receipt and processing; and (6) data entry and delivery. The preparation of the sampling frames, sample selection, and data analysis will be done by a NIOSH Lead Statistician (GS 13/10). Another NIOSH Statistician (GS 13/02) will assist with the statistical analysis and preparation of reports for each mining sector. There will be additional costs to NIOSH (not yet determined) for printing the reports and other publications that NIOSH anticipates preparing after completing the analysis of the data captured in this survey. The total cost for this three-year project will be approximately $1,534,392.00 with an annualized cost of $511,464.00 (Table 14).

1**Table 14. Annualized Cost to the Government**

1	**Effort**	**Hourly Rate**	**Cost**
Contract for Survey	1 year (1 mining sector)		$450,000.00
Lead Statistician (GS-13/10)	.4 FTE	$54.76	$45,560.00
Statistician (GS-13/03)	.2 FTE	$44.93	$18,691.00
TOTAL			$514,251.00

A1.15 Explanation for Program Changes or Adjustments

This is a new data collection

A.16 Plans for Tabulation and Publication and Project Time Schedule

A survey contractor will assist NIOSH with this survey. NIOSH will prepare the sector-specific sampling frames using MSHA mine employment data files. The frames will contain the MSHA mine ID, mine or plant name, and estimated number of employees. Using a probability sampling strategy, NIOSH will select the sample of mines for the study. NIOSH will provide the contact information for the sampled mines. The contractor will verify the contact information and if necessary, obtain updated information using sources such as directories and MSHA district offices. The contractor will be responsible for the development of the web questionnaire, the preparation and mail-out of survey packets, recruitment and follow-up, data verification and entry, the calculation of the sampling weights, and conduct of the nonresponse survey. NIOSH will perform the analysis of the data using a statistical package that supports the analysis of data from complex sample surveys (e.g., SAS, SUDAAN).

NIOSH is planning to publish reports for each mining sector containing the demographic and job characteristics of the miners (e.g., age, gender, job title, years of mining experience) and basic information about the mine (e.g., work schedules, number and occupational characteristics of independent contractor employees used by mines, and safety measures employed by the mines).

The survey data will also be used to calculate denominator data so that reported injuries and illnesses can be evaluated in relation to the population at risk. For example, NIOSH has data on injured and ill roof bolter operators, but has no current information on how many roof bolter operators work in the mining industry; thus their overall injury and illness rates cannot be calculated.

Based on the survey data, NIOSH is also planning to develop a web-based interactive data tool that survey participants will have access to after data collection is complete and national estimates have been calculated. The tool would consist of a form area to make selections of parameters and a display area showing the resulting information based on the selections. The form area would offer a list of predetermined fields that users could choose to provide information about their mine (e.g., size, sector). Upon input or selection of field values the program will display aggregate values in simple charts and figures. For example, the user may want to know the average age of mine employees in mines similar to their mine (e.g., mine size => 100, sector = underground nonmetal).

NIOSH has targeted the 3rd quarter of the calendar year, which begins in July, as the most appropriate time to begin data collection. Mines will be asked to report data for the 2nd quarter of the same calendar year. Surface mines in the northern states often begin shutdown operations in the 3rd quarter and then are not active during the winter months.

Table A.16 presents the proposed time schedule for the stone, and sand and gravel mining sector. The time schedules for metal and nonmetal, and coal mining sectors will be similar.

Table A.16 Typical Survey Time Schedule
(Dependent on Receiving OMB Approval)

1Activity	Time Schedule
Kickoff Meeting	September 20xx
Sample Selection - Contractor and OMSHR	October 20xx – December 20xx
Prioritize Mine Contact Information	January 20xx –April 20xx
Initial Mailing and Mine Contact	June 20xx – July 20xx
Survey Packet Preparation and Mailing	July 20xx – August 20xx
Host Web Questionnaire	July 20xx – December 20xx
Sample Tracking	

	July 20xx – December 20xx
Nonresponse Questionnaire	January 20xx
Data Receipt and Processing	August 20xx
Data Delivery	March 20xx
Data Analysis Consultation	March 20xx
Final Study Report and Delivery of Other Study Materials	April 20xx

A117. Reason(s) Display of OMB Expiration Date is Inappropriate

There is no request for an expiration date display exemption.

A18. Exceptions to Certification for Paperwork Reduction Act Submissions

There are no exceptions being sought to the certification statement.

1References

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