**SUPPORTING STATEMENT FOR REFUSE PILES AND IMPOUNDMENT STRUCTURES, RECORDKEEPING AND REPORTING REQUIREMENTS**

**OMB CONTROL NO. 1219-0015**

This information collection request seeks to extend, without change, an existing information collection.

**Provisions:** 30 CFR 77.215(j), 77.215-1, 77.215-2, 77.215-3, 77.215-4, 77.216, 77.216-1, 77.216-2, 77.216-3, 77.216-4, and 77.216-5 (Pertains to surface coal mines and surface work areas of underground coal mines)

**Collection Instrument(s**): None

**A. Justification**

**1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the collection of information.**

Section 103(h) of the Federal Mine Safety and Health Act of 1977 (Mine Act), 30 U.S.C. 813(h), authorizes the Mine Safety and Health Administration (MSHA) to collect information necessary to carry out its duty in protecting the safety and health of miners. Further, section 101(a) of the Mine Act, 30 U.S.C. 811, authorizes the Secretary of Labor to develop, promulgate, and revise as may be appropriate, improved mandatory health or safety standards for the protection of life and prevention of injuries in coal or other mines.

Title 30 CFR part 77, subpart C, sets forth standards for surface installations to prevent accidents and injuries to miners. More specifically, the sections cited in the title of this supporting statement address refuse piles (section 77.215), and impoundments (section 77.216). Refuse piles are deposits of coal mine waste (other than overburden or spoil) that are removed during mining operations or separated from mined coal and deposited on the surface. Impoundments are structures that can impound water, sediment, or slurry or any combination of materials. The failure of these structures can have a devastating effect on mine employees, communities, and nearby areas. To avoid or minimize such failures, MSHA has promulgated standards for the design, construction, and maintenance of these structures; for annual certifications; for certification for hazardous refuse piles; for the frequency of inspections; and the methods of abandonment for impoundments and impounding structures.

**2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection.**

MSHA approves plans that are determined to be adequate by reviewing impoundment structure and refuse pile plans for safety concerns, and the evaluation of geotechnical, hydrologic, hydraulic, and other engineering data. The mine operators use the approved plans and approved revisions to plans for constructing and improving impoundment structures and refuse piles.

MSHA also reviews fire extinguishment plans and abandonment plans for impoundment structures and refuse piles to ensure that they conform with prudent engineering and safety practices and, when implemented, that they will prevent or eliminate hazardous conditions.

Sections 77.216-3 and 77.216-4 require weekly inspection and annual certification, respectively, of impoundment structures. The weekly physical examination and instrument monitoring are required to determine whether any signs of instability have developed and whether safety features, such as spillways, are in proper operating condition. Hazardous conditions or inoperable design features can be detrimental to the safety of the impoundment structure and subsequently dangerous to any miners or inhabitants downstream. Weekly instrument records show fluctuations of such important factors as the impoundment structure’s internal saturation level, which has a direct effect on its stability. To minimize the information collection with respect to impoundment structures, operators may apply for longer inspection intervals for sites with low-hazard potential that have an established record of safe performance.

The required annual certification by a registered professional engineer affirms that the impoundment structure is built, operated, and maintained according to the approved plan. MSHA reviews the annual status report in order to determine that the impoundment structure is being constructed, operated, and maintained according to the approved engineering plan. Annual reporting also indicates any changes that have affected the stability or operation of the impoundment structure during the reporting period.

With respect to refuse piles, reports required under section 77.215-2 contain, among other things, a topographic map showing the present and proposed maximum extent of the refuse pile including an area 500 feet around the perimeter, a statement of whether or not the refuse pile is burning, a description of measures taken to prevent water from being impounded by the refuse pile or contained within, a cross section of the length and width of the refuse pile at intervals to show the approximate original ground surface, and any other information pertaining to the stability of the pile.

With respect to impoundments, reports required under section 77.216-4 contain, among other things, changes in the geometry of the impounding structure for the reporting period; data showing the minimum, maximum and present depth of the impoundment; the storage capacity of the impounding structure; and the volume of the impounded water, sediment, or slurry for the reporting period.

**3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses, and the basis for the decision for adopting this means of collection. Also, describe any consideration of using information technology to reduce burden.**

No improved information technology has been identified that would reduce the burden. However, in order to comply with the Government Paperwork Elimination Act, mine operators may retain the records using whatever method they choose, which may include utilizing computer technology. Because the refuse pile and impoundment structure plan drawings are large, mine operators send in hard copies.

**4. Describe efforts to identify duplication. Show specifically why any similar information already available cannot be used or modified for use for the purposes described in Item A.2 above.**

MSHA has reviewed its regulatory position with the Office of Surface Mining (OSM), U.S. Department of the Interior, and the Environmental Protection Agency. As a result of this review, it was determined that there was no duplication in the reporting and recordkeeping burden imposed by these agencies. MSHA met with representatives of OSM prior to promulgation of its standards to assure that there was no conflict. The information collected is unique to each associated impoundment structure or refuse pile.

**5. If the collection of information impacts small businesses or other small entities, describe any methods used to minimize burden.**

This information does not have a significant impact on small businesses or other small entities.

**6. Describe the consequence to federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.**

If MSHA eliminated or reduced its collection, review, and certification of construction or abandonment plans, or reduced its requirements for inspections and monitoring of instruments, unsafe conditions could go undetected. This could result in detrimental conditions for the impoundment structure or refuse pile and subsequently threaten the safety of miners, as well as members of the public living near or downstream of the structures.

**7. Explain any special circumstances that would cause an information collection to be conducted in a manner:**

* **requiring respondents to report information to the agency more often than quarterly;**
* **requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it;**
* **requiring respondents to submit more than an original and two copies of any document;**
* **requiring respondents to retain records, other than health, medical, government contract, grant-in-aid, or tax records for more than three years;**
* **in connection with a statistical survey, that is not designed to produce valid and reliable results that can be generalized to the universe of study;**
* **requiring the use of statistical data classification that has not been reviewed and approved by OMB;**
* **that includes a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; or**
* **requiring respondents to submit proprietary trade secret, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.**

In the event of a mine emergency, the mine operator may have to provide MSHA with reporting information more frequently than quarterly. This allows MSHA, especially during periods of significant rainfall or snowmelt (based on National Weather Service Advisories), or seismic activity, to determine if supplemental evaluations/inspections should be conducted for “High” hazard potential sites. These sites should be evaluated for signs of slope instability, adequate freeboard, and proper operation of decants and spillways. Longer inspection or monitoring intervals approved under the plan requirements of section 77.216(a) must be justified by the operator based on the hazard potential and performance of the impounding structure, and must include a requirement for inspection immediately after a specified rain event as approved by the District Manager. This collection of information otherwise does not implicate any of the listed special circumstances.

**8. If applicable, provide a copy and identify the date and page number of publication in the *Federal Register* of the agency's notice, required by 5 CFR 1320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken by the agency in response to these comments. Specifically address comments received on cost and hour burden.**

**Describe efforts to consult with persons outside the agency to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or reported.**

**Consultation with representatives of those from whom information is to be obtained or those who must compile records should occur at least once every 3 years - even if the collection of information activity is the same as in prior periods. There may be circumstances that may preclude consultation in a specific situation. These circumstances should be explained.**

MSHA published a 60-day Federal Register notice on October 6, 2020 (85 FR 63144). MSHA received no public comments.

**9. Explain any decision to provide any payments or gifts to respondents, other than remuneration of contractors or grantees.**

MSHA does not provide payments or gifts to respondents.

**10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.**

There is no assurance of confidentiality provided to respondents.

**11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why the agency considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons form whom the information is requested, and any steps to be taken to obtain their consent.**

There are no questions of a sensitive nature.

**12. Provide estimates of the hour burden of the collection of information. The statement should:**

**• Indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, agencies should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample (fewer than 10) of potential respondents is desirable. If the hour burden on respondents is expected to vary widely because of differences in activity, size, or complexity, show the range of estimated hour burden, and explain the reasons for the variance. General, estimates should not include burden hours for customary and usual business practices.**

**• If this request for approval covers more than one form, provide separate hour burden estimates for each form.**

**• Provide estimates of annualized cost to respondents for the hour burdens for collections of information, identifying and using appropriate wage rate categories. The cost of contracting out or paying outside parties for information collection activities should not be included here. Instead, this cost should be included in Item 13.**

Respondents: MSHA's records show that in Fiscal Year 2019 there were approximately 531 impounding structures and 17 the refuse piles that have been designated as having the potential of creating a hazard, for a total of 548sites at surface coal mines or surface areas of underground coal mines.

Contract engineering firms prepare the majority of new plans and plan revisions. In MSHA’s experience, contractors provide 95 percent of the engineering studies, testing, and designs. These burden costs are included in Item 13.

The wage rates for estimating hour burden costs are from Bureau of Labor Statistics (BLS), Occupational Employment Statistics (OES) May 2019 survey[[1]](#footnote-1) increased by 1.032 for wage inflation[[2]](#footnote-2) since the May 2019 survey and a 1.49 benefit-scaling factor[[3]](#footnote-3) to obtain fully the loaded wage rates.

A mining company engineer, who earns an average of $65.41/hour[[4]](#footnote-4), develops the remaining 5 percent of plans or revisions. The burden hours and cost estimates for the 5 percent of all annual impoundment and refuse pile plan requirements completed by the coal mining industry are computed below.

Impoundment Plans, Refuse Pile Plans, and Revisions:

(1) MSHA estimates 7 new impoundment plans per year; of the 7 new plans, MSHA estimates that one new plan submitted per year (7 plans x 5 percent = 1) is prepared internally by a mining company engineer, and it takes 1,300 hours to prepare the new impoundment plan. (1 new impoundment plan/y x 1,300 h/plan = 1,300 hours)

(2) MSHA estimates that there are 20 new refuse pile plans submitted per year; of the 20 plans, MSHA estimates that one new plan submitted per year (20 x 5 percent = 1) is prepared internally by a mining company engineer, and it takes 16 hours to prepare the new refuse pile plan. (1 new refuse pile plan/y x 16 h/plan = 16 hours)

(3) MSHA estimates that there are 298 revised impoundment plans per year; of the 298 revised plans, MSHA estimates that 15 revisions submitted per year (298 x 5 percent = 15) are prepared internally by a mining company engineer, and it takes 40 hours to prepare a revision to an existing impoundment plan. (15 revised impoundment plans/y x 40 h/revision = 600 hours)

(1,300 + 16 + 600) = 1,916 h x $65.41/h = $125,325.56

Plans and Revisions Prepared by Mining Company Engineers: 1+1+15 = 17

**Total Responses = (7 + 20 + 298) = 325**

**Total Burden Hours for Plans and Revisions Prepared by Mining Company Engineers = 1,916 hours**

**Total Burden Hour Cost for Plans and Revisions Prepared by Mining Company Engineers = $125,325.56**

Fire Extinguishing Plans:

The standards require that all fires in refuse piles and impoundments be extinguished in accordance with a plan approved by the District Manager. A company engineer develops the plan specifically for each fire incident. This is not a significant category. There has only been one reported event at a refuse facility or impoundment in the past several years. Controlled compaction and exclusion of combustible materials from the fills have almost eliminated the spontaneous ignition of fires. The few remaining events have been trespassers or vandals starting fires in old un-reclaimed mined areas. For the purposes of estimating the burden of such an event, MSHA estimates that two fires in a constructed refuse pile or an impoundment bank constructed from refuse occurs every three years. The engineering consists primarily of preparing a plan for submittal to an MSHA District Manager. A mining engineer should be able to complete an acceptable document in approximately 20 hours.

Estimated 2 fires/3 years = 2/3 which is rounded to 1 plan annually

1 plan 20 h/plan = 20 hours

20 h x $65.41/h = $1,308.20

**Total Responses = 1**

**Total Burden Hours = 20 hours**

**Total Burden Hour Cost = $1,308.20**

Abandonment Plans:

MSHA estimates that a company engineer develops an average of 55 abandonment plans each year, and that it takes 8 hours to prepare such a plan.

55 abandonment plans x 8 h/plan = 440 hours

440 h x $65.41/h = $28,780.40

**Total Responses = 55**

**Total Burden Hours = 440 hours**

**Total Burden Hour Cost = $28,780.40**

Annual Status Report and Certification:

MSHA estimates that there are 531 active impoundments and 17 active refuse piles which require annual reporting or annual certification. MSHA standards allow contractors with registered engineers to submit the annual reports on behalf of their clients. As previously discussed, 95 percent of these large-scale earth structures are designed by contract engineering firms. The execution of those designs is usually monitored by the design engineers who then complete the annual report. Therefore, mine operators address only about 27 (548 x 5 percent) annual reporting or certifications for impoundments and refuse piles. Such revisions would take a company engineer approximately 2 hours per report.

27 annual reports or certifications x 2 h/report or certification = 54 hours

54 h x $65.41/h = $3,532.14

**Total Responses = 27**

**Total Burden Hours = 54 hours (Reporting Total)**

**Total Burden Hour Cost = $3,532.14**

Posting:

MSHA estimates 27 new signs will be posted each year. MSHA regulations require that a permanent identification marker, at least six feet high and showing the refuse pile identification number as assigned by the District Manager, the name associated with the refuse pile and the name of the person owning, operating or controlling the refuse pile, must be located on or immediately adjacent to each refuse pile within the time specified. Also, MSHA regulations require and that a permanent identification marker, at least six feet high and showing the identification number of the impounding structure as assigned by the District Manager, the name associated with the impounding structure and name of the person owning, operating, or controlling the structure, must be located on or immediately adjacent to each water, sediment or slurry impounding structure within the time specified. MSHA estimates that it takes a miner, earning an average of $41.26/hour[[5]](#footnote-5), approximately 30 minutes per installation.

(27 new signs X .5 h per new sign) = 13.50 hours

13.5 h x $41.26 = $557.64

**Total Responses = 27**

**Total Burden Hours = 13.50 hours (14 hours rounded/Third Party Disclosure Total)**

**Total Burden Hour Cost = $557.64**

Recordkeeping Associated with Weekly Inspections and Instrumentation Monitoring:

MSHA’s regulations require that coal mine operators have a “qualified person” inspect their impoundments for signs of instability every 7 days, or 52 times a year. MSHA estimates that a qualified person who inspects an impoundment earns approximately $45.52/hour[[6]](#footnote-6). MSHA estimates that the inspections where mine operators have installed monitoring instruments will take an average of 3 hours. Sites without monitoring instruments will take an average of 2 hours. Approximately 40 percent of the total 531 sites (212 sites), have monitoring instruments installed.

212 impoundments with monitoring instruments x 52 insp./y x 3 h/insp. = 33,072 h

319 impoundments without monitoring instruments x 52 insp./y x 2 h/insp. = 33,176 h

(33,072 + 33,176) = 66,248 h

66,248 h x $45.52/h = $3,015,608.96.45

**Total Responses = 27,612: (212 + 319) x 52**

**Total Burden Hours = 66,248 hours**

**Total Burden Hour Cost = $3,015,608.96**

**SUMMARY OF ANNUAL BURDEN HOURS AND BURDEN HOUR COST[[7]](#footnote-7)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Provision** | **Responses** | **Burden Hours** | **Burden Hour Cost** |
| Refuse Pile and Impoundment Plans and Revisions | 325 | 1,916.00 | $125,325.56 |
| Fire Extinguisher Plans | 1 | 20.00 | $1,308.20 |
| Abandonment Plans | 55 | 440.00 | $28,780.40 |
| Inspection of Impoundments | 27,612 | 66,248.00 | $3,015,608.96 |
| ***Subtotal (Record keeping)*** | ***27,993*** | ***68,624.00*** | ***$3,169,714.92*** |
| Annual Certifications ***(Reporting)*** | 27 | 54.00 | $3,532.14 |
| Posting ***(Third Party Disclosure)*** | 27 | 14.00 | $557.64 |
| **TOTALS** | **28,047** | **68,692 (rounded)** | **$3,173,805 (rounded)** |

**13. Provide an estimate of the total annual cost burden to respondents or recordkeepers resulting from the collection of information. (Do not include the cost of any hour burden shown in Items 12 and 14).**

**• The cost estimate should be split into two components: (a) a total capital**

**and start up cost component (annualized over its expected useful life); and (b) a**

**total operation and maintenance and purchase of service component.**

**The estimates should take into account costs associated with generating,**

**maintaining, and disclosing or providing the information. Include descriptions of**

**methods used to estimate major cost factors including system and technology acquisition, expected useful life of capital equipment, the discount rate(s), and the time period over which costs will be incurred. Capital and start-up costs include, among other items, preparations for collecting information such as purchasing computers and software; monitoring, sampling, drilling and testing equipment; and record storage facilities.**

**• If cost estimates are expected to vary widely, agencies should present ranges of cost burdens and explain the reasons for the variance. The cost of purchasing or contracting out information collection services should be a part of this cost burden estimate. In developing cost burden estimates, agencies may consult with a sample of respondents (fewer than 10), utilize the 60-day pre-OMB submission public comment process and use existing economic or regulatory impact analysis associated with the rulemaking containing the information collection, as appropriate.**

**• Generally, estimates should not include purchases of equipment or services, or portions thereof, made: (1) prior to October 1, 1995, (2) to achieve regulatory compliance with requirements not associated with the information collection, (3) for reasons other than to provide information or keep records for the government, or (4) as part of customary and usual business or private practices.**

The work involved in the testing, design engineering, construction monitoring, and annual reporting for new impoundments, refuse piles, and major additions and revisions to existing projects is generally beyond the on-site resources of a mine operator. Consequently, this work usually is contracted to specialty contract engineering firms. MSHA estimates that contract engineering firms perform 95 percent of all work in preparing plans submitted for MSHA District Manager approval. MSHA estimates that the average employment weighted hourly rate for contract engineers and engineering technicians is $70.63 per hour[[8]](#footnote-8)**.**

Estimated Contractor Engineering Costs:

6 impoundment plans (7 plans x 95 percent) x 1,300 h x $70.63/h = **$610,596.35**

19 refuse pile plans (20 plans x 95 percent) x 16 h x $70.63/h = **$21,471.52**

283 plan revisions (298 plans x 95 percent) x 40 h x $70.63/h = **$799,814.12**

521 annual reports or certifications (548 x 95 percent) x 2 h x $70.63/h = **$73,539.96**

Posting:

The costs associated for the preparation of a new sign are approximately $140 dollars. The cost for the signs are (27 new signs X $140.00 per sign) = **$3,780.00**

**Summary of Burden Costs from Question 13**

|  |  |
| --- | --- |
| **Item** | **Annual Burden Costs** |
| Impoundment plans | $610,596.35 |
| Refuse pile plans | $21,471.52 |
| Plan revisions | $799,814.12 |
| Annual reports or certifications | $73,539.96 |
| Signs | $3,780.00 |
| **Total Cost** | **$1,509,202 (rounded)** |

**14. Provide estimates of the annualized cost to the Federal Government. Also, provide a description of the method used to estimate cost, which should include quantification of hours, operational expenses (such as equipment, overhead, printing, and support staff), any other expense that would not have been incurred without this collection of information. Agencies also may aggregate cost estimates from Items 12, 13, and 14 into a single table.**

The average hourly wage for an MSHA Impoundment Specialist (GS-12) is $58.29/hour[[9]](#footnote-9) including benefits. MSHA estimates that it takes an Impoundment specialist approximately 2 hours to perform an administrative review of an average report for an impoundment or a refuse pile. In addition, MSHA’s Technical Support Mine Waste and Geotechnical Engineering Division’s civil engineers (GS-12 and -13) thoroughly review and evaluate the plans.

Technical Support Review of Impoundment Plans, Refuse Pile Plans, Revisions and Abandonment Plans:

1. MSHA estimates that it takes 4 weeks (160 hours) to review and approve an average impoundment plan, and 7 new impoundment plans are received per year.

7 plans x (2 h admin review + 160 h tech support review) = 1,134 h;

1,134 h x $58.29/h = $66,100.86

1. It takes approximately 30 hours to review a revision to an existing impoundment plan and 298 revisions submitted per year.

298 revisions x (2 h admin review + 30 h tech support review) = 9,536 h; 9,536 h x $58.29/h = $555,853.44

1. MSHA estimates a review of refuse pile plans to take approximately 2 hours, and 20 new plans received per year.

20 new refuse piles x 2 h x $58.29/h = $2,331.60

Abandonment Plans:

MSHA receives an average of 55 abandonment plans per year. Safety specialists estimate that it takes approximately 1 hour to review and prepare a response for one of these plans.

55 reports x 1 h x $58.29/h = $3,205.95

Annual Status Report and Certification:

531 existing impoundments will undergo changes and 17 existing refuse piles pose a potential hazard that require annual reporting or certification. The review will take approximately 1 hour per report.

548 reports x 1 h x $58.29/h = $31,942.92

**Total Cost = $659,435 (rounded)**

**15. Explain the reasons for any program changes or adjustments.**

MSHA records show a decrease in the number of respondents from 632 to 548. The number of active impoundments decreased by 84. The number of responses overall decreased by 3,367 (from 31,414 to 28,047), and consequently, burden hours decreased by 8,171 (from 76,863 to 68,692). These decreases in responses and burden hours are due to the decrease in the number of active impoundments. There was a decrease of $525,383 (from $2,034,585 to $1,509,202) in burden cost also due to the decrease in the number of impoundments.

**16. For collections of information whose results will be published, outline plans for tabulations, and publication. Address any complex analytical techniques that will be used. Provide the time schedule for the entire project, including beginning and ending dates of the collection of information, completion of report, publication dates, and other actions.**

MSHA does not intend to publish the results of this information collection.

**17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons that display would be inappropriate.**

MSHA associates no forms with this Information Collection Request.

**18. Explain each exception to the topics of the certification statement.**

MSHA is not requesting an exception to the certification statement.

**B. Collections of Information Employing Statistical Methods**

This collection of information does not employ statistical methods.

1. Options for obtaining OES data are available at item “E3. How to get OES data. What are the different ways to obtain OES estimates from this website?” at <https://www.bls.gov/oes/oes_ques.htm>. [↑](#footnote-ref-1)
2. Wage inflation is the change in Series ID: CIS2020000405000I; Seasonally adjusted; Series Title:  Wages and salaries for Private industry workers in Construction, extraction, farming, fishing, and forestry occupations, Index. (Qtr 1 2020/Qtr 2 2019 = 140.2/135.9 = 1.032). [↑](#footnote-ref-2)
3. The benefit-scaler comes from BLS Employer Costs for Employee Compensation access by menu [http://www.bls.gov/data/](http://www.bls.gov/data/%20) The data series CMU2030000405000P, Private Industry Total benefits for Construction, extraction, farming, fishing, and forestry occupations, is divided by 100 to convert to a decimal value. MSHA used the latest 4-quarter moving average 2019Qtr2-2020Qtr1 to determine that 33.00 percent of total loaded wages are benefits. The scaling factor may be approximated with the formula and values 1 + (benefit percentage/(1-benefit percentage)) = 1+( .3300/(1-.3300)) = 1.49. [↑](#footnote-ref-3)
4. MSHA used the mean hourly wage of $42.54 from OES May 2015 survey, Standard Occupational Classification (SOC) code 17-2151, Mining and Geological Engineers, Including Mining Safety Engineers (NAICS code 212100, Coal Mining) adjusted for benefits and inflation (shown in previous notes) to obtain a fully loaded rate of $65.4129 ($42.54 x 1.49 x 1.032).

   For all wage rates, hours, and estimations, MSHA uses the relevant precision throughout the calculation to avoid compound rounding errors and rounding at the final rate value. Displayed intermediate calculation values are presented to explain the calculation and are representative but the final rate value reflects the correct rounding and final estimate. [↑](#footnote-ref-4)
5. MSHA computed an employment weighted mean hourly wage of $26.83 from OES May 2019 survey using 20 SOC codes (NAICS code 212100, Coal Mining) adjusted for benefits and inflation (shown in previous notes) to obtain a fully loaded rate of $41.2594 ($26.83 x 1.49 x 1.032). [↑](#footnote-ref-5)
6. Although a wide range of occupations may be considered a “qualified person”, many mines use an Engineering Technician at a slightly higher wage rate than the more general population of occupations. MSHA used the mean hourly wage of $29.60 OES May 2019 survey, Standard Occupational Classification (SOC) code 17-3020, Engineering Technicians, Except Drafters (NAICS code 212100, Coal Mining) adjusted for benefits and inflation (shown in previous notes) to obtain a fully loaded rate of $45.5153 ($29.60 x 1.49 x 1.032). [↑](#footnote-ref-6)
7. Totals may not sum due to rounding [↑](#footnote-ref-7)
8. MSHA computed an employment mean hourly wage of $45.93 from OES May 2019 survey using SOC code 17-2151 Mining and Geological Engineers (NAICS code 213100, Support Activities for Mining) adjusted for benefits and inflation (shown in previous notes) to obtain a fully loaded rate of $70.6256 ($45.93 x 1.49 x 1.032). [↑](#footnote-ref-8)
9. The wage rate for the Impoundment Specialist is from the Office of Personnel Management (OPM) June 2019 June FedScope Employment data cube, <https://www.fedscope.opm.gov/employment.asp>. The search criteria were MSHA, full-time, occupation 1822-Mine Safety and Health Inspection Series, GS-12. The average annual salary of $86,897/2087 hours results in a mean hourly rate of $41.64. In order to include the cost of benefits, this rate was multiplied by a benefits scaler of 1.4 computed from MSHA’s 2020 budget submission. The rate with benefits is $58.2922 ($41.64 x 1.4). [↑](#footnote-ref-9)