



# 2021 ANNUAL REPORT

**Division of Mineral Resources Management  
Ohio Department of Natural Resources**



## Comments from the Chief

This 2021 Annual Report of the Ohio Department of Natural Resources, Division of Mineral Resources Management (Division) highlights the many accomplishments by staff in our various programs. Multiple abandoned mine land sites were reclaimed during the year while adding economic revitalization to the Appalachian region of Ohio. Vital training was provided by staff to over 4,500 miners, blasters, and contractors. Over 4,000 inspections were conducted at industrial mineral and coal mine sites throughout the state. Mining permit applications were reviewed and processed thoroughly and efficiently so minerals that are vital to Ohio's growth and infrastructure could be mined in a safe and environmentally sound way. This was all accomplished while ensuring lands were restored properly after mineral extraction was complete.

The long anticipated and hard sought federal reauthorization of abandoned mine lands funding was approved and will ensure the continued reclamation of priority abandoned mine land and emergency projects. Another highlight to the year was the passage of the Infrastructure and Investment Jobs Act by Congress which will provide an estimated \$46 million annually for the restoration of legacy abandoned mine impacts in Ohio. The Division is up for the challenge and is actively preparing for the historic opportunity of restoring lands and streams that will be productive, safe, and useful for Ohio citizens long into the future.

Sincerely,



David M. Crow, Chief

ODNR - Division of Mineral Resources Management



(ABOVE) Reclamation occurred concurrently with active mining on Shamrock Materials Inc. permit IM-2160, Clinton County Quarry.



(ABOVE) The 2014 aerial view of IM-2160 during active surface extraction of limestone.



(ABOVE / FRONT COVER IMAGE) The 2020 aerial view of Shamrock Materials Inc. permit IM-2160 shows the fully reclaimed industrial mineral mine site.

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## Mission

Provide for safe and environmentally sound development and restoration of mineral and fossil fuel extraction sites.

## Vision

We will lead change in Ohio through innovation, excellence and partnering in natural resource stewardship.

## Values

We respect and value our external customers, recognizing their diversity, knowledge and needs. We will:

- provide information and promote public awareness;
- provide timely quality services;
- practice the highest ethical standards;
- use the best available technology;
- build employee pride and encourage self-improvement;
- promote and implement teamwork and partnerships;
- practice high professional standards and responsibility.

## Introduction

The Division of Mineral Resources Management (DMRM) of the Ohio Department of Natural Resources (ODNR) provides for the safe and environmentally sound development and restoration of coal and industrial minerals extraction sites. Four diverse programs address the environmental and safety aspects related to coal and industrial minerals mining.

Program and support services include permitting, hydrology, bonding, inspection and enforcement, abandoned mine land, engineering and design services, mine safety, data and records management, geographic information systems (GIS), and central support services.

Expertise is provided by a professional and seasoned staff of geologists, environmental specialists, engineers, blasting specialists, soil scientists, hydrologists, researchers, archaeologists, hydrogeologists, inspectors, geographic and information specialists, and program managers. Division staff work diligently to maintain a high standard of regulatory effectiveness.

## 2021 Accomplishments

### COAL REGULATORY PROGRAM

- The Division received a report from The Ohio State University on the decade-long coal combustion byproduct (CCB) demonstration project at Ohio Land Resources Inc. permit D-2304 in Jefferson County. The project is a cooperative effort with American Electric Power, The Ohio State University, and Ohio Land Resources Inc. to determine if unproductive land affected by unreclaimed coal mine highwalls and strip pits can be returned to a productive use through the high-volume beneficial use of CCBs for reclamation. On permit D-2304, an unreclaimed highwall and associated strip pit were backfilled with CCBs. Permit and project evaluation is continuing.
- The Division assisted the ODNR Office of Real Estate & Land Management in reviewing three Underground Injection Control renewal applications, per Ohio Revised Code section 6111.044.
- **Permitting & Bonding:** The Division continues to work cooperatively with CONSOL Energy to accomplish reclamation of the slurry impoundment at the Meigs Mine. Periodic meetings and site reviews are conducted with CONSOL.
- **Hydrology:** Division hydrologists continued to evaluate potential and actual mine pool development in several underground mines that either have closed or are of concern. These efforts



(ABOVE) Kimble Mine, coal permit D-1079 in Tuscarawas County - Reclamation in foreground, active mining in background.

are ongoing and other mines will be evaluated as necessary.

- Division hydrologists gave public outreach talks several times throughout the year.
  - A presentation about coal remining and its benefits was given to senior-level Environmental Science and Geology students at Kent State University Stark County Campus in Canton, Ohio.
  - A talk focused on the Abandoned Mine Land and Coal Regulatory programs was given to senior citizens participating in the Academy of Life Long Learning in Steubenville, Ohio. Most all attendees shared a common knowledge of local coal mining history.
  - A presentation was given during the Ohio Water Resources Annual Conference detailing the responsibilities and review requirements of coal permitting hydrology.

### ABANDONED MINE LAND (AML) PROGRAM

- As part of the Bipartisan Infrastructure Law, the federal AML program was reauthorized for an additional 13 years and additional Treasury funding was dedicated by Congress for an additional 15 years, including \$46.444 million annually to Ohio's AML Program.
- Ohio's Abandoned Mine Land (AML) Program continued to address AML emergencies in 2021 and completed 24 qualified projects.
- The program was awarded another \$25 million in AML Economic Revitalization (AMLER) funding in 2021 for AML and economic development projects.



(ABOVE) Rosebud Mining, Harrison County - Vail Deep Mine entrance.

## INDUSTRIAL MINERALS (IM) REGULATORY PROGRAM

Throughout 2021, DMRM accepted mineral resources inspectors' nominations of operators for the ODNR-DMRM Reclamation Awards. This award recognizes a company's commitment to outstanding reclamation achievement during the course of industrial mineral mining activities.

The Division recognized the following three IM mining operations with awards in 2021.

- American Sand & Gravel Division of Kenmore Construction Co. Inc. operates permit IM-0908 located in Jackson Township, Stark County. Using a clamshell dredge to extract sand and gravel, the permit affects 175.7 acres total, and reclaimed 53.1 acres as undeveloped wildlife area and for light industrial use. The pit floor area is a water-well field for Aqua Ohio.
- Barrett Paving Materials Inc. was issued permit IM-0438 for extracting sand and gravel on 31.2 acres. Mining Area 1 reclamation was carried out from 2001-2005 and reclamation of Mining Area 2 during 2018-2019. The reclaimed land consists of a lake and wildlife area.
- East Fairfield Coal Company operates on permit IM-1103 located in Springfield Township, Mahoning County. During the permit's 31-year history the operator obtained all required surface and underground mining and reclamation permits to extract limestone, sand, gravel, clay, shale, sandstone, and incidental coal. Though the mining methods changed many times since 1990, the operator continued consistent and trustworthy communication with adjacent landowners and upheld the mining and reclamation plan with the ODNR. In total, 90.2 acres were affected and 54.2 acres were reclaimed.



(ABOVE) American Sand & Gravel, IM-0908, Stark County



(ABOVE) Barrett Paving Materials Inc, IM-0438, Shelby County



(ABOVE) East Fairfield Coal Company, IM-1103, Mahoning County

## MINE SAFETY PROGRAM

- Mine Safety Inspectors trained 4,146 miners in Annual Refresher Training (ART), first aid/CPR and New Miner as required by provisions of the Mine Act. Throughout the year, Mine Rescue Operations Coordinators also trained 337 miners in Mine Rescue. Staff also trained 70 miners in electrical ART, 34 in Hazard Awareness, and six in Workplace Exam for a total of 4,593 trained. Staff continued to conduct required training for those contractors who provide a variety of logistical support services to the mining industry and mine sites.
- In 2021, Mine Safety certification staff conducted examinations for 50 miners seeking certifications for key positions such as Mine Foreperson, Coal Mine Electrician, and Mine Medical Responder. Of those examined, 48 were successful in receiving certification. By both state and federal statute, mines cannot operate without the presence of these certified mine individuals. Six miners received Ohio certification under the reciprocal agreement between Ohio and the state of West Virginia.
- Two teams from Ohio competed in the 14th Annual Ohio Mine Safety Training Competition held at the Training Center. The two-day event consisted of solving field problems and team skills such as first-aid, fire hose management, and proper methods of measuring air movement.
- Four Mine Safety Program inspectors-trainers participated in a virtual Training Resources Applied to Mining (TRAM) Conference in October. The annual TRAM event is typically held at the National Mine Health & Safety Academy in Beaver, West Virginia. At the seminar, participants attend and work in training classes that are presented by safety trainers from numerous states across the country. Ohio Surface Inspectors gather information and program training materials to be used in their upcoming Annual Refresher training classes conducted for Ohio's miners. These classes are held in the months immediately following the TRAM so that material is fresh, updated, and interesting.



(ABOVE) Rescue teams are required to test their knowledge of the mine rescue rules. These tests are part of the team's total mine rescue score for the contest.



(ABOVE) A clamshell dredge excavates sand and gravel on permit IM-2140 operated by Stoneco, Inc. in Stark County.

## INFORMATION TECHNOLOGY (IT) SECTION

During the past year the Information Technology Section faced many challenges such as attrition and COVID-19, while realizing significant achievements.

- **Industrial Minerals - Electronic Processing System (IM-EPS)**—

The IM-EPS system is available to operators and consultants for electronic submittal of the various mining and reclamation applications for more timely and efficient review by Division permitting staff, and further revision and issuance activities. These include:

- Revised IM-EPS account request documents to better fit with consultant processes when working with the industry.

- Creation of the Original / Renewal / Amendment Applications that allow industry to create, review and submit their electronic applications through the system.

- To date, the Division has issued three initial Renewal Applications and one Original Application. As the industry and Division adjust to IM-EPS, the processing time is expected to shorten.

- **Central Tracking System (CTS)** — The internal CTS system is also being connected to the IM-EPS system to automatically enter applications into the CTS system, which will minimize the management and reporting impacts the Division would see otherwise.

- Midterm review processing has also been enhanced in the CTS system to help inspectors identify permits which are due for midterm review.

- **Coal, IM and Mine Safety Inspections** — Offline inspection reports for Coal, IM and Mine Safety continue to be developed and improved.
- **Cambridge Lab Water Analysis Results** — To ensure technology security, the existing connection was discontinued that transferred water quality sampling data analyzed in the Cambridge Environmental Lab to the Ohio Watershed Data website maintained by Ohio University. An alternative data transfer process was put in place that allows dataflow while maintaining network security and public access.
- **Document Scanning** — The IT section continues to support the scanning needs of the Division.

## 2021 PROGRAM UPDATES

# Coal Regulatory Program

The U.S. Department of Interior's Office of Surface Mining Reclamation and Enforcement (OSMRE) conditionally approved the state's Coal Regulatory and Permitting Program in 1982.

OSMRE determined the Ohio program, as managed by the DMRM, is:

- no less stringent than the standards specified in the Surface Mining Control and Reclamation Act (SMCRA) of 1977;
- as effective as the federal rules adopted under SMCRA; and
- adequately funded to operate the program.

OSMRE provides oversight and support to the Ohio program. Together, OSMRE and DMRM developed a performance agreement that considers the goals and objectives of both agencies, as well as action plans for regulatory program areas of concern that have not been resolved or will not be resolved within 180 days.

The Coal Regulatory Program involves two primary areas—permitting and bonding; and inspection and enforcement.

### PERMITTING AND BONDING

A team of environmental and engineering professionals, blasting, soils and archaeological specialists, and hydrogeologists perform thorough reviews of each application for a coal mining and reclamation permit. Detailed reviews by experienced staff ensure that potential environmental impacts are minimized; environmental, and public health and safety measures are included; and statutory requirements and rules are met during the permitting process.

A current estimated cost of reclamation is required to be maintained on each permit; and performance security in the form of a surety bond, certificate of deposit, letter of credit or cash must be posted to ensure adequate funds are available to reclaim the site and remediate adverse environmental impacts in the event performance security is forfeited.



(ABOVE) B&N Coal, Noble County - Topsoiling in foreground, active mining in background.

During 2021, staff:

- issued 1 new coal mining permit authorizing coal mining activity on 99.7 acres;
- reviewed, approved and issued 1 adjacent area application, 52 coal permit revisions, 18 coal permit transfers and 3 coal permit renewals;
- issued 6 incidental boundary revisions totalling 79.6 acres;
- approved 11 change of ownership and control applications for companies;
- invoiced \$10,359,110 for performance security to coal mining applicants and permittees;
- processed a total of 92 releases of performance security on coal mining operations for partial and complete reclamation releases on 3,578.3 acres;
- processed 10 excess bond releases where performance security exceeded the outstanding liability;
- continued implementing a revised process for records management and addressing duplicate permitting information located in the district offices.

Permitting and regulatory staff met biannually with industry representatives, other regulatory agencies including the U.S. Fish and Wildlife Service, OSMRE, U.S. Army Corps of Engineers and the state and federal Environmental Protection agencies, as well as other interested parties. Rule promulgation and development of procedure directives and guidelines associated with Ohio's coal mining law are conducted in a manner to



provide input from the regulated industry and the Ohio Coal Association, as well as OSMRE, the Ohio Environmental Council, and the public.

Permitting and regulatory staff provide periodic mailings to the mining industry and consultants on topics of interest and provide training associated with law and rule changes or programmatic issues impacting the mining industry.

A Memorandum of Understanding between the Division and the Ohio Environmental Protection Agency Division of Surface Water remains in place to clearly address coordination and agency roles in the permitting and regulation of coal mining operations.

### **HYDROLOGY**

Permitting and field hydrologists investigated one citizen private water supply complaint and assisted field inspection staff with multiple mine drainage and other hydrology-related investigations at active and reclaimed mine sites.

Hydrologists also participated in bi-monthly meetings of the State Coordinating Committee on Ground Water.

### **BLASTING**

(See **BLASTING** under **INDUSTRIAL MINERALS PROGRAM** section)

### **FIELD INSPECTIONS AND ENFORCEMENT**

Field inspection staff is required to inspect Ohio's coal mining operations to monitor active mining and reclamation to assure compliance with the approved permit. Division inspectors enforce Ohio's laws regulating active mining to protect the public and environment from adverse impacts.

Inspectors monitor and evaluate active mining and reclamation to ensure that permit holders restore mined lands and waters to productive uses after mining is completed. In 2021, Ohio operators completed final reclamation on 1,396.4 acres.

DMRM's inspectors are required by law to perform at least one complete inspection of a permitted site every quarter and one partial inspection every month for active mines that have not completed Phase II

(revegetation) reclamation requirements. Inspectors examine the mine area, as well as the area surrounding a mine, to ensure compliance with Ohio's laws and the approved permit.

In 2021, DMRM inspectors:

- conducted 1,412 coal mining operation inspections;
- responded to 7 public complaints on coal mining operations;
- issued 4 notices of violation and other enforcement actions;
- completed 100% of required inspections; and
- conducted 95 bond release inspections recommending approval on reclamation segments totaling 3,578.2 acres.

### **REMINING PROGRAM**

The Division recognizes there are thousands of acres of abandoned mine lands in need of reclamation which still contain valuable coal resources. With advancements in mining technologies and numerous recent federal and state incentives for active coal remining, DMRM is working with the industry as well as state and federal partners to encourage coal remining permits.

In 2021, DMRM completed a remining video to highlight the benefits of remining. The video is available to view on the Division website and on the ODNR YouTube channel. DMRM continued work on a remining white paper that is intended to complement the video.

The Remining Program also works cooperatively with the Division's Abandoned Mine Land (AML) Program to encourage remining and reclamation opportunities for those mine operators that are mining in close proximity or adjacent to abandoned mine lands by entering into reclamation contracts.

## 2021 COAL PRODUCTION

The Ohio Department of Taxation reported coal production in 2021 at 2.86 million tons, continuing an annual decrease in tonnage reported.

### COAL PRODUCTION (2012-2021)

2012	26,344,046 tons
2013	24,844,584 tons
2014	23,079,068 tons
2015	17,303,128 tons
2016	15,991,883 tons
2017	9,633,770 tons
2018	9,596,311 tons
2019	8,283,861 tons
2020	3,739,693 tons
2021	2,860,157 tons

## PUBLIC INVOLVEMENT

Ohio law provides for public participation in the development, revision and enforcement of regulations, standards, and reclamation plans or programs. For example, after a permit application has been deemed complete for a surface or underground coal mining operation, the applicant publishes a public notice in a local newspaper identifying the public location where the application may be reviewed. The notice also provides citizens with an opportunity to provide written comments or request an informal conference regarding the permit application.

## POTENTIAL AFFECTED MINES REVIEWS

Ohio Revised Code 1509.08 mandates that when an oil and gas well application is submitted within a coal bearing township of Ohio the Chief of the Division of Oil and Gas Resources Management (O&G) must notify the Chief of the Division of Mineral Resources Management (MRM). The Chief of MRM will review the application location and will notify any coal mining companies that may be affected by the drilling. The mining companies have an opportunity to object to the drilling application. The Chief of MRM then makes a finding and recommendations to the Chief of O&G whether to approve the drilling application.

Affected mine reviews are largely a mine safety issue and are taken seriously by the Division.

A review team has been established within the Division to review oil and gas drilling applications. The team consists of representatives from Mine Safety, Coal Regulatory, Coal Permitting, and the Abandoned Mine Land sections who are experienced with mining and familiar with the mines in the coal bearing townships. The review team takes many factors into consideration before making recommendations to the Chief.

In 2021 the Division reviewed over 249 oil and gas well applications for affected mine issues.



(ABOVE) Be-N Coal, Noble County, with active mining of an open coal pit (at right) and a sediment pond (at left).

## Abandoned Mine Land (AML) Program

Serious public health and safety problems and environmental concerns still exist with surface and deep coal mining that occurred prior to the reclamation standards used today. Problems vary and may include: dangerous highwalls, pit impoundments, mine subsidence, streams degraded by acid mine drainage, flooding, landslides, open mine portals and shafts.

As a result, the Abandoned Mine Land (AML) Program, with federal- and state-funded components, was created to address high priority mine-related issues. These problems are addressed through the design and construction of reclamation projects.

The AML Program, which has been managed by the Division since 1974, provides jobs and economic benefits to Ohio's Appalachian region through reclamation and construction projects. In 2021, 25 projects were bid for construction through the AML Program totaling approximately \$965,088.

### STATE ABANDONED MINE LAND PROGRAM

The state-funded AML Program supports numerous projects which are funded by state severance taxes on coal and on some industrial minerals. The state-funded program emphasizes environmental restoration associated with mining which occurred before April 10, 1972.

Projects primarily focus on coal-related environmental restoration, such as the restoration of streams impacted by acid mine drainage. This program is also responsible for providing supplemental funding for the reclamation of industrial minerals mining sites that were left in an unreclaimed state and where the forfeited surety bond is insufficient to complete the restoration.

In 2021, one state abandoned mine land project was completed. The Kennon Street Mine Drain in Belmont County addressed mine drainage from an abandoned mine impacting an occupied house. The mine drainage project, which included updated infrastructure on Kennon Street, was reclaimed for a cost of \$111,304 using State AML funds.



(ABOVE) The Kennon Street Mine Drain Project was constructed to address acid mine drainage (AMD) flowing through the foundation of an occupied residence, out of the yard area, and along the public street in the area of the Village of Bridgeport, in Pease Township, Belmont County, Ohio.

The mine drainage posed a potentially hazardous situation with regard to stability of the house foundation. In addition, AMD flowing on Kennon Street became a safety concern to the traveling public because the drainage was freezing on the roadway. A subsurface mine drain was installed to safely convey drainage.



## FEDERAL ABANDONED MINE LAND PROGRAM

The federal AML Program is funded by OSMRE, which is supported by a federal severance tax on coal mined nationwide. The federal Surface Mining Control and Reclamation Act of 1977 authorized this program.

Annual grants fund the highest priority public health and safety and environmental problems associated with areas mined prior to August 3, 1977. In 2021, DMRM was awarded an AML grant for \$6.5 million to support the design and/or construction of 20 non-emergency projects and emergency projects as they arise.

The AML Program is supported by an in-house engineering and design services group, hydrologists, and environmental specialists. DMRM engineers provide a variety of services including project design, surveying, consultant management, construction oversight, regulatory reviews and revisions, and complaint investigations. Hydrologists investigate water complaints, collect and analyze water data and participate in the design team for water related projects.

Environmental specialists manage the National Environmental Policy Act and Army Corps of Engineers permitting, eligibility determinations, project planning, as well as rights-of-entry and coordination with outside agencies.

The AML staff's work resulted in the following accomplishments in 2021:

- stabilization of 2.9 acres of landslides and seepage;
- sealing of 6 vertical openings;
- stabilization of 15 mine subsidence sinkholes; and
- contracted 25 projects to construct \$965,088 in reclamation projects.

## NON-EMERGENCY PUBLIC HEALTH AND SAFETY PROJECTS

Non-emergency abandoned mine land problems are categorized by the level of risk posed to the general public and property. Priority 1 problems are deemed extremely dangerous while Priority 2 problems are also dangerous, but to a lesser degree. Projects are selected from the program's inventory of abandoned mine land hazards, which are developed from mining-related complaints and field investigations.



(ABOVE) In April 2021, the shaft of an abandoned underground mine opened suddenly at a residence located in Canal Fulton, Lawrence Township, Stark County, Ohio. This shaft was directly related to the mapped Hernbrook Mine, SK-42, operated by the Ridgeway-Burton Coal Company for the extraction of the Sharon No. 1 coal. This was the main production shaft for the mine and was in operation from 1885 to 1900.

Located in the backyard and extending under the back porch this feature measured 30' in diameter and 25' deep to water. This shaft failure posed an immediate threat to the residence. The shaft was filled and mitigated by placing alternating lifts of Type 'C' rock and poured concrete, creating a rock/concrete plug. Filter fabric was placed followed by compacted soil.

(BELOW) Resoiling material, fertilizer, seed, and mulch completed the reclamation work.



## EMERGENCY PUBLIC HEALTH AND SAFETY PROJECTS

The AML Program responds quickly to emergency complaints and situations resulting from abandoned mine land conditions that present immediate and substantial threats to public safety. Since 1992, Ohio's program has administered the design and construction of emergency projects. Prior to 1992, this was a function of OSMRE.

Beginning in 2011, OSMRE no longer provided funding for this program separate from non-emergency grant funding. As a result, emergency project funding is now shared with funding for Priority 1 and 2 public health and safety problems.

In 2021, the AML Emergency Program investigated 89 potential emergency complaints. As a result of investigative efforts, 24 projects were approved to eliminate significant hazards. These projects include 15 open sinkholes, 6 mine shafts, and 2 landslides. A total of \$828,947 was spent on emergency projects in 2021.

## ACID MINE DRAINAGE ABATEMENT PROJECTS

The Acid Mine Drainage (AMD) Program plays an important role in restoring the quality of local watershed resources impacted by acid mine drainage. DMRM sets aside up to 30 percent of the annual grant funds for improving acid mine drainage-impacted streams. As with other restoration projects, the goal is to restore streams to pre-mining ecological conditions and construct remediation activities which will benefit the local environment.

No new AMD projects were funded in 2021.

## BOND FORFEITURE PROGRAM

DMRM is responsible for the restoration of land left unreclaimed by coal and industrial minerals mine operators who did not fulfill their original reclamation obligations under existing regulations.

When reclamation has not been completed, the Chief issues an Order demanding payment of forfeited bond monies held by financial institutions. If the financial assurance (bond) is a surety bond, the surety company may reclaim the site in accordance with the approved reclamation plan or pay to the State the



(ABOVE) In March 2021, a subsidence occurred suddenly on the Parasson property beneath an occupied warehouse and significant damage occurred to the warehouse, the parking lot, and the foundation of two large satellite dishes. The feature was located within a business district with many restaurants located nearby. Drilling into the abandoned underground coal mine occurred around the structure and 1,666 cubic yards of grout were placed in the abandoned underground coal mine to stabilize the subsidence.

forfeited amount of surety bond. DMRM then designs restoration plans and contracts with a third party to reclaim the impacted areas.

In addition to forfeited bond monies, severance taxes on each ton of coal and industrial minerals are collected to supplement the per-acre bond amount. These funds are used when the cost to reclaim an area exceeds the bond forfeited for that operation.

There were no new forfeitures in 2021.

## AML ECONOMIC REVITALIZATION (AMLER) PROGRAM

The 2017 the AMLER Program was authorized by Congress under the Consolidated Appropriations Act, 2017 (Public Law 115-31) and provides \$10 million of US Treasury funds to Ohio's AML program. The funds are to be used "for the reclamation of abandoned mine lands in conjunction with economic revitalization and community development and reuse goals."

Ohio has received an additional \$10 million in AMLER Program funding as part of the 2018 and 2019 federal budgets, and an additional \$25 million in 2020 for a total of \$65 million in program funding.

Language from the OSMRE guidance for the AMLER Program states that: “State AML programs, in consultation with state and local economic and community development authorities, must develop a list of eligible projects in Appalachian counties that demonstrate a nexus with AML cleanup and economic and community development.” Additionally, the guidance states: “This AMLER is an opportunity for local communities and states to return impacted areas to productive reuse, which should be defined by the state in cooperation with local communities, to achieve the economic and community development goals identified for the community and/or region.”

Implementation of the AMLER Program requires Ohio’s AML program to coordinate with state and local community development authorities and organizations. DMRM has initiated two AML Pilot Outreach contracts to assist DMRM with connecting to economic development agencies and organizations, providing education about the program, and developing high priority projects for potential funding.

The Division works with potential partners on project ideas for eligibility determinations and priority. High valued priority project proposals are submitted to OSMRE for approval/vetting.

Since 2018 OSMRE has approved 17 project applications. These proposals request over \$26 million in AMLER funding. Nine projects are complete at a cost of \$8.8 million, with six projects completed in 2021. The eight remaining approved projects are currently in construction phase or being planned and designed. Additional projects are being planned for vetting approvals by OSMRE.

The types of projects selected for AMLER funding include expansion of recreational opportunities such as bike trails, rails to trails, hiking trails, hunting and camping opportunities. Other projects focus on industrial or commercial site development. All projects include some direct abandoned mine reclamation work in addition to providing the economic benefits to local communities.



*(ABOVE) Images of the Ripplinger Subsidence Emergency site in Wayne County, Chippewa Township show before and during reclamation to stabilize a dangerous subsidence caused by the collapse of an undocumented mine. Information from past projects showed the Sharon #1 coal seam was mined in this area from 1896 through 1912. (TOP) Subsidence adjacent to Hollow Ridge Road. (MIDDLE) Excavated subsidence. (BOTTOM) Grouted rock plug installation.*

## Industrial Minerals (IM) Regulatory Program

Ohio is a major producer of non-fuel minerals, also known as industrial minerals. The industrial minerals produced in Ohio, listed in order of highest to lowest per ton production include:

- limestone and dolomite
- sand and gravel
- salt
- sandstone and conglomerate
- shale
- clay

The state's first industrial minerals surface mining laws were enacted in 1974 with the establishment of Ohio Revised Code Chapter 1514, which required an industrial minerals operator to submit a detailed plan for mining and reclamation, and to post a reclamation assurance bond in order to obtain a permit for mining.

Surface mining refers to all or any of the processes used to extract minerals from the earth or from the surface of the land by surface excavation methods, such as open pit mining, dredging, placering or quarrying. This includes: the removal of overburden for the purpose of determining the location, quantity and quality of mineral deposits; and the incidental removal of coal at a rate of less than one-sixth the total weight and less than fifty percent of revenues of minerals and coal removed during the year.

Significant changes were made to Ohio's surface mining laws in 2002, which incorporated requirements for groundwater hydrology modeling and blaster certification, and an updated public and interagency application notification process.

The IM Regulatory Program involves two primary areas—permitting and bonding; and inspection and enforcement.

Inspection staff, assisted by expert environmental specialists, hydrogeologists, blasting specialists and engineering staff, performs complete and thorough reviews of each application for an industrial minerals mining permit.

Detailed reviews ensure that environmental impacts are minimized, all necessary environmental safeguards are in place, and that all statutory requirements are met during the permitting process. During the permitting process, multiple agencies, including local governments, are invited to provide input and comments regarding the permit application.

A performance bond in the form of a surety bond, certificate of deposit, letter of credit, or cash must be posted to provide funds for reclamation of a mine site if an operator fails to complete reclamation. Proof of public liability insurance is also required prior to the start of mining.

*(BELOW) Final reclamation on Harvest Sand & Gravel, Inc. permit IM-2174 in Columbiana County, Salem Township shows a final land use as cropland with a water source.*



## PERMITTING AND BONDING

During 2021, the Division issued 8 new IM original application permits on 713.9 acres and 22 IM permit amendments on 707.1 acres. Staff reviewed and approved 91 modifications to permits, 57 permit renewals and 23 permit transfers.

In addition, the Division:

- invoiced \$602,025 in performance bond for IM applicants and permittees;
- invoiced \$2,127,200 in performance bond for IM permit transfers;
- processed a total of 95 releases of performance security on IM mining operations for excess bond, partial reclamation releases and complete reclamation releases which totaled 649.8 acres; and
- final reclamation was completed on 603.4 acres that had been affected by mining.

IM staff makes it a priority to participate in periodic meetings with industry representatives to promote open communication, as well as provide training and clarification to assist consultants and applicants with the permitting process. Rules related to Ohio's IM

mining law are written with input from the regulated industry, the Ohio Aggregates and Industrial Minerals Association, the Ohio Environmental Council, and the public.

## ANNUAL INDUSTRIAL MINERALS PRODUCTION ACTIVITY

An IM permit has a term of 15 years, with the option to apply for renewal at the end of the term. The work of DMRM continues throughout the life of each operation. During a permit's lifecycle, an operation may be actively removing minerals, temporarily inactive (held for future reserves), or completely finished with mining and in a reclamation phase. The number of active permits fluctuates from year to year. However, the Division remains diligent to ensure that each permitted operation meets all environmental requirements during all phases of mining and reclamation.

During 2021, the IM Program was responsible for monitoring 567 permitted IM operations in 87 out of 88 counties.

### INDUSTRIAL MINERALS PERMITTING ACTIVITY (2017-2021)

Year	New Permits	Amendments	Incidental Coal	Modifications	Transfers	Renewals	Total Current Permits
2017	2	16	1	98	13	9	588*
2018	6	9	0	74	8	17	582*
2019	10	15	1	107	12	22	575*
2020	8	15	2	83	15	22	575*
2021	8	22	0	91	23	57	567*

\*The decrease in total permits is reflective of older inactive sites having the final reclamation releases approved and an increase in operators adding acreage to existing permits (amendments) rather than obtaining new permits.

### INDUSTRIAL MINERALS PRODUCTION IN TONS (2017-2021)\*

	CY 2017	CY 2018	CY 2019	CY 2020	CY 2021
Limestone & dolomite	62,502,315	67,804,000	75,905,125	64,788,953	69,283,763
Sand & gravel	32,375,434	32,937,500	38,076,035	34,603,972	32,823,536
Salt	4,601,315	4,699,000	4,039,640	5,105,372	3,827,598
Sandstone & conglomerate	1,726,568	1,775,000	1,491,966	1,119,696	1,037,018
Clay	913,277	935,900	915,305	733,061	780,026
Shale	675,326	807,000	559,660	442,138	430,222
TOTAL	102,794,235	108,958,400	120,987,731	106,838,192	108,182,163

\*Tonnage based on reporting during the calendar year (CY).



## GROUND WATER MODELING FOR DEWATERING PERMITS

Applicants are required to submit a ground water model for review or submit data for ODNR to model when an application for a new IM permit that includes dewatering is received or an amendment or modification to deepen an existing IM permit is submitted. The review and completion of ground water models is done in coordination with ODNR Division of Water Resources.

In 2021, DMRM and ODNR Division of Geological Survey reviewed and approved two ground water modeling reports: one for an original application that includes dewatering and one to amend acreage to an existing permit. A revision to an existing model report was approved to amend acreage to an existing permit. One model was completed by DMRM in 2021 to add dewatering to an existing permit with a modification. Also, DMRM revised an existing model to add acreage to an existing permit.

## FIELD INSPECTIONS AND ENFORCEMENT

A staff of eight IM inspectors enforce the laws associated with permitting and regulating active IM mining to protect the public and the environment from adverse impacts. Individual inspectors may be responsible for more than 95 surface IM mine permits; their inspection regions range from 5-20 counties each.

Staff is required to inspect the IM mining operations to monitor active mining and reclamation to ensure compliance with the approved permit and that operators restore mined lands to productive uses.

During an inspection, inspectors examine the mining area, as well as the landscape surrounding the mine, to identify any issues that may require attention. Although there are no statutory requirements as to frequency of inspections, the IM Program has established a goal of conducting quarterly inspections on all mine sites annually.

In 2021, DMRM inspection staff conducted 1,657 IM mine site inspections. Of those inspections, 32 were for unpermitted sites, 5 were administrative related, 576 were partial inspections and 1,044 were complete inspections.



(ABOVE) Permit IM-335, Miami Co., Newberry Twp. is an active limestone quarry operated by C.F. Poeppelman, Inc. since 1977.

A breakdown of the Division's IM investigations of complaints is as follows:

- Water well-3
- Illegal mining-2
- Blasting-5
- Compliance-11
- Drainage/flooding/erosion-5
- Pre-law mining-1

In 2021, 12 IM surface mining Chief's Orders were issued for the following categories:

- Blasting violations: airblast exceedance-1, ground vibration exceedance-2, and failure provide seismographic data printouts-1
- Delinquent annual report or filing fees-7
- Affectment beyond the permit boundary-1



(ABOVE) Walhonding Sand & Gravel permit IM-2127 is actively producing sand, gravel, shale and topsoil from the surface mine in Coshocton Co., New Castle Township.



(ABOVE) A view of Ohio Asphaltic Limestone Corp. permit IM-253 in Highland County, Liberty and Union Townships which holds an active permit for 510 acres and is in its 44th year of operation.

## BLASTING

The Blasting Program provides services primarily to four DMRM program areas: Permitting, Mine Safety, Coal Regulatory, and Industrial Minerals. Program staff investigates citizen complaints concerning blasting (ground vibration, airblast, flyrock, and alleged damage to structures); coordinates the Ohio Blaster Certification Program; installs and maintains blasting seismographs outside homes on a pro-active basis and in response to complaints, to monitor compliance with the ground vibration and airblast limits; reviews the blasting plan section of mining permit applications; processes citizen requests for preblast surveys; and assists inspectors, citizens, mining companies, consultants, blasters, lawyers, insurance adjusters, engineers, and various governmental agencies with blasting regulation interpretation and compliance problems.

During 2021, Blasting Program staff and assistants:

- investigated 4 new blasting annoyance and/or damage complaints (0 coal-related, 4 quarry-related);
- conducted seismographic monitoring of blast vibrations at 33 homes (10 coal-related, 23 quarry-related);
- processed 7 citizen requests for preblast surveys (coal only);
- reviewed and logged 15 preblast survey reports (coal only);
- reviewed 51 applications for blaster certification (15 new, 36 renewals); and

- reviewed 17 blast plans (5 coal-related, 12 quarry-related).

Despite more than an estimated 8,000 blasts in Ohio's surface coal mines and quarries, there were no verified incidents of structural damage to homes from blast vibrations and no off-site flyrock incidents.

Special projects included:

- initiated discussions with industry representatives regarding the possible regulation of underground limestone blasting;
- rebuilt the blaster certification exam after it was moved to the Electronic Processing System (EPS);
- served on the Standards Committee of the International Society of Explosives Engineers to periodically review and update field practice guidelines and performance specifications for blasting seismographs;
- continued working with a group of state and federal blasting regulators to improve blaster certification programs across the Appalachian region;
- conducted the 5-day Blaster Certification Course in June and again in August with a total of 15 participants, 14 of which completed the course, passed the exam and became certified surface mine blasters.

## PUBLIC INVOLVEMENT

When mining is proposed in areas that have not been previously zoned for mining, or significant amendments and modifications are proposed for existing permits, DMRM provides opportunities for the public to become involved in the industrial minerals permitting process. When a permit application is deemed administratively complete, the applicant (operator) is required to publish a public notice in a local newspaper for any area that is not zoned or has not had a conditional use for mining approved within 365 days. The notice identifies a public location where the application may be reviewed and copied, as well as provides the public an opportunity to make comments or request an informal conference regarding the permit application.

Staff schedules and attends meetings with applicants, citizen groups, and individuals interested in mining activities; and provides copies of industrial minerals mining applications, permits and public record items upon request.

# Mine Safety Program

Laws were established in 1872 to protect miners and the mines in which they work during the extraction of resources. The Ohio Mine Safety Program promotes safe mining practices through four major program services: mine rescue, mining inspections and safety audits, certification testing of mining officials, and the safety training of miners.

DMRM's Mine Safety inspectors and Mine Rescue operations coordinators possess vital agency and industry experience necessary to positively interact with miners, and influence safety performance and behavior among miners and mine operators.

## MINE FACILITY SAFETY INSPECTIONS AND AUDITS

Mine Safety law mandates that DMRM conduct quarterly inspections of all underground coal and industrial minerals mines and all surface coal mines.

Inspections are also conducted at surface industrial minerals (IM) mines, when the following conditions exist:

- Inspections are conducted at surface IM operations that are not regularly inspected by the Mine Safety and Health Administration (MSHA);
- Increased Mine Safety inspections are mandated for any surface IM operation that exceeds three violations per inspector day (VPID);
- Increased Mine Safety inspections are mandated immediately for any surface IM operation that has experienced a fatal or serious mining accident.

Mine Safety also conducts non-regulatory safety audits at surface IM operations for which DMRM has been requested by the mine operator to provide Annual Refresher Training (ART) for its miners. Miners are required by MSHA to receive this approved training at intervals not to exceed 12 calendar months.

During 2021, Mine Safety Inspectors conducted 90 IM safety audits, 445 regular IM and coal inspections, and 33 re-inspections.

Quarterly inspections were conducted at all 9 of Ohio's underground mining operations. Of these, three are



*(ABOVE) A local mine rescue team trains for proper response technique installing ventilation material to clear mine contaminants during the working of a field problem in the simulated mine.*

coal, two are salt, and four are limestone. One of these coal operations in southeastern Ohio is a large longwall mine with annual tonnage in the millions.

The salt mines are located in the Cleveland and Mentor areas on the shores of Lake Erie. These underground mines extend well beneath the lake, several thousand feet below the surface where more than four million tons of salt was mined during the year.

Mine Safety Inspectors closely inspect oil and gas well plugging or re-plugging operations in locations where existing well bores have intersected the coal seams of active underground coal mining operations. These locations and activities are critical in that miners will be physically mining through, or mining in close proximity to, these well bores. It is imperative to ensure they are properly plugged in accordance with strict guidelines, specifications and requirements intended to ensure the safety of miners during mining.

## SAFETY TRAINING AND CERTIFICATION

Miner safety training is critical to improving the health and safety of Ohio's miners and the working conditions in the mines. In an effort to reduce fatalities, accidents, and mining-related illnesses, Mine Safety inspectors train miners and contractors in ways to recognize and respond to hazards, and to address health and safety concerns.



(ABOVE) A mine rescue team performs an exercise to move a weighted object through the cones using water pressure, which teaches the team fire hose nozzle control.

In 2021, 4,186 mine workers were trained by DMRM Mine Safety staff in a variety of areas including first aid, new miner, CPR, annual refresher courses, Hazard Awareness/Workplace Exam; 70 miners were trained in electrical annual refresher courses; another 337 miners were trained in Mine Rescue Part 49 for a total of 4,593 trained.

Certification staff conducts testing for a variety of underground and surface mining positions, such as Mine Foreperson, Coal Mine Electrician, and Mine Medical Responder. Structured examinations mandated by state law serve to ensure that the applicant possesses the necessary applicable mining experience, and has acquired the skills and knowledge to be certified to work in these important positions.

Certification is an essential part of promoting and maintaining the safety and productivity of Ohio's mining community. In 2021, DMRM staff certified 48 of the 50 applicants examined, of which the majority sought foreperson certification for underground and surface mining. Three miners received Ohio certification under the reciprocal agreement between Ohio and the state of West Virginia.

### **MINE RESCUE TRAINING COMPETITIONS**

Mine Safety inspectors and Mine Rescue operations coordinators officiate and participate in the planning, administration, team support and judging of multiple underground mine rescue training competitions annually throughout the geographic region of Ohio, Pennsylvania, West Virginia and northern Virginia.

Mine rescue training competitions are designed to test the knowledge and technical skills of a team, and to evaluate the team's emergency response and preparedness level. Teams are given scenarios during the competition related to simulated underground mine fires, explosions and other potential mine emergency scenarios. To maintain MSHA certification as a Mine Rescue team, federal law requires that the team must train a minimum of 96 hours per year and must compete in a minimum of two sanctioned mine rescue training competition exercises per year. It is important to note that an underground mine cannot operate without mine rescue team coverage provided by at least two certified mine rescue teams.

At all training competition events, mine rescue teams must compete in the mine rescue field problem exercise to receive credit toward meeting the MSHA team certification requirement. However, at many of the contests, they also compete in the 'benching' competition which tests a team member's skill in the maintenance, trouble-shooting and repair of the closed circuit breathing apparatus, the Drager BG-4. Many teams also have one or more team members compete in the pre-shift examiner contest. The pre-shift tests the mine examiner's knowledge and ability to identify, correct, report, and record hazards in a manner that would normally be done prior to the beginning of each mining shift. Some teams also enter members in the first aid competitions.

In 2021, DMRM hosted its 14th annual Ohio Mine Safety Training Competition with two teams

participating from Ohio. Since its beginning in 2008, the contest was intended to assist Ohio teams in complying with team certification requirements, and therefore was open to Ohio teams only.

### MINE RESCUE OPERATIONS

DMRM maintains mine rescue stations strategically located in eastern Ohio near the towns of Barnesville, Zaleski, and Cadiz. Each mine rescue station maintains the necessary equipment to support mine rescue teams' response to a mine emergency incident. They also maintain emergency trailers to transport this equipment to the mine.

All mine rescue equipment is serviced, tested, calibrated, and maintained in a state of readiness. All four rescue trailers are specially equipped to service Drager BG-4 self-contained breathing apparatus at remote sites, and to provide rapid turnaround for reuse during a mine emergency. The Division also maintains foam generating fire-fighting equipment and a mobile air quality lab van in Cambridge, capable of providing

mine gas analysis and enhanced logistical support for the rescue or recovery effort.

Under an agreement with MSHA and agreements with underground mine operators, the state Mine Rescue Network provides coverage to all Ohio underground coal mines and to all underground IM operations with the exception of one limestone mine located in the southwestern part of the state, which has elected to utilize a private rescue contractor. As required under provisions of Ohio's agreement with MSHA, each Ohio mine rescue station is thoroughly inspected for compliance every six months by MSHA inspectors. Ohio's stations were found in compliance in 2021 and ready to respond.



*(ABOVE) A mine rescue team practices administering first aid to an unconscious patient. Teams are trained to take care of life-threatening injuries before transporting to the fresh air base where they will treat all other injuries. Once all injuries are addressed, the team will prepare the patient to be transported to the surface.*



*(ABOVE) An Ohio mine rescue team maps items and conditions found during the working of a simulated mine emergency.*

# Central Support Services

## INFORMATION TECHNOLOGY (IT)

The Central Services IT section is responsible for providing IT support and leadership for DMRM, including project management, business analysis, and developing and maintaining the Division's computer programs/applications such as SharePoint, the AML Electronic Project System, the Central Tracking System, the Electronic Coal Permitting System, and the Division's Geographic Information Systems.

The staff analyzes business processes and deploys solutions to improve business efficiencies. Additionally, IT staff routinely works with employees to support all hardware and software needs, as well as coordinate computer training.

## COMMUNICATIONS

Communications staff responsibilities include publications development, media relations, public inquiries and public records requests, website development, and other marketing and public affairs support.

## FISCAL SERVICES

Inventory, purchasing, and fiscal responsibilities include preparing and monitoring the annual budgets and grants; developing internal budget controls and tracking all DMRM accounts; processing expenditures; revenue deposits and reconciliations; and maintaining equipment inventory and Fleet Ohio files.



(ABOVE) Active remining of a previously mined coal permit in Tuscarawas County by mine operator CCU Coal & Construction.



**Ohio Department of Natural Resources  
Division of Mineral Resources Management**

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