

**Department of Energy
HB2213 Gold Mining Study
Seventh Meeting of State Agency Component of Work Group
August 26, 2022
Buckingham, VA**

AGENDA

9:00-9:15	Welcome and Introductions	Skiffington/Work Group
9:15-9:30	Background information/Refresher	Skiffington
9:30-10:15	Discussion of Draft Outline	Workgroup
10:15-10:45	Discussion of Report Assignments	Workgroup
10:45-11:30	Discussion of Draft Permitting Section of Report & Feedback	Workgroup
11:30-12:00	Public Comment	
12:00	Adjourn	

Existing State Permitting Processes Relating to the Mining and Processing of Gold

The Virginia Department of Energy (Virginia Energy)

Virginia Energy's Mineral Mining program provides for the safe and environmentally sound production of Virginia's non-fuel minerals.

The General Assembly enacted the first mine safety and reclamation laws in 1969. In 1985, the Department of Mines, Minerals and Energy (DMME) was formed as the result of a state government reorganization. The Division of Mineral Mining was located within DMME until the agency changed its name in 2021. The Mineral Mining program within Virginia Energy currently administers and enforces the [Mineral Mine Safety Act](#) and the [Mineral Mine Reclamation Law](#) under [Title 45.2](#) of the Code of Virginia.

Some of the other State and Federal regulatory agencies that oversee the development and operation of mineral mines are the Department of Environmental Quality (discussed below), the Virginia Department of Transportation, the Virginia Marine Resources Commission, the United States Army Corps of Engineers and the federal Mine Safety and Health Administration.

Statewide, there are currently 427 mineral mines covering about 76,000 acres. These include mines producing construction materials, industrial minerals, and other products. A large portion of the minerals mined in Virginia are extracted for the construction of roads and commercial and residential buildings. However, other minerals are produced for use in manufacturing, agriculture, industrial applications, food production, landscaping and jewelry. In 2021, over 72 million tons of non-fuel minerals in Virginia and contributed approximately \$1.6 billion to the economy while providing over 6,600 direct jobs in the Commonwealth.¹

The Mineral Mining program issues mining licenses and permits, and conducts regular environmental and safety inspections. If complaints or serious accidents occur at a mineral mine, Virginia Energy inspectors will conduct investigations to determine what happened and what can be done to prevent a reoccurrence of the problem. The agency also provides safety training and other assistance to mine operators, contractors, and stakeholders.

Before a mine license and permit are issued, applicants must provide suitable operations plans, drainage and sediment control plans, groundwater impact assessments, and reclamation plans for the proposed mine operation.

Operations plans must describe how the mineral will be mined and processed, and how waste will be disposed of while minimizing the effect on the surrounding environment. Regulations require the operations plan to facilitate integration of reclamation with mining operations according to the special requirements of individual mineral types. Operators are required to conduct mining such that the amount of disturbed acres are minimized, and reclamation is to be conducted simultaneously with mining to the extent feasible. Regulations further require that mining activities must minimize the impact on water quality and quantity.

¹ <https://energy.virginia.gov/geology/MineralResources.shtml>

The operations plan shall include a description of the proposed method of mining and processing; the location of top soil storage areas; overburden, refuse, and waste disposal areas; stockpiles, equipment storage, and maintenance areas; cut and fill slopes; and roadways. The operation plan shall address plans for the storage and disposal of scrap metal, scrap tires, used lubricants, coolants, and other equipment service products, batteries, process chemicals, trash, debris, and other hazardous materials. The operation plan shall also include all related design and construction data.

The drainage plan shall consist of a description of the drainage system to be constructed before, during, and after mining; a map or overlay showing the natural drainage system; and all sediment and drainage control structures to be installed along with all related design and construction data.

The reclamation plan shall include a statement of the planned land use to which the disturbed land will be returned through reclamation, the proposed actions to assure suitable reclamation, and a time schedule for reclamation. The method of grading; removal of metal, lumber, and debris, including processing equipment; buildings; and other equipment relative to the mining operation and revegetation of the disturbed area shall be specified. Reclamation plans for underground mines shall include plans for closing or securing all entrances to underground workings.

In addition to these plans, a permit application must also contain a map. The map must show required features on the mine site, and sensitive features within 500 feet of the permit boundary. Sensitive features include state waters, cemeteries, oil and gas wells, underground mine workings, public utilities and utility lines, buildings, roads, schools, churches, and occupied dwellings.

The initial permit application requires that all property owners within 1,000 feet of the permit boundary be notified that a mine license has been requested. Those persons may request a public hearing as part of the permit review process.

Adjacent property owners often ask about screening and set-backs. Screening is required to improve the appearance of the mine site from public roads, public buildings, and occupied dwellings. Screening also helps to reduce the effects of noise and dust. Screening may be provided by earthen berms, walls, fences, planted barriers, or undisturbed forest. In addition, no cut or fill slopes are allowed within 25 feet of an adjacent property boundary without the written permission of the property owner and no disturbance of any kind is allowed within 5 feet of an adjacent property owner.

Upon review and approval of the mine operations plan, a performance bond must be furnished by the permittee to insure final reclamation of the mine site. The required bond is \$3000 per disturbed acre. Bond must be posted before acreage is disturbed and will not be refunded until reclamation meets the approved post mining land use.

Drainage and sediment controls must be installed before any other land disturbing activities. Internal roads and yards must be maintained to control dust and prevent tracking onto state roads. Blasting must be designed to prevent dangerous off-site effects, supervised by certified persons, and monitored with seismographs.

After permitting, the site is inspected for compliance with the approved mine operations plan and the mineral mining laws and regulations. In most cases, two inspections are made each year for safety and health and environmental compliance.

The Mineral Mining program has:

- the right to access a mine for unannounced inspections,
- the ability to take enforcement actions to require compliance with the law and regulations, and
- the authority to revoke a permit and forfeit bond, if necessary.

Mine employees and stakeholders have the right to contact the Mineral Mining program with safety or environmental complaints. Complaints must be kept confidential to protect the individuals making them. All complaints require an investigation by mine inspectors.

State laws and regulations allow Virginia Energy to oversee most of what takes place on a mine site, but they do not address things such as:

- Land use or zoning.
- Hours of operation.
- Offsite noise levels.
- Traffic on public roads.

These topics are generally regulated by the locality in which the mine is located.

Department of Environmental Quality (DEQ)

DEQ administers many of Virginia's environmental permitting programs. This includes programs under the Clean Air Act (CAA), Clean Water Act (CWA) and the Resource Conservation and Recovery Act (RCRA) which have been delegated to DEQ by the Environmental Protection Agency (EPA) and include essentially the same environmental requirements for regulated activities. These major delegated programs would address any regulated air emissions, point source (wastewater/stormwater) discharges to state waters, and solid and hazardous waste management, storage and disposal requirements. In addition to the federally delegated programs, DEQ also administers several state only permitting programs including the Virginia Water Protection Program (wetlands), Groundwater Withdrawal, and Virginia Pollution Abatement (VPA).

A specific gold mining project proposal and permit applications would be needed to accurately identify all required permits. Some likely permit programs that could apply to mining activity includes:

- Virginia Pollutant Discharge Elimination Program (VPDES) permit for any process or stormwater point source discharges to state waters. This permit process includes evaluation of proposed effluent pollutant concentrations, discharge volumes and treatment systems, and the proposed receiving stream conditions to develop protective permit limitations. These limitations can include technology based, industrial sector, best

management practices and water quality based requirements to ensure protection of state waters.

- New Source Review (NSR) permit for any stationary sources emitting regulated air pollutants in quantities requiring permit coverage. This permit may contain requirements to control criteria, hazardous or toxic air pollutants as well as best management practices and operational controls. All NSR permits require stationary sources to utilize the best available control technology (BACT) for any regulated air pollutants.
- Virginia Water Protection Program (VWP) permit may be required depending on the location of a proposed operation and water use needs. If wetland areas are impacted, a permit is required to avoid and minimize impacts to the extent practicable and provide compensation for any wetland impacts. A permit may also be required if the operation proposes to withdraw surface water in volumes large enough to require regulation.
- Groundwater Withdrawal permit may be needed if an operation is located in the Groundwater Management Area (basically east I95) and proposes to withdraw groundwater in sufficient quantity to be regulated.
- RCRA requirements (subtitle I) may apply for petroleum products stored in sufficient quantities in tanks above or below ground. Additionally, any hazardous or solid wastes, depending on the use or management of the materials may require regulation under subtitle C or D).
- Virginia Pollution Abatement (VPA) permits may be utilized to authorize pollutant management activities including, but not limited to, animal feeding operations, storage or land application of sewage, sludge, biosolids, industrial waste or other waste; or the complete reuse or recycle of wastewater. These permits do not authorize any point source discharge of pollutants to state waters.

DEQ regulatory requirements for any proposed mining operation are at least as stringent as federal requirements and would include the applicability of any additional state environmental program requirements.

The Virginia Department of Health (VDH)

Waterworks

VDH's Office of Drinking Water (ODW) implements the federal Safe Drinking Water Act (SDWA), 42 U.S.C. Section 300f et. seq, through the Virginia Waterworks Regulations (12VAC5-590). ODW provides regulatory oversight for public water systems (waterworks), which are defined as serving water to at least 25 persons 60 days out of the year. When this threshold determination is met, there are sampling, monitoring, and reporting requirements for certain drinking water contaminants.

The State Health Commissioner has authority to issue an emergency order to protect public health from imminent dangers. In most cases, emergency responses are left up to the waterworks owners and operators most familiar with the waterworks' design and operation, condition of infrastructure, system capabilities, and governing resources. ODW typically provides a supporting role by providing technical assistance, information to various entities and waterworks, and other compliance assistance as needed. Most incidents involve water main breaks, equipment failures, pressure loss, or boil water notices.

Private Wells, Springs, and Cisterns

Private water supplies serve a single user or occasionally a small group of users that do not qualify as a waterworks, and can be for either potable or non-potable uses. Private water supplies include residential water wells, agricultural wells, industrial wells, and geothermal wells. Developed springs and cisterns are also private water supplies but are not used as frequently in the Commonwealth.

The Office of Environmental Health Services (OEHS) and local health departments regulate private water wells under the provision of the Private Well Regulations (12 VAC 5-630-10 et seq.). Prior to 1982 there were no regulations for construction or location of private wells. From 1982 to 1990 VDH regulated the construction and location of private wells when installed in conjunction with an onsite sewage system. In 1990, the Board of Health promulgated the Private Well Regulations in response to amendments to 32.1-176.2 and 32.1-176.4 of the Code of Virginia. These regulations set minimum construction standards and horizontal setbacks from potential sources of contamination for all private water wells. Additionally, they require bacteriological testing of the water at the time of initial construction or rework for all private residential drinking water wells (Class III wells). Revisions adopted in 2012 include minimum storage capacity and yield requirements for residential drinking water wells. VDH estimates there to be more than 700,000 private wells in the Commonwealth. VDH does not have a reliable inventory of all private water supplies because the construction of many private water wells predated the Board of Health's regulatory program.

The Private Well Regulations do not address the chemical or radiological quality of the water from private water wells or mandate periodic on-going testing of the water from private wells. The only water quality standard for private water wells in Virginia is the requirement that private drinking water wells are free of bacteriological contamination at the time they are approved for use. Bacteriological requirements do not apply to non-potable private wells such as agricultural wells. VDH does not have the authority to implement additional water quality standards for private water supplies.

Developed springs and cisterns should only be considered when no other source of potable water is feasible. The VDH Sewage Handling and Disposal Regulations provide minimum separation distances between onsite sewage disposal systems and developed springs or cisterns. Minimum construction standards are meant to mitigate the risk of pollution in developed springs and cisterns. However, VDH does not have the authority to implement water quality standards, including bacteriological contamination, for developed springs and cisterns.