Advanced Skill Certificate in Environmental Management for Mining

Mine Site Rehabilitation and Closure

Acid Mine Drainage (AMD)

Acid mine drainage is the outflow of acidic water from a mining site, often a result of the exposure of sulfide-containing minerals to air and water. AMD can lead to significant environmental damage, including the contamination of surface water and groundwater, and the destruction of aquatic habitats.

Related terms: Mine site rehabilitation, water treatment, environmental management.

Bonding

Bonding is a financial assurance mechanism used in the mining industry to ensure that sufficient funds are available to cover the costs of rehabilitating a mining site once mining operations have ceased. Bonding can take the form of a cash deposit, a surety bond, or a corporate guarantee.

Related terms: Financial assurance, mine site rehabilitation, closure planning.

Closure Planning

Closure planning is the process of developing a comprehensive plan for the safe and effective closure of a mining site. The plan should address all aspects of the closure process, including the rehabilitation of the site, the management of residual risks, and the long-term monitoring and maintenance of the site.

Related terms: Mine site rehabilitation, financial assurance, environmental management.

Community Engagement

Community engagement is the process of involving local communities in the decision-making and planning processes related to mining operations. Effective community engagement can help to build trust and support for mining operations, and can help to ensure that the needs and concerns of local communities are taken into account.

Related terms: Social license to operate, stakeholder engagement, public relations.

Contaminated Soil

Contaminated soil is soil that has been polluted with hazardous substances, such as heavy metals, hydrocarbons, or pesticides. Contaminated soil can pose a significant risk to human health and the environment, and must be managed and treated appropriately.

Related terms: Soil remediation, environmental management, mine site rehabilitation.

Cumulative Impact Assessment

Cumulative impact assessment is the process of evaluating the combined impacts of multiple activities or projects on the environment. This type of assessment is particularly important in the context of mining, as mining operations can have significant cumulative impacts on the environment, including the degradation of water quality, the loss of biodiversity, and the fragmentation of habitats.

Related terms: Environmental impact assessment, mine site rehabilitation, environmental management.

Dewatering

Dewatering is the process of removing water from a mining site, often to facilitate mining operations or to reduce the risk of flooding. Dewatering can have significant impacts on the environment, including the lowering of groundwater levels, the drying out of wetlands, and the alteration of surface water flows.

Related terms: Environmental management, mine site rehabilitation, water management.

Due Diligence

Due diligence is the process of evaluating the potential risks and liabilities associated with a mining project, with the aim of identifying and addressing any potential issues before they become significant problems. Due diligence can include a range of activities, such as environmental assessments, social impact assessments, and legal reviews.

Related terms: Risk management, environmental management, social responsibility.

Ecosystem Services

Ecosystem services are the benefits that people derive from natural ecosystems, such as clean water, food, timber, and recreation. Mining operations can have significant impacts on ecosystem services, including the degradation of water quality, the loss of biodiversity, and the alteration of landscapes.

Related terms: Environmental management, mine site rehabilitation, sustainability.

Environmental Impact Assessment (EIA)

An environmental impact assessment (EIA) is a process of evaluating the potential environmental impacts of a proposed project or activity. The EIA process involves identifying the potential impacts, assessing their significance, and developing measures to mitigate or avoid those impacts.

Related terms: Cumulative impact assessment, environmental management, mine site rehabilitation.

Financial Assurance

Financial assurance is a mechanism used in the mining industry to ensure that sufficient funds are available to cover the costs of rehabilitating a mining site once mining operations have ceased. Financial assurance can take the form of a cash deposit, a surety bond, or a corporate guarantee.

Related terms: Bonding, mine site rehabilitation, closure planning.

Geochemical Characterization

Geochemical characterization is the process of analyzing the chemical and physical properties of rocks, soils, and water at a mining site. This information is used to identify potential environmental risks and to develop appropriate measures to manage those risks.

Related terms: Environmental management, mine site rehabilitation, risk assessment.

Habitat Restoration

Habitat restoration is the process of restoring degraded or disturbed habitats to a functional state. In the context of mining, habitat restoration is an important component of mine site rehabilitation, and can involve activities such as the re-vegetation of disturbed areas, the creation of new habitats, and the reintroduction of native species.

Related terms: Mine site rehabilitation, environmental management, biodiversity.

Landform Design

Landform design is the process of creating stable and sustainable landforms as part of mine site rehabilitation. Landform design can involve activities such as the reshaping of landscapes, the creation of new landforms, and the rehabilitation of disturbed areas.

Related terms: Mine site rehabilitation, environmental management, land use planning.

Mine Closure

Mine closure is the process of safely and effectively closing a mining site once mining operations have ceased. The closure process involves a range of activities, including the rehabilitation of the site, the management of residual risks, and the long-term monitoring and maintenance of the site.

Related terms: Closure planning, mine site rehabilitation, environmental management.

Mine Site Rehabilitation

Mine site rehabilitation is the process of restoring a mining site to a stable and sustainable state once mining operations have ceased. Rehabilitation activities can include the re-vegetation of disturbed areas, the creation of new habitats, the rehabilitation of landforms, and the management of residual risks.

Related terms: Closure planning, financial assurance, environmental management.

Post-Closure Care

Post-closure care is the long-term monitoring and maintenance of a mining site once mining operations have ceased. Post-closure care is an important component of mine site rehabilitation, and can involve activities such as the monitoring of water quality, the management of residual risks, and the maintenance of landforms.

Related terms: Mine site rehabilitation, closure planning, environmental management.

Reclamation

Reclamation is the process of restoring a disturbed or degraded area to a stable and sustainable state. In the context of mining, reclamation is an important component of mine site rehabilitation, and can involve activities such as the re-vegetation of disturbed areas, the creation of new habitats, and the rehabilitation of landforms.

Related terms: Mine site rehabilitation, environmental management, land use planning.

Risk Assessment

Risk assessment is the process of identifying, evaluating, and prioritizing potential risks to human health and the environment. In the context of mining, risk assessment is an important component of environmental management, and can be used to identify and manage potential risks associated with mining operations.

Related terms: Environmental management, mine site rehabilitation, due diligence.

Soil Remediation

Soil remediation is the process of treating contaminated soil to remove or neutralize hazardous substances. Soil remediation can be an important component of mine site rehabilitation, particularly in cases where soil has been contaminated with hazardous substances.

Related terms: Contaminated soil, environmental management, mine site rehabilitation.

Stakeholder Engagement

Stakeholder engagement is the process of involving stakeholders, including local communities, in the decision-making and planning processes related to mining operations. Effective stakeholder engagement can help to build trust and support for mining operations, and can help to ensure that the needs and concerns of stakeholders are taken into account.

Related terms: Community engagement, social license to operate, public relations.

Sustainable Development

Sustainable development is the concept of meeting the needs of the present without compromising the ability of future generations to meet their own needs. In the context of mining, sustainable development involves balancing economic, social, and environmental considerations in the planning and operation of mining projects.

Related terms: