MINING

Mining is the extraction of valuable rocks and minerals from the Earth to supply humans with the things we want and need. Mined materials include metals, industrial minerals, aggregates and energy minerals (coal, uranium). We rely on these minerals and metals to provide things we use in our everyday lives and to make the products we use better. Copper is used in electrical wires and plumbing. Silica, limestone and kaolin are used in electronics, plastics and paper, respectively. Stone and sand are used to build our houses and roads. Coal provides light and heat. Food is grown with fertilizer or can be fortified with minerals. Everything is made from our natural resources, many of which are mined.

Mining of stone and metal has been done since prehistoric times. The modern mining process involves prospecting for ore bodies, analyzing the profit potential of a proposed mine, safely extracting the desired materials, and reclaiming the land after the mine is closed. Most of the world’s mining companies have adopted policies designed to moderate any potentially negative effects of mining operations on the environment and society. All reclamation plans must be approved before the mining process can begin. Safety has long been a concern as well, and modern practices have improved safety in mines significantly.

Subsurface Imaging Surveys are used to measure ore bodies as in this diamond mine.

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MINING ENGINEER

Mining Engineers design and implement plans that ensure the safe and efficient development of mined minerals. They design mining procedures that are used to locate, extract, and transport mined resources. Mining Engineers must obtain a bachelor’s, master’s or doctorate degree. They study mineral economics, geology, mine design and operation, hydrology, ventilation, metallurgy, safety and environmental management systems. Their responsibilities could require specialty knowledge of structural, mechanical, civil and electrical engineering.

Mining Engineers often use models of the mine to determine how the surrounding environment will be affected by the mining process and what can be done to help minimize the impact.

For more information on the importance of mined minerals in everyday life, visit www.MineralsEducationCoalition.org.