EXPLORATION

In the mining industry, exploration is a term that describes the process of searching for viable deposits of valuable mineral resources. Using geologic maps, computer modeling, the knowledge of how ore deposits are formed and other sources, Exploration Geologists identify locations that are likely to contain valuable ore deposits.

Aerial surveying followed by subsurface core sampling allows Exploration Geologists to study the composition of the prospective area. If the desired resource is identified, feasibility studies are conducted to determine the social, environmental and economic impacts of a potential mine. For example, groundwater data is used to conduct hydrological investigations. During this process, baseline environmental studies are carried out to determine mining procedures and reclamation alternatives for the particular mine site. This information is shared with Mining Engineers to determine if mining can be conducted in a safe and stable environment.

Feasibility studies are conducted to determine if mining the resource can be done cost effectively and if the potential mine will be profitable. This initial stage of the mining process, along with permitting, can take up to 20 years to ensure the best location to retrieve valuable resources has been identified.

In mining, core sampling allows Exploration Geologists to study the Earth’s composition. This information is used to determine the probability of an ore deposit in a certain area.

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EXPLORATION GEOLOGIST

Exploration Geologists combine the knowledge of how mineral deposits were formed with the physical processes that have affected them since they were created to determine the location and distribution of metals and minerals in the Earth. Exploration Geologists are responsible for identifying and assessing the location, quantity and quality of mineral deposits. They gather data from airborne and satellite sensors, and conduct fieldwork to collect and test samples.

Duties include: investigating the structure and evolution of the Earth and its mineral resources; planning mineral exploration programs; surveying and mapping geologically-promising sites; collecting, recording and analyzing geological data; ascertaining extraction risks; and advising managerial and engineering staffs on the development of reserves.

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