

SEG 2022 Conference: Minerals For Our Future

A New Paradigm for Responsible Exploration and Sustainable Mining

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The principles of responsible mining have evolved over the last few decades, following growing realization that mining as it was done in the past led to permanent degradation of the surrounding environment, health impacts to nearby residents, and regional impacts to air and water quality that were difficult if not impossible to mitigate. People both inside and outside the mining industry found themselves having to reckon with costs of mining and challenges that had always been there but were never counted.

Until recently, exploration in advance of mining was driven by the same low standards to which mining had been held in the past. The challenge for explorationists today has shifted from finding high-grade deposits or large bulk-minable deposits to deposits that can be exploited while still meeting all the requirements for responsible mining. This new challenge requires skills and knowledge that are only starting to be included in geoscience education, including the importance of social license and ethical and moral constraints that address the environment, nearby residents, and future generations.

Standards now exist against which the actions of explorationists can be measured to ensure that subsequent mining is responsible and of benefit to all parties, including future generations. Organizations like the Initiative for Responsible Mining Assurance and the International Council on Mining and Metals offer guidelines for responsible mining that translate directly to guidelines for responsible exploration. Exploration programs that are endorsed by these organizations exhibit a commitment to honor social and cultural contexts, eliminate environmental impacts and remediate past damage. By responsibly self-regulating, reducing carbon emissions, and planning for full restoration, mining can even approach a degree of sustainability and become a real force for positive change. To do this, responsible and ethical exploration and mining standards must be implemented from the very start.