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NF



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How has CSA Global's integration into ERM enhanced its capabilities?

NR: The interesting transformation since we became part of ERM three and a half years ago has bought a holistic approach to mining projects in a way that aligns with investors' expectations in terms of ESG compliance and First Nations relationships. From an early stage, we incorporate all the standard technical services like resource estimation or mining studies and put them into a framework that looks at the whole life of the asset, with an emphasis on gathering data early in a project's history that will inform optimization of that project through to closure. We did much of this before, but given ERM's breadth of expertise in the areas of community and First Nations engagement, we are now in a much stronger position to offer valuable services across the life-of-mine cycle.

What makes Ontario an advantageous location to explore and develop a mine?

NF: Ontario is a highly endowed part of the world with many commodities. It also has a significant mining history, and the province has grown significantly on the back of this industry. Toronto was basically developed to support the industry and is a short distance by flight or road from most mining areas such as Thunder Bay, Timmons, Val d'Or, and Kirkland Lake. Most people who have lived in the province for a few generations have a grandparent (other relatives or family friend) that has worked in the industry in some way, shape or form, and the familiarization of the population with mining and exploration is a great advantage. Having the stock exchange here also allows for great access to capital. Ontario is also a huge service center for the surrounding areas and the world.

How can technologies available today advance our understanding of geological data, and how does CSA Global make use of these technologies to provide miners with better context about their assets?

NR: A transformation is happening all over the industry related to data acquisition, the ability to acquire huge amounts of data and to process the data using machine learning. CSA Global has established an orebody knowledge and geometallurgical division focused on collecting optimal data from drill holes at the exploration stage to inform ore body knowledge - understanding the variability in the deposit - which ultimately impacts every aspect

of mining if that project proceeds. It impacts resource estimation, processing, understanding of material types, waste rock characterization, environmental planning, closure planning, and geotechnical characterization of mines for pit and underground stability. Advanced data analysis is a huge growth area, and we are overloaded with opportunities for our team to address issues to optimize operations at the study and operational stages. This optimization ultimately leads to minimizing impacts like carbon and waste footprint. It is a holistic view of ore bodies that did not exist previously.

What are you seeing in terms of the discrepancies between public market valuations and companies' internal valuations?

NF: There have been many recent cases where Capex and Opex projects were severely underestimated. Consequently, investors are often sceptical when they see costs reported in studies. The current inflationary period is making studies with cost numbers quickly obsolete because even though they might have been well-researched in 2018/2019, they are not applicable in today's inflationary environment.

NR: I believe the discrepancy exists due to market sentiment issues. The Australian invention, the Lion Selection Mining Clock, depicts the boom-bust cycle of the mining industry, which is driven by liquidity. In any normal cycle, we would now be moving into a bust scenario, but currently, we have the counterbalance of the electrification narrative. We are experiencing the normal mining cycle going one way, while the electric cycle is going another, and many juniors are caught up in this. Many companies are now endeavouring to turn themselves from gold to lithium companies due to their inadequately valued gold assets.

What are some of the biggest water-related challenges mining companies face?

NF: As much as we want to know the geochemistry of the rock being mined, the chemistry of the water is just as important and is an essential part of the equation because of the environmental impacts and tailings. CSA Global helps miners understand the chemistry of the water and what impact that will have on operations, processing, and waste management. ■