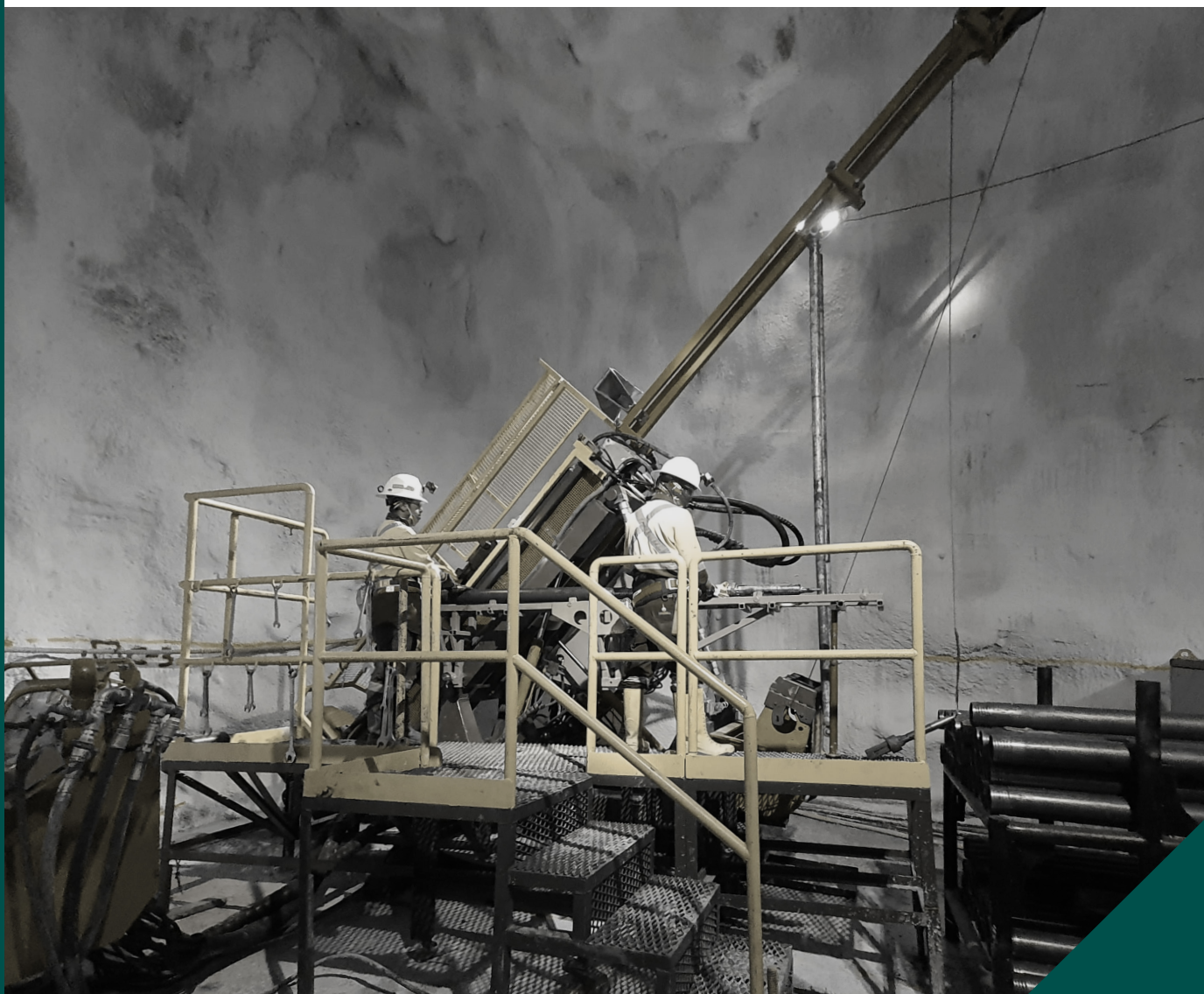


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Issue 14

November 2020

ISSN 2367-847X
www.coringmagazine.com

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The true nature of discovery

by **Doug Ramshaw**, President at Minera Alamos Inc.

What is a real exploration discovery? A discovery hole, even when it can not be classed as such, is what folks too often rely and pin their high hopes on. That hole can cause excitement both in and outside a company, and perhaps even a resulting stock market move, followed by a wild variance of directions thereafter. So, it is worth thinking a little more about the path of real discovery.

There is a good reason to look at the oft-quoted statistics that for every 1000 or so prospects only one will turn into a mine. I have always thought the number actually understates the conversion rate due to the large number of companies that seemingly lose interest in building; many of them can go downstream and build something that could turn out to be a profitable operation in practice but lacks the scale to prove interesting in theory.

Technical discoveries are probably important in the eyes of the geologist making the proclamation of what they have unearthed, but they represent more of an addition to our collective understanding than something that will grace the supply chain. Perhaps a technical discovery will fuel the chapters of geological journals that can assist the targeting and definition of something more robust that has an economic chance elsewhere. Certainly, they are important in guiding us toward the right discoveries that are necessary. However, I would like to take you on a path that entwines the technical with the feasible, on a journey

that demonstrates how one team can unlock the technical discovery of another, without understanding its true importance. I am fortunate to work with two companies that have recognized that significance, Minera Alamos (Minera) and Great Bear Resources (Great Bear).

In 2018, Minera Alamos acquired the Santana property in Sonora, Mexico through a merger with Corex Gold, the previous owner. Santana had seen its modern-day 'discovery' in 2007 and had experienced close to 30 000 m (98 425.2 ft) of drilling prior to Minera's involvement. Roughly $\frac{2}{3}$ of the meterage had focused on one specific ridgeline that represented the axis of a couple of heavily oxidized gold-bearing breccia pipes. Regional drilling was centered in the area in close proximity to the original Nicho pipe but appeared more haphazard in its planning.

Fast forward to a 2014 drilling program by Vale, a joint venture back then, and a series of nine deep holes chasing some geophysical targets and searching for a large underlying porphyry. In reality, it was always likely that the target Vale

'The curious case of Great Bear is a similar story of a technical discovery that became important years later.'

was searching for would be too deep and probably end up amongst the annals of technical discoveries. This early work had laid a path of breadcrumbs for the incoming Minera technical team. I believe that the first discovery holes at Nicho drove Corex for many years and led not only to the joint venture with Vale but to the merger with Minera as well. However, the true nature of the discovery has been made only in the recent years. It has been the ultimate value driver ever since, transforming an exploration project of more than a decade into a new gold mine.

Taking a step back from a treasure trove of historic information and thinking about the more regional geological dynamics, we see not just some breccia pipes but what led to their emplacement. Now, I am not entirely sure if Corex had not figured this out, but certainly, the team at Minera was quick to think about the significance of their location. In this case, it was along the margins of a large regional batholith some 40 km (24.9 miles) in diameter, the southern margin of which laid directly to the north of the Santana property. While the discovery at the Nicho pipe had been made,

understanding the relationship between that and the batholith margin led to additional claims being picked up and the discovery of five or six more pipes in close proximity. They collectively had much more significance, but were all similarly emplaced since the last degassing event as the batholith cooled and crystallized. Understanding that spatial and geological relationship has transformed the project. In many ways, the 2018 and 2019 scientific evaluation of what was drilled 12 years prior was the discovery that mattered.

The curious case of Great Bear is a similar story of a technical discovery that became important years later. Initially, Dixie laid fallow for several reasons: 'It is in the wrong rock' or 'There is no continuity', were the typical refrains that led to it being overlooked for so long. While in modern times the Red Lake, Canada is synonymous with the creation of Goldcorp and the staggeringly high-grade hits that transformed the historic Red Lake mine, the camp had a long history that preceded the High Grade Zone discovery. Red Lake as a district has produced around 40 Moz at an average grade of 12 g/t and

average mining width of not much more than 2 m (6.6 ft). Red Lake style mineralization had been incredibly productive and fueled work that targeted more of the same. This work also targeted the Balmer assemblage which was the host for much of the historical production and so the thought of looking outside those rock units was certainly a shift from the conventional wisdom of Red Lake. The Dixie limb 'discovery' was made by Teck in the 1980s and it prompted over 160 holes of drilling between them and numerous operators thereafter. However, a series of circumstances mischaracterized the limb zone that was already battling the wrong rocks narrative. Red Lake's history of continuity issues appeared to be on prime display at the limb zone.

Enter stage right Bob Singh and Chris Taylor who had watched the Dixie project for years prior to securing it. They were not scared by the geology and saw a target that needed fresh eyes and interpretation. The fifth hole of their maiden drilling program was better than any of the 160 that preceded it and, as more information was reinterpreted, they made the hinge zone discovery on Hole Three of the DHZ program (26.9 g/t Au over 16.35 m (53.6 ft) at ~100 m (328 ft) vertical depth) just a few short meters away from the historically drilled limb zone. Continuity issues? As it turned out that was an artifact of poor georeferencing of historical drill data that led to seemingly barren holes in the limb because of incorrect locating. Revisions to that led to the true discovery of drill collars (detailed in a Nov. 2018 press release) and suddenly demonstrated that the limb was in fact very much a continuous structure.

After decades, the true nature of the limb was uncovered. Over two years, Great Bear has made continuous discoveries at the Dixie project with every new data point guiding the understanding of the district and land package. In some cases, the discoveries took painstaking reinterpretation of historical data and in others, it was as simple as relogging and assaying core that had been drilled but never assayed because it was not classic Red Lake. Dixie is one of the finest examples of history and its conventional wisdom being turned on its head by understanding the true nature of something. Therein lies the true nature of discovery. **C**

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Ongoing earthworks during pad construction at Santana



Undrilled Goldridge breccia pipe