

International Mining

ioneer signs MoU with Caterpillar to introduce autonomous haulage at Rhyolite Ridge

Daniel Gleeson

16th February 2021

ioneer Ltd says it has completed a joint automation study with Caterpillar and the Cat dealer for Nevada, Cashman Equipment Company, and signed a memorandum of understanding with Cat that should see autonomous haulage employed at the Rhyolite Ridge lithium-boron project in Esmerelda County.

The study was targeting the early introduction of Cat's Command for hauling Autonomous Haulage System (AHS) at Rhyolite Ridge, with the results of the Rhyolite Ridge feasibility study showing the viability of AHS at the mine and how its proposed application could positively impact the overall cost structure of the operations.

Key anticipated drivers include increased operating hours, reduced cycle times and improved cycle efficiency, and decreased operating costs in terms of maintenance, fuel, labour and tyres. AHS should also lead to improved in-cycle productivity and overall utilisation, reducing the number of trucks required, ioneer said.

To date, Cat autonomous mining trucks have safely hauled more than 2 billion tonnes of material worldwide, driving over 67.6 million km without a lost-time injury in the process.

The Rhyolite Ridge operations are scheduled to start in 2023 with a fleet of Cat 785 Next Generation mining trucks (pictured) equipped with Cat Command for hauling, and the fleet is scheduled to expand significantly in year four, ioneer explained. All support equipment will feature the latest MineStar technology using high-precision GPS and real-time analytics to maximise efficiency and accuracy in material loading, it added.

This will be the first greenfield operation in North America to use AHS and will mark the expansion of Command for hauling automation technology to the 140-t class Cat 785 Next Generation mining truck.

The MoU between Cat and ioneer is for the use of Cat Command for hauling at the Rhyolite Ridge mine. The companies have engaged in preliminary, non-binding negotiations regarding the terms of the proposed transaction and intend to negotiate formal agreements in the coming months, ioneer said.

The partnership will operate through Cashman Equipment, Nevada's Caterpillar dealership since 1931. The fleet and initial auxiliary equipment will all be equipped with Cat MineStar Terrain, sold and supported by Intermountain Mining Technologies. This GPS system provides improved data for drilling, excavation, grading and dozing and should allow for better delineation of the overburden and ore for Rhyolite Ridge, according to ioneer.

As stated in the October 2020 release, the equipment and services supplied by Caterpillar during the first five years of operation is valued at around \$100 million and may be financed through Caterpillar Financial Services.

ioneer's managing director, Bernard Rowe, said: "Our agreement with Caterpillar represents much more than just the purchase of equipment; it is a true ongoing partnership as we commence production at Rhyolite Ridge.

"We are very pleased with the results of the automation study and look forward to working with Caterpillar, Cashman, and Intermountain Mining Technology in our effort to produce materials that are vital to a sustainable future. The incorporation of an autonomous haulage system and other Caterpillar technologies at Rhyolite Ridge will only further our goal to improve project safety and operational efficiency."

Jim Hawkins, General Manager of MineStar Solutions of Caterpillar Inc, said: "Caterpillar mining technologies, including Command for hauling, deliver mining companies throughout the world benefit from greater productivity, increased truck utilisation, consistent truck operation and reduced costs. We

are excited to support ioneer to deliver these same advantages to the Rhyolite Ridge greenfield mining opportunity.”

The Rhyolite Ridge project is the only one of its type known globally, according to the DFS from Fluor. Its unique mineralogical characteristics support low-cost processing of its ore into high-grade lithium and boric acid products using sulphuric acid leaching.

An initial starter pit at the project will be developed in the southwestern part of the orebody to supply ore for the first 4.5 years. In this area, lithium grades are 15% higher than the average grade for the deposit and the ore is more exposed at surface. Development of the greater pit will start once the environmental permits for this development have been granted.

The Stage 2 pit design will facilitate a larger mining area to be maintained, aiding the efficiency of the operation for another 21 years, according to Fluor. Stage 2 will involve expansion to the south and east. Finally, mining will progress to the north of the deposit. The Stage 2 pit requires prestripping to begin in year four.