ALTA 2022 26
20-27 May | Perth, Australia | Online

OVERVIEW OF THE DEVELOPMENT OF THE CENTRAL JORDAN URANIUM PROJECT

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ABSTRACT

The Jordan Uranium Mining Company (JUMCO) was established in 2013 and is owned by the Government of Jordan/Jordan Atomic Energy Commission (JAEC). With a focus on comprehensive extraction, the main objective of the company is the exploration, mining, and processing of nuclear and non-nuclear metals such as uranium, thorium, zirconium, vanadium, and any other elements present in the natural ores of Jordan. The company has advanced work in the development of the Central Jordan Uranium Project (CJUP), achieving important and valuable results related to geological exploration and resource estimation of uranium ores based on international Joint Ore Reserves Committee (JORC) requirements.

Detailed exploration has identified in-situ 8,000 tonnes reasonably assured uranium resources and 33,000 tonnes of inferred uranium resources at the Central Jordan Uranium Project. Furthermore, successful steps and major milestones were achieved in the design and engineering of the uranium extraction process. A large pilot-plant was constructed at the Central Jordan Uranium Project site and was fully commissioned in 2021. To date, several tonnes of uranium ore have been processed based on heap leaching of the uranium-bearing ore. The hydrometallurgical process developed for the project has been successfully proven to purify and concentrate the uranium and several kilograms of uranium concentrate (yellowcake) have been produced.

The company continues to optimize the hydrometallurgical processing and operating parameters to obtain all necessary data and measurements required to complete the detailed engineering design for a commercial plant. Further, these results will be utilized as input parameters for the economic feasibility study of the project. Moreover, a state-of-the-art analytical laboratory has been established at the CJUP site. The laboratory has been equipped, in cooperation with IAEA, with the latest high-tech analytical equipment to conduct chemical and physical analyses related to uranium extraction. This is considered to be an added value to CJUP and more broadly other national mining projects, for instance, rare rarth element and lithium projects. Implementation of the above CJUP phases has contributed positively to building domestic capacity, technical infrastructure, and training competent human resources in Jordan in certain specific specialized nuclear materials-related fields.

Keywords: Uranium, Heap Leaching, Ion-Exchange, New Project Development, Jordan