

Nichols Ranch ISL Uranium Mine - a case history

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The Nichols Ranch ISL Uranium Mine is located in the Powder River Basin of Wyoming, U.S.A. The mine is owned and operated by Uranerz Energy Corporation (Uranerz), a U.S. corporation headquartered in Casper, Wyoming. Nichols Ranch started operations in February 2014 and is the newest uranium mine to go into production in the USA. The uranium being extracted is hosted in a sandstone, roll-front deposit at a depth ranging from 400 to 800 feet [~ 120 to ~ 240 m]. The In-Situ Recovery (ISL) mining method is employed at the Nichols Ranch mine which is the method currently being utilized at most uranium mines in the USA. Environmental permit applications for the Nichols Ranch mine were submitted to the appropriate regulatory agencies in late 2007. It required more than three and a half years to obtain all the necessary permits and licenses to construct and operate the mine. Construction of the mining facilities and the first wellfield started in late 2011 and was completed in late 2013. Mining results to date have been better than anticipated and Uranerz expects to reach its 2014 production target. The most challenging part of getting a new uranium mine in production in the United States of America was the three plus years it took to get through the environmental permitting process. Uranerz was one of three companies in 2011 that applied for permits to construct and operate uranium mines in Wyoming at essentially the same time. The Nichols Ranch mine is licensed to produce up to two million pounds per year of uranium (as U_3O_8) [~ 770 tU] ready for shipment to the converter. At this time only the ion exchange portion of the central processing plant has been installed at Nichols Ranch with uranium loaded resin being shipped to Cameco's nearby Smith Ranch – Highland ISL uranium mine for elution, precipitation, drying and packaging under a toll processing agreement. Cameco provides Uranerz with dried and drummed yellowcake that Uranerz owns which is shipped to the converter for delivery to the company's customers.