

PRESS RELEASE

**DENISON ANNOUNCES POSITIVE INITIAL RESULTS FROM
ISR FIELD TEST PROGRAM AT PHOENIX TEST AREA 1**

Toronto, ON – August 27, 2019. Denison Mines Corp. (“Denison” or the “Company”) (DML: TSX, DNN: NYSE American) is pleased to announce positive initial test results from Test Area 1, as part of the ongoing In-Situ Recovery (“ISR”) field test program at the Company’s 90% owned Wheeler River Uranium Project (“Wheeler River”) in northern Saskatchewan, Canada.

As outlined within the Company’s Pre-Feasibility Study (“PFS”) for Wheeler River, which was completed in late 2018, additional field work is required to increase the confidence and reduce the risks associated with the application of ISR mining at the Phoenix deposit. The field testing program (outlined in Denison’s press release dated June 26, 2019, and summarized below) is focused on in-situ testing within the Phoenix orebody, using water to evaluate hydrologic conditions that can be used to assess the hydraulic connection and potential mining solution flow between a series of test wells. The information collected through this process is expected to increase the overall confidence of the application of ISR mining and to facilitate detailed mine planning as part of the Feasibility Study (“FS”) process.

Importantly, the initial test results reported within this release have confirmed hydraulic connectivity between multiple test wells completed in Test Area 1 of the Phoenix deposit – providing significant preliminary indications of the suitability of Test Area 1 for the application of ISR mining.

David Cates, President and CEO of Denison, commented, “*We are very pleased with the initial results from Test Area 1 as part of the ongoing ISR field test program. The program is the first-of-its-kind for the Athabasca Basin – assessing the suitability of the ISR mining method to the unique Phoenix deposit. The initial results from Test Area 1 are quite encouraging – with initial pump and injection tests confirming hydraulic connectivity between all of the test wells within the ore zone. We are looking forward to further results from Test Area 1 and Test Area 2, as well as the results from two large-diameter commercial scale wells planned for these Test Areas later this summer.*”

Well Installations

As part of the ISR field test program, two Pump/Injection (“P/I”) wells and nine Observation wells were successfully installed within Test Area 1 at Phoenix Zone A, as shown in Figures 1 and 2 and summarized in the table below.

| <u>Location</u> | <u>Test Well</u> | <u>Type</u> | <u>Test Formation</u> |
|-----------------|------------------|----------------|-----------------------|
| Test Area 1 | GWR-001 | Pump/Injection | Ore Zone |
| | GWR-002 | Observation | Overlying Sandstone |
| | GWR-004 | Observation | Underlying Basement |
| | GWR-010 | Pump/Injection | Ore Zone |
| | GWR-011 | Observation | Overlying Sandstone |
| | GWR-013 | Observation | Overlying Sandstone |
| | GWR-015 | Observation | Ore Zone |
| | GWR-016 | Observation | Ore Zone |
| | GWR-017 | Observation | Adjacent Sandstone |
| | GWR-020 | Observation | Multiple (VWP) |
| GWR-024 | Observation | Ore Zone | |

The P/I wells were completed at an approximate spacing of 10 metres apart using PQ sized diamond drill holes allowing for the installation of 2.5 inch diameter PVC pipe with a slotted well-screen set at the targeted depth within the ore zone. The Observation wells were completed using HQ sized diamond drill holes, allowing for the installation of 1.5 inch diameter PVC pipe with a slotted well-screen set at targeted depths within the ore zone, overlying sandstone, adjacent sandstone, or underlying basement. Test well GWR-020 contains a Vibrating Wire Piezometer (“VWP”), equipped with pressure transducers at five different depth locations – including the overburden (1 transducer), overlying sandstone (2 transducers), ore zone (1 transducer), and underlying basement (1 transducer). The four ore zone Observation wells (including GWR-020 VWP) are located either along strike or across strike, in relation to the ore zone, from the P/I wells at a spacing of between 10 and 23 metres from either of the P/I wells. All P/I and Observation wells, apart from GWR-020, were completed with inflatable packer systems installed directly above the well-screens to ensure isolation of the test formation being evaluated.

The larger diameter P/I wells allow for the completion of various pump and injection tests within the Test Area, while the Observation wells allow for the collection of important hydrologic data during the pump and injection tests.

Positive Initial Test Results from Test Area 1

Initial pump and injection tests were completed by Petrotek Corporation (“Petrotek”) by pumping water from, or injecting water into, the P/I wells installed within Test Area 1. In each of the tests completed, a hydraulic response has been observed at the other P/I well and at all four Observation wells located within the ore zone test formation (GWR-015, GWR-016, GWR-020 and GWR-024). Taken together, hydraulic responses have been observed over the entire 34 metres of strike length associated with the ore zone formation within Test Area 1 (from GWR-024 to GWR-016 and GWR-020 VWP) – representing the maximum strike length response possible in Test Area 1 given the design of the field test (see Figure 2).

A hydraulic response was also observed in one of the three overlying sandstone Observation wells (GWR-013) but was not observed in the underlying basement well (GWR-004) or the adjacent sandstone well (GWR-017). The lack of response in GWR-004 is considered potentially indicative of low permeability conditions within the basement units below the Phoenix deposit – which is generally supportive of the Company’s expectation that the basement units below the Phoenix deposit will be able to provide containment of the ISR mining solution in conjunction with the planned freeze dome.

The primary purpose of the initial tests within Test Area 1 was to test for hydraulic connectivity between wells and collect a preliminary data set. This information will be used to inform the location of a large-diameter (5 inch) commercial-scale well (“CSW”) within the Test Area. The large-diameter well designs are expected to allow for the insertion of larger pumps and additional downhole equipment that will facilitate CSW pump and injection tests and the evaluation of certain permeability enhancement techniques as part of a comprehensive program of hydrological data collection within the Test Area.

Following the completion of various pump and injection tests, permeameter testing, hydraulic packer testing and downhole geophysical logging within the Test Area; quantitative analysis and integration of data from the various tests will be used to prepare a hydrogeological model. The model will be used to simulate ground water flow and evaluate system sensitivity to key parameters such as hydraulic conductivity, specific storage, dispersivity, porosity, as well as head and flow vectors. The model will form an important basis for detailed mine planning required as part of the FS process.

Additional Background on the ISR Field Test Program

Denison has engaged Petrotek to facilitate the design and implementation of ISR field testing at Phoenix. Petrotek specializes in technical evaluation and field operations regarding subsurface fluid flow and injection projects, with experience ranging from feasibility studies to facility operation. The firm has more than 20 years of experience in the ISR uranium mining industry and currently provides consulting services to each of the ISR uranium miners in the United States.

Petrotek and Denison have designed an ISR field testing program specific to the unique geological characteristics of the Phoenix deposit. The testing program aims to provide hydrogeological testing across four Test Areas of Phoenix Zone A (see Figure 1), covering approximately 65% of the Indicated Mineral

Resource estimated for the deposit. The Test Areas have been selected with the objective of covering each of the various fluid flow domains, and combinations thereof, expected to exist within the deposit. The domains have been defined from detailed geological databases and associated models, with the intention that the Test Areas are collectively representative of the deposit as a whole. Data acquired from the ISR field testing program will be utilized to create an integrated hydrogeological model, which will form the basis for ISR wellfield and freeze dome design necessary for the FS and to support the environmental assessment process.

The summer 2019 program is designed to assess Test Area 1 and Test Area 2. The remaining Test Areas (Test Area 3 and 4) are expected to be evaluated in future years to support the completion of a FS. The main objective within each Test Area is to efficiently establish the fundamental hydrogeologic characteristics of the orebody, the overlying sandstone and overburden formations, and the underlying basement rocks.

Additional supportive permeability and porosity tests are planned through the ore zone and are expected to include hydraulic conductivity tests (packer testing) and downhole geophysics (nuclear magnetic resonance and neutron), where borehole conditions allow. Mineralized core samples from the ore zone, obtained in new holes or by wedging from existing boreholes, will be subject to detailed onsite geological and geotechnical logging and permeability (permeameter) testing, and will be preserved to facilitate future planned laboratory-based metallurgical test work.

About Wheeler River

Wheeler River is the largest undeveloped uranium project in the infrastructure rich eastern portion of the Athabasca Basin region, in northern Saskatchewan – including combined Indicated Mineral Resources of 132.1 million pounds U_3O_8 (1,809,000 tonnes at an average grade of 3.3% U_3O_8), plus combined Inferred Mineral Resources of 3.0 million pounds U_3O_8 (82,000 tonnes at an average grade of 1.7% U_3O_8). The project is host to the high-grade Phoenix and Gryphon uranium deposits, discovered by Denison in 2008 and 2014, respectively, and is a joint venture between Denison (90% and operator) and JCU (Canada) Exploration Company Limited (10%).

A PFS was completed for Wheeler River in late 2018, considering the potential economic merit of developing the Phoenix deposit as an ISR operation and the Gryphon deposit as a conventional underground mining operation. Taken together, the project is estimated to have mine production of 109.4 million pounds U_3O_8 over a 14-year mine life, with a base case pre-tax NPV of \$1.31 billion (8% discount rate), Internal Rate of Return ("IRR") of 38.7%, and initial pre-production capital expenditures of \$322.5 million. The Phoenix ISR operation is estimated to have a stand-alone base case pre-tax NPV of \$930.4 million (8% discount rate), IRR of 43.3%, initial pre-production capital expenditures of \$322.5 million, and industry leading average operating costs of US\$3.33/lb U_3O_8 . The PFS is prepared on a project (100% ownership) and pre-tax basis, as each of the partners to the Wheeler River Joint Venture are subject to different tax and other obligations.

Further details regarding the PFS, including additional scientific and technical information, as well as after-tax results attributable to Denison's ownership interest, are described in greater detail in the NI 43-101 Technical Report titled "Pre-feasibility Study for the Wheeler River Uranium Project, Saskatchewan, Canada" dated October 30, 2018 with an effective date of September 24, 2018. A copy of this report is available on Denison's website and under its profile on SEDAR at www.sedar.com and on EDGAR at www.sec.gov/edgar.shtml.

About Denison

Denison is a uranium exploration and development company with interests focused in the Athabasca Basin region of northern Saskatchewan, Canada. In addition to the Wheeler River project, Denison's Athabasca Basin exploration portfolio consists of numerous projects covering approximately 305,000 hectares. Denison's interests in the Athabasca Basin also include a 22.5% ownership interest in the McClean Lake joint venture ("MLJV"), which includes several uranium deposits and the McClean Lake uranium mill, which is currently processing ore from the Cigar Lake mine under a toll milling agreement, plus a 25.17% interest in the Midwest and Midwest A deposits, and a 66.51% interest in the J Zone and Huskie deposits on the Waterbury Lake property. Each of Midwest, Midwest A, J Zone and Huskie are located within 20 kilometres of the McClean Lake mill.

Denison is also engaged in mine decommissioning and environmental services through its Denison Environmental Services division and is the manager of Uranium Participation Corp., a publicly traded company which invests in uranium oxide and uranium hexafluoride.

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Qualified Persons

The hydrogeological results and interpretations thereof contained in this release were prepared by Mr. Errol Lawrence, PG (Senior Hydrogeologist), and Mr. Aaron Payne, PG (Senior Hydrogeologist) at Petrotek, independent Qualified Persons in accordance with the requirements of NI 43-101.

The other technical information contained in this release has been reviewed and approved by Mr. Dale Verran, MSc, P.Geo, Pr.Sci.Nat., Denison's Vice President, Exploration, a Qualified Person in accordance with the requirements of NI 43-101.

Cautionary Statement Regarding Forward-Looking Statements

Certain information contained in this news release constitutes 'forward-looking information', within the meaning of the applicable United States and Canadian legislation concerning the business, operations and financial performance and condition of Denison.

Generally, these forward-looking statements can be identified by the use of forward-looking terminology such as 'plans', 'expects', 'budget', 'scheduled', 'estimates', 'forecasts', 'intends', 'anticipates', or 'believes', or the negatives and/or variations of such words and phrases, or state that certain actions, events or results 'may', 'could', 'would', 'might' or 'will be taken', 'occur', 'be achieved' or 'has the potential to'.

In particular, this news release contains forward-looking information pertaining to the following: the field test program (including drilling) and evaluation interpretations, activities, plans and objectives; the results of the PFS and expectations with respect thereto; development and expansion plans and objectives, including plans for a feasibility study and environmental assessments for Wheeler River; and expectations regarding its joint venture ownership interests and the continuity of its agreements with its partners.

Forward looking statements are based on the opinions and estimates of management as of the date such statements are made, and they are subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of Denison to be materially different from those expressed or implied by such forward-looking statements. Denison believes that the expectations reflected in this forward-looking information are reasonable but no assurance can be given that these expectations will prove to be accurate and results may differ materially from those anticipated in this forward-looking information. For a discussion in respect of risks and other factors that could influence forward-looking events, please refer to the factors discussed in Denison's Annual Information Form dated March 12, 2019 under the heading 'Risk Factors'. These factors are not, and should not be construed as being exhaustive.

Accordingly, readers should not place undue reliance on forward-looking statements. The forward-looking information contained in this news release is expressly qualified by this cautionary statement. Any forward-looking information and the assumptions made with respect thereto speaks only as of the date of this news release. Denison does not undertake any obligation to publicly update or revise any forward-looking information after the date of this news release to conform such information to actual results or to changes in Denison's expectations except as otherwise required by applicable legislation.

Cautionary Note to United States Investors Concerning Estimates of Measured, Indicated and Inferred Mineral Resources and Probable Mineral Reserves: *This news release may use the terms 'measured', 'indicated' and 'inferred' mineral resources. United States investors are advised that while such terms have been prepared in accordance with the definition standards on mineral reserves of the Canadian Institute of Mining, Metallurgy and Petroleum referred to in Canadian National Instrument 43-101 Mineral Disclosure Standards ("NI 43-101") and are recognized and required by Canadian regulations, the United States Securities and Exchange Commission ("SEC") does not recognize them. 'Inferred mineral resources' have a great amount of uncertainty as to their existence, and as to their economic and legal feasibility. It cannot be assumed that all or any part of an inferred mineral resource will ever be upgraded to a higher category. Under Canadian rules, estimates of inferred mineral resources may not form the basis of feasibility or other economic studies. **United States investors are cautioned not to assume that all or any part of measured or indicated mineral resources will ever be converted into mineral reserves. United States investors are also cautioned not to assume that all or any part of an inferred mineral resource exists, or is economically or legally mineable.** The estimates of mineral reserves in this news release have been prepared in accordance with NI 43-101. The definition of probable mineral reserves used in NI 43-101 differs from the definition used by the SEC in the SEC's Industry Guide 7. Under the requirements of the SEC,*

mineralization may not be classified as a "reserve" unless the determination has been made, pursuant to a "final" feasibility study that the mineralization could be economically and legally produced or extracted at the time the reserve determination is made. Denison has not prepared a feasibility study for the purposes of NI 43-101 or the requirements of the SEC. Accordingly, Denison's probable mineral reserves disclosure may not be comparable to information from U.S. companies subject to the reporting and disclosure requirements of the SEC.

Phoenix Zone A Plan View – ISR Field Test Areas

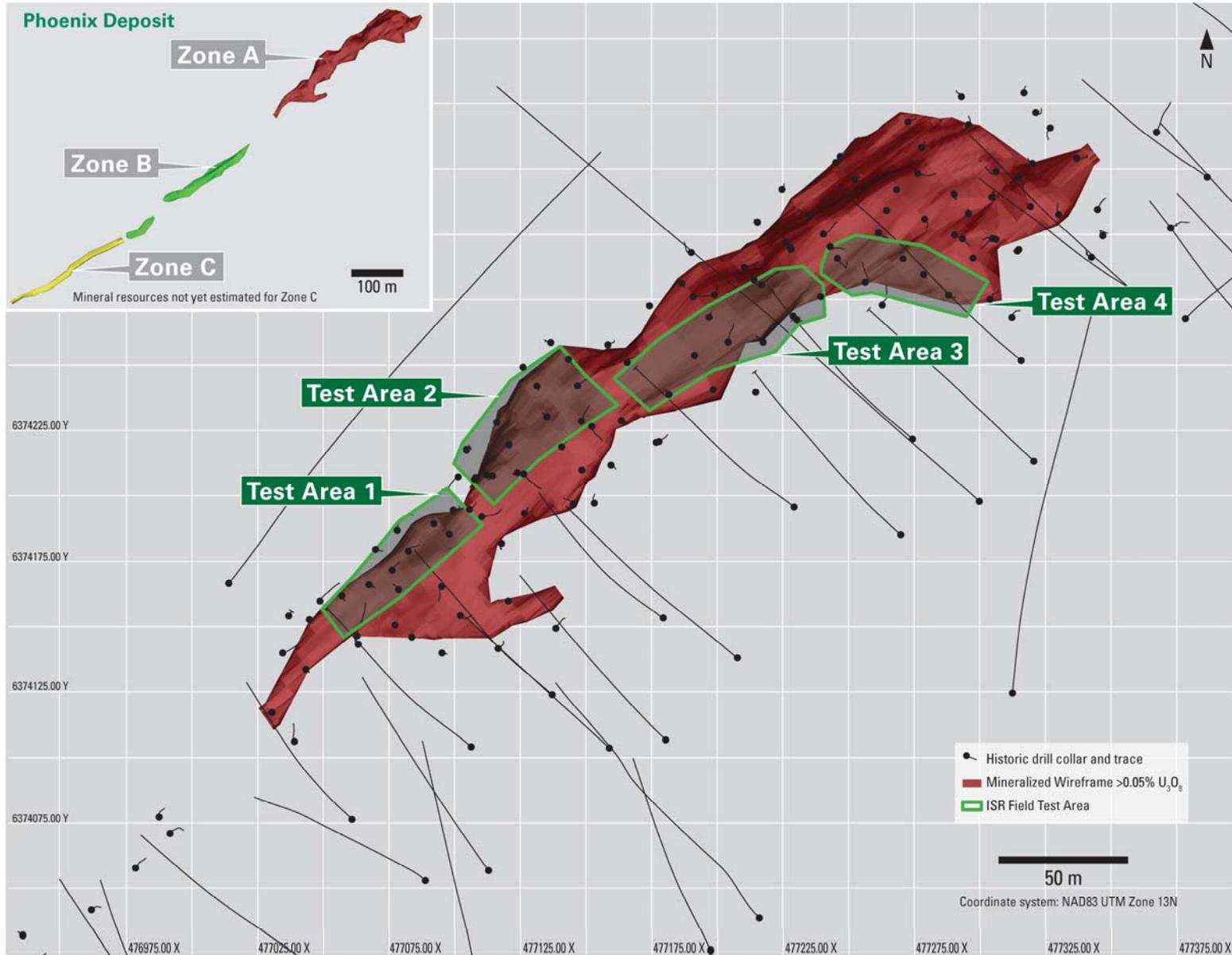


Figure 1. Phoenix Zone A plan view showing Test Areas delineated for ISR field testing.

Test Area 1 – Well Screen Locations – Plan View



Test Area 1 – Well Screen Locations – Long Section

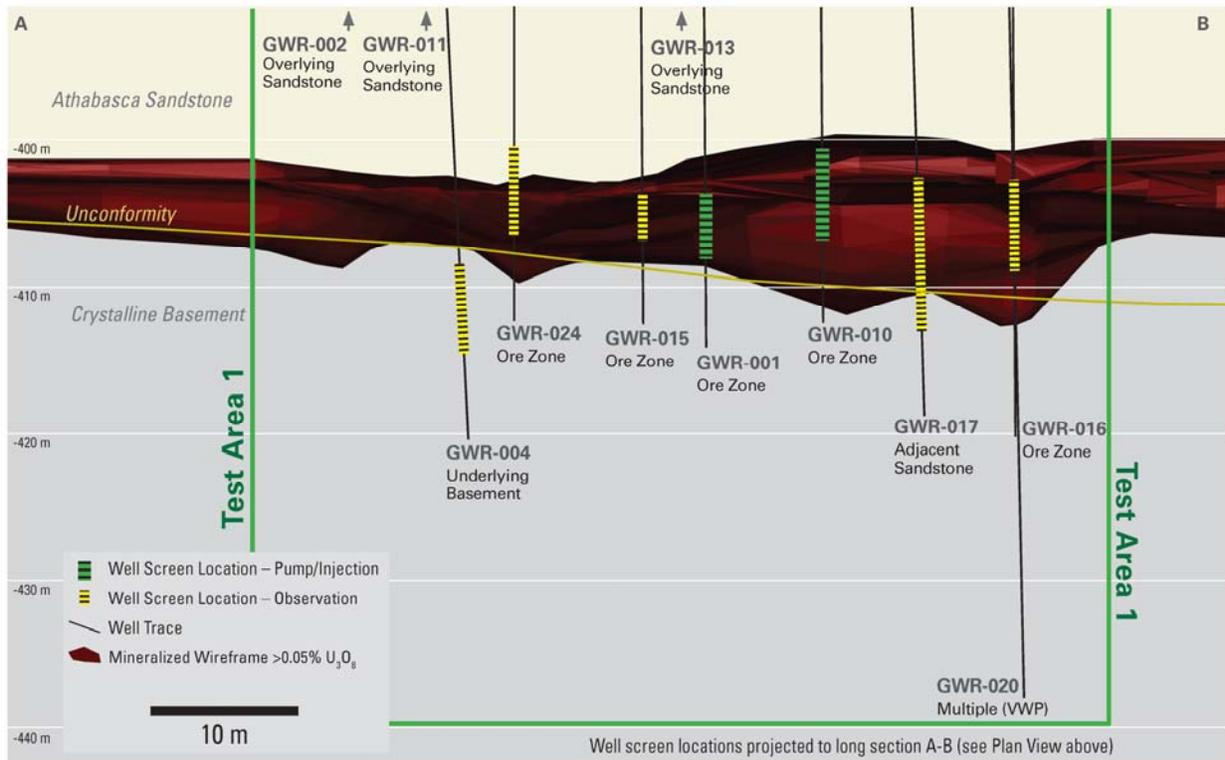


Figure 2. Plan map and long section showing Pump/Injection and Observation wells completed for ISR field testing in Test Area 1.