

# **Denison Announces Completion of ISR Field Program and Initiation of Exploration Program at Wheeler River**

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TORONTO, Oct. 28, 2020 - [Denison Mines Corp.](#) ("Denison" or the "Company") (TSX: DML) (NYSE American: DNN) is pleased to announce that field activities at Denison's 90% owned Wheeler River Uranium Project ("Wheeler River") have safely and successfully transitioned from the In-Situ Recovery ("ISR") field program at the high-grade Phoenix uranium deposit ("Phoenix"), which was initiated in July (see press release dated July 27, 2020), to a ~12,000 metre exploration drilling program designed to test initially for extensions to known mineralization at Phoenix and then advance to regional targets for the discovery of satellite uranium deposits potentially amenable to ISR mining. View PDF version

David Cates, Denison's President & CEO, commented "Having recently raised US\$19 million through a well supported public offering, Denison remains debt free and is well funded with over CAD\$29 million in cash. We are now turning our attention to finalizing our plans for 2021 and beyond, as well as completing our planned activities in 2020 &#8211; including an exciting exploration program at Wheeler River and the Preliminary Economic Assessment ('PEA') planned for the J Zone deposit on the Waterbury Lake property. I'm proud of the effort that our team has put in to make the most of 2020, despite a temporary suspension of the formal part of the Wheeler River Environmental Assessment ('EA') &#8211; carrying out important scopes of work, including the 2020 ISR field program, in order for the company to be poised for a strong future re-start to the formal EA process."

### ISR Field Program

The ISR field work completed in 2020 (the "2020 Field Program") was designed with the primary objective of building additional confidence in the results of an independent hydrogeologic "Proof of Concept" model developed for Phoenix by Petrotek Corporation ("Petrotek") for the application of the ISR mining method (see press release dated June 4, 2020). Taken together with the installation of additional environmental monitoring wells, the data collected during the 2020 Field Program is expected to support the design and permitting of further field tests to be incorporated into a future Feasibility Study ("FS").

David Bronkhorst, Denison's Vice President Operations, commented, "While the formal EA process for Wheeler River was suspended in March 2020, in response to the COVID-19 pandemic, Denison's Wheeler River project team has been busy advancing certain scopes of work during the year &#8211; including the 2020 Field Program. Our activities in 2020 have been designed to ensure the EA and future FS support activities can advance as quickly as possible, and with minimized impact to the Project schedule, following a decision to resume the formal EA process.

The 2020 ISR Field Program at Phoenix was completed safely and successfully, despite the disruptions related to COVID-19 &#8211; resulting in the collection of an extensive hydrogeological data set based on seventeen additional pump and injection tests, permeameter test work and groundwater sampling. This work is expected to further validate and increase our confidence in the previously announced independent 'proof of concept' model developed by Petrotek."

Key elements of the completed 2020 Field Program included:

- Hydrogeological test work
  - 17 pump and injection tests were completed between Test Area 1 and Tests Area 2 at Phoenix Zone A (see Figure 1 for Wheeler River location, and Figure 2 for Phoenix);
  - Data collected from these tests will supplement the extensive dataset acquired as part of the 2019 ISR field testing program (see press release dated December 18, 2019), and is expected to provide additional insight into individual well capacities and the overall hydrogeological network of the deposit areas.
- Permeameter analysis
  - Over 1,000 additional drill core samples were collected from historic holes, dried, and analyzed for permeability and porosity;
  - Samples were selected to refine our understanding of the mineralized hydrogeologic horizons, including the low permeability basement rocks and the overlying sandstone.
- Rock mechanics

- Mineralized core samples were collected and shipped to SNC Lavalin (Saskatoon) for rock mechanics tests, including tensile strength and uniaxial compressive strength;
- The samples targeted various previously identified hydrogeologic units, including the Upper Clay Zone, Lower Clay Zone and High-Grade Friable Zone;
- Results from these tests will be utilized to better define the design of certain permeability enhancement techniques for subsequent field programs.
- Groundwater sampling
- Groundwater samples were collected from eight different environmental monitoring wells in the Phoenix deposit area;
- Sampling occurred at several horizons within each well including the horizons above, below, and within the Phoenix ore body;
- Samples have been submitted to the Saskatchewan Research Council ("SRC") for analysis. Once received, data from these samples will be utilized to support the design and permitting of additional field tests expected to be incorporated into a future FS.
- Installation of additional environmental monitoring wells
- Five additional monitoring wells were installed in two clusters, located approximately 500 metres northeast of Phoenix, and 750 metres southeast of Phoenix (see Figure 2);
- The additional monitoring wells will allow for the collection of groundwater flow information at locations further away from the Phoenix deposit than had been previously studied, providing additional data for the site groundwater model which will allow for long-term monitoring and the modelling of ground water impacts through construction, operations and decommissioning, each of which will be an important element of the effects assessments in an Environmental Impact Statement ("EIS").

### Exploration Drilling Program

The 2020 exploration drilling program at Wheeler River commenced late in the third quarter. The program is expected to include ~12,000 metres of diamond drilling, planned in 27-30 drill holes. The drill program is designed to be executed in several phases, with an initial focus on the area proximal to Phoenix where further exploration and delineation drilling is warranted to identify potential additional mineralization that could be included as part of a future FS. Of particular focus is the area around Zone B, where previous exploration results suggest that the potential for additional mineralization remains outside of the current extents of the estimated mineral resource. The program has also been designed to test for additional mineralization at Phoenix Zone C (where there are previous mineralized intercepts, but where no mineral resource is currently estimated) and to explore regional target areas elsewhere on the property with the potential to produce a discovery that could become a satellite deposit potentially amenable to ISR mining.

As of October 27<sup>th</sup>, the Company has completed approximately 5,460 metres of drilling, representing roughly 44% of the total planned for the 2020 exploration program. A total of 12 holes have been completed to target depth, as well as three holes that were abandoned due to either excessive deviation or drilling difficulties. All drill holes completed to date have been located outside of the previously delineated mineralized zones for Phoenix, with results highlighted by the following mineralized intercepts:

- WR-765D1 (Phoenix Zone B) intersected uranium mineralization straddling the unconformity contact, grading 0.39% eU<sub>3</sub>O<sub>8</sub> over 3.8 metres (from 399.85 to 403.65 metres) including approximately 15.0 metres east of WR-333 (which previously intersected 14.6% U<sub>3</sub>O<sub>8</sub> over 6.0 metres); and
- WR-771 (Phoenix Zone C) encountered uranium mineralization approximately 4 metres below the unconformity contact, grading 0.86% eU<sub>3</sub>O<sub>8</sub> over 1.2 metres (from 375.15 to 376.35 metres) including approximately 28.8 metres to the southwest of WR-368 (which previously intersected 1.59% U<sub>3</sub>O<sub>8</sub> over 2.0 metres)

The remaining targets at Phoenix will be re-prioritized by incorporating the results of the recently completed drill holes. Dependent on results, exploration drilling proximal to Phoenix is expected to be completed in early to mid-November, with the expectation that the focus of the exploration drill program will shift to regional drill targets that have been prioritized based on their potential to result in the discovery of satellite uranium deposits that may be amenable to ISR mining.

The Company reports results as preliminary radiometric equivalent grades ("eU<sub>3</sub>O<sub>8</sub>"), derived from a calibrated downhole total gamma probe, during active exploration programs and subsequently reports definitive assay grades following sampling and chemical analysis of the mineralized drill core. Radiometric equivalent probe results are subject to verification procedures by qualified persons employed by Denison prior to disclosure. For further details on the total gamma downhole probe methods employed by Denison,

QAQC procedures and data verification procedures please see Denison's Annual Information Form dated March 13, 2020 filed under the Company's profile on SEDAR ([www.sedar.com](http://www.sedar.com)).

## 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<sub>3</sub>O<sub>8</sub> (1,809,000 tonnes at an average grade of 3.3% U<sub>3</sub>O<sub>8</sub>), plus combined Inferred Mineral Resources of 3.0 million pounds U<sub>3</sub>O<sub>8</sub> (82,000 tonnes at an average grade of 1.7% U<sub>3</sub>O<sub>8</sub>). 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 Pre-feasibility Study ("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<sub>3</sub>O<sub>8</sub> 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<sub>3</sub>O<sub>8</sub>. 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](http://www.sedar.com) and on EDGAR at [www.sec.gov/edgar.shtml](http://www.sec.gov/edgar.shtml).

Given recent social, financial and market disruptions, Denison has suspended certain activities at Wheeler River, including the formal EA process, which is on the critical path to achieving the project development schedule outlined in the PFS. The Company is not currently able to estimate the impact to the project development schedule outlined in the PFS, and users are cautioned against relying on the estimates provided therein regarding the start of pre-production activities in 2021 and first production in 2024.

## 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 over 250,000 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 66.71% 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 engaged in mine decommissioning and environmental services through its Closed Mines group (formerly Denison Environmental Services), which manages Denison's Elliot Lake reclamation projects and provides post-closure mine care and maintenance services to a variety of industry and government clients.

Denison is also the manager of [Uranium Participation Corp.](#), a publicly traded company which invests in uranium oxide and uranium hexafluoride.

## Qualified Persons

The technical information contained in this release related to the 2020 ISR Field Program and the Wheeler River PFS has been reviewed and approved by Mr. David Bronkhorst, P.Eng, Denison's Vice President, Operations, who is a Qualified Person in accordance with the requirements of NI 43-101.

The technical information contained in this release related to the Exploration Drilling Program has been reviewed and approved by Mr. Andrew Yackulic, P. Geo, Denison's Director, Exploration, who is 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 results of the 2019 Field Test and 2020 Field Program, including the hydrogeologic model, and their underlying assumptions and interpretations; the 2020 exploration drilling program, including its intended scope and timing, objectives and interpretations; the Company's intentions with respect to the Waterbury PEA; the current and continued use and availability of third party technologies for testing; the results of the PFS and expectations with respect thereto; development and expansion plans and objectives, including the Company's intentions with respect to the resumption of the EA and feasibility study support activities and the potential impacts to the project schedule plans for a feasibility study; the duration and scope of impacts of the COVID-19 pandemic and affiliated operational adjustments; 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. For example, the results of the 2020 exploration drilling program, 2019 Field Test, hydrogeologic model and/or 2020 Field Program discussed herein may not be maintained after further testing or be representative of actual conditions within the Phoenix deposit. In addition, Denison may decide or otherwise be required to discontinue the 2020 Field Program, exploration drilling program or other testing, evaluation and development work at Wheeler River if it is unable to maintain or otherwise secure the necessary resources (such as testing facilities, capital funding, regulatory approvals, etc.) or operations are otherwise affected by COVID-19 and its potentially far-reaching impacts. 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 13, 2020 or subsequent quarterly financial reports 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 press 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, these terms are not defined under Industry Guide 7 under the United States Securities Act and, until recently, have not been permitted to be used in reports and registration statements filed with the United States Securities and Exchange Commission ('SEC'). '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. In addition, the terms "mineral reserve", "proven mineral reserve" and "probable mineral reserve" for the purposes of NI 43-101 differ from the definitions and allowable usage in Industry Guide 7. Effective February 2019, the SEC adopted amendments to its disclosure rules to modernize the mineral property disclosure requirements for issuers whose securities are registered with the SEC under the Exchange Act and as a result, the SEC now recognizes estimates of "measured mineral resources", "indicated mineral resources" and "inferred mineral resources". In addition, the SEC has amended its definitions of "proven mineral reserves" and "probable mineral reserves" to be "substantially similar" to the corresponding definitions under the CIM Standards, as required under NI 43-101. However, information regarding mineral resources or mineral reserves in Denison's disclosure may not be comparable to similar information made public by United States companies.

Figure 1: Location Map of Wheeler River Showing Existing Regional Infrastructure.

Figure 2: Plan Map of Phoenix Showing Location of 2020 ISR Field Test Work

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