Denison Mines Corp.
1100 – 40 University Ave
Toronto, ON M5J 1T1
www.denisonmines.com

PRESS RELEASE

Denison Receives Approval to Construct and Operate Phoenix Feasibility Field Test Facility from Saskatchewan Minister of Environment

Toronto, ON – July 12, 2022. Denison Mines Corp. ("Denison" or the "Company") (TSX: DML; NYSE American: DNN) is pleased to announce that it has received approval from the Province of Saskatchewan to prepare, construct, and operate the facilities required to carry out the In-Situ Recovery ("ISR") Feasibility Field Test ("FFT") planned for the Phoenix deposit at the Company's 95% owned Wheeler River project.

The approval was granted by the Saskatchewan Minister of Environment (the "Minister") and authorizes Denison to operate "pollutant control facilities" – which is typical for mining operations and allows for the management of material recovered from mineral extraction through to waste water treatment, discharge, and storage (as applicable). The approval followed the completion of a process involving the review of and consultation on the Company's permit application and supporting materials related to the FFT.

Kevin Himbeault, Denison's Vice President of Plant Operations & Regulatory Affairs, commented ***"We are pleased to have received approval from the Province of Saskatchewan to prepare and operate the Phoenix FFT. This is a significant advancement for the FFT, which is a key step in the process of de-risking the proposed Phoenix ISR uranium mining operation and is expected to provide important details to support the ongoing Feasibility Study. Overall, Denison was pleased with the permit submission, review, and community consultation process – as it reflected a shared objective of all interested parties to ensure the safe and environmentally responsible operation of the facilities required to complete the FFT."***

David Cates, Denison's President & CEO, added ***"The permitting of the FFT is an excellent demonstration of our team's technical and regulatory capabilities. The FFT represents a first-of-its-kind test of a uranium mining method that is new to Canada. Successfully navigating the regulatory environment in Saskatchewan to develop conditions for the oversight of a novel advanced field test is a notable accomplishment for both the Denison team and the regulatory team from the Ministry of the Environment."***

With receipt of the Approval to Operate Pollutant Control Facilities from the Minister, preparation and construction of the FFT facilities, described below, are now fully authorized and are expected to commence shortly.

The Canadian Nuclear Safety Commission has determined that a Nuclear Substance License is also required for Denison to possess and store a nuclear substance (mineralized solution containing uranium) resulting from the operation of the FFT. The process to obtain this license is well advanced, and the licence is expected to be received before the site preparation and commissioning activities are completed.

This press release constitutes a "designated news release" for the purposes of the Company's prospectus supplement dated September 28, 2021, to its short form base shelf prospectus dated September 16, 2021.

Feasibility Field Test

The FFT is designed to use the existing commercial-scale ISR test pattern ("Test Pattern"), installed at Phoenix in 2021 (see news releases dated July 29, 2021 and October 28, 2021), to facilitate a combined assessment of the Phoenix deposit's hydraulic flow properties with the leaching characteristics that have been assessed through the metallurgical core-leach testing program. Overall, the FFT is intended to provide further verification of the permeability, leachability, and containment parameters needed for the successful application of the ISR mining method at Phoenix and is expected to validate and inform various feasibility study design elements – including the production and remediation profiles expected for the project.

The operation of the FFT is planned to occur in three phases: (1) the leaching phase, (2) the neutralization phase, and (3) the recovered solution management phase.

The majority of the test activities (leaching and neutralization phase) will occur within an estimated 60-day operating time frame, with the construction and placement of temporary facilities commencing approximately two months prior to the commissioning of the test facilities and initiation of the leaching phase.

The leaching phase is designed to assess the effectiveness and efficiency of the leaching process in the mineralized zone, at a depth of approximately 400m below the surface. The leaching phase includes the controlled injection of an acidic solution into a portion of the existing Test Pattern within the mineralized zone (the "Leaching Zone") and the recovery of the solution back to the surface using existing test wells. The recovered solution from the leaching phase is expected to contain dissolved minerals, including uranium, copper, iron, molybdenum, and zinc. Once on surface, the recovered solution (up to a maximum of 500 cubic metres) will be stored temporarily in tanks in accordance with approved environmental protection containment measures.

The neutralization phase includes the recovery of the remainder of the leached mineralized solution from the Leaching Zone and is intended to verify the efficiency and effectiveness of the process for returning the Leaching Zone to near baseline conditions. During this phase, a mild alkaline (basic) solution will be injected into the Leaching Zone to neutralize the area and reverse the residual effects of the acidic solution injected during the leaching phase. The recovered solution from the neutralization phase (up to a further maximum of 500 cubic metres) will also be stored temporarily on surface in tanks in accordance with approved containment measures.

The recovered solution management phase involves separating the solution recovered from both the leaching phase and the neutralization phase into (i) mineralized precipitates and (ii) a neutralized treated solution. The mineralized precipitate will be temporarily stored on surface in steel tanks and the neutralized treated solution will be re-injected into a designated subsurface area.

FFT Facilities

Temporary surface facilities required to complete the FFT are planned to be installed at the Phoenix site during the third quarter of 2022. The procurement of necessary materials, equipment, and supplies, as well as detailed engineering of the facilities are already well advanced.

The FFT site is planned to include the following facilities and infrastructure:

- **Tanker pad** – for storage of tanker trucks used for delivery of reagents to site.
- **Injection solution preparation module** – a modular unit where groundwater will be mixed with reagents to prepare the injection solution.
- **Test pattern coverall building** – a tension-fabric building to be built over the test area.
- **Recovered solution surge tank** – the surge tank will receive recovered solution from the test wells.
- **Solution storage tanks** – six (6) tanks are expected to be installed to provide a total of 1,000 cubic metres of solution storage. These tanks are designed to receive solution pumped from the recovered solution surge tank for temporary storage before separating the recovered solution into mineralized precipitates and a neutralized treated solution during the recovered solution management phase of the FFT.
- **Piping** – double-walled transfer piping will run from the recovered solution surge tank (next to the test wells) to the solution storage tanks.
- **Recovered solution management modules** – two modular units will be mobilized to site that contain equipment for managing the recovered solutions.
- **Mineralized precipitate storage tanks** – during the recovered solution management phase, the mineralized precipitate will be transferred into fully enclosed and lockable storage tanks. The mineralized precipitate storage tanks will be placed in a secure fenced area for temporary storage.
- **Laboratory** – a mobile laboratory will be located on site and equipped for bench-scale testing of samples.

- **Construction / Operations Centre** – a mobile office will serve as a construction office and operations centre as well as the main gate entry point for the site.
- **Wash car and change room** – a mobile facility will allow staff to change and wash before and after each shift at the Phoenix site.
- **Perimeter fence** – the entire area (~8,820 square meters) will be fenced and gated to control access and minimize interactions with wildlife.

All civil earthworks required for the FFT site are expected to occur on previously disturbed areas and no additional land clearing is planned.

Figure 1 provides a plan view of the expected FFT site layout. Figures 2 and 3 provide isometric schematics of the site facilities.

Approval to Operate Pollutant Control Facilities

Under the terms of the Approval to Operate Pollutant Control Facilities obtained from the Minister, Denison is authorized to construct and operate various regulated elements associated with the FFT, including pollutant control facilities, mineralized precipitate facilities, radon air pollution abatement equipment, and hazardous substances and waste dangerous goods storage facilities.

The approval includes specific operating conditions related to (a) mineralized precipitate, recovered solution and drill cuttings, handling, and transportation, (b) hazardous substances material storage, handling, and transportation, (c) air management, (d) water/wastewater management, and (e) waste handling, transportation, and disposal. Additionally, the approval includes provisions related to inspections, monitoring, reporting, and decommissioning and reclamation.

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 (operator) and JCU (Canada) Exploration Company Limited ("JCU"). Denison has an effective 95% ownership interest in Wheeler River (90% directly, and 5% indirectly through a 50% ownership in JCU).

A PFS was completed for Wheeler River in 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.

Denison suspended certain activities at Wheeler River during 2020, including the EA process, which is on the critical path to achieving the project development schedule outlined in the PFS. While the EA process has resumed, 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 its effective 95% interest in the Wheeler River project, Denison's interests in the Athabasca Basin include a 22.5% ownership interest in the McClean Lake joint venture, which includes several uranium deposits and the McClean Lake uranium mill that is contracted to process the ore from the Cigar Lake mine under a toll milling agreement, plus a 25.17% interest in the Midwest Main and Midwest A deposits, and a 66.90% interest in the Tthe Heldeth Túé ("THT", formerly J Zone) and Huskie deposits on the Waterbury Lake property. The Midwest Main, Midwest A, THT and Huskie deposits are each located within 20 kilometres of the McClean Lake mill.

Through its 50% ownership of JCU, Denison holds additional interests in various uranium project joint ventures in Canada, including the Millennium project (JCU 30.099%), the Kiggavik project (JCU 33.8123%) and Christie Lake (JCU 34.4508%). Denison's exploration portfolio includes further interests in properties covering ~280,000 hectares in the Athabasca Basin region.

Denison is also engaged in post-closure mine care and maintenance services through its Closed Mines group (formerly Denison Environmental Services), which manages Denison's reclaimed mine sites in the Elliot Lake region and provides related services to certain third-party projects.

For more information, please contact

David Cates (416) 979-1991 ext 362
President and Chief Executive Officer

Mac McDonald (416) 979-1991 ext 242
Executive Vice President and Chief Financial Officer

Follow Denison on Twitter @DenisonMinesCo

Qualified Persons

The disclosure of scientific or technical information related to the FFT or Wheeler River project contained in this release has been reviewed and approved, as applicable, by Mr. David Bronkhorst, P.Eng, Denison's Vice President, Operations or Mr. Andrew Yackulic, P. Geo., Denison's Director, Exploration, who are Qualified Persons 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 'potential', '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' or 'be achieved'.

In particular, this news release contains forward-looking information pertaining to the following: expectations with respect to the FFT program, scope, timing and the anticipated results thereof; the expectation that Denison will receive all required permitting for the FFT, including CNSC approvals; and expectations regarding its joint venture ownership interests and the continuity of its agreements with its partners and third parties.

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 modelling and assumptions upon which the work plans for exploration and/or the Wheeler River Project are based may not be maintained after further work is completed. In addition, Denison may decide or otherwise be required to discontinue exploration, testing, evaluation and development work if it is unable to maintain or otherwise secure the necessary resources (such as testing facilities, capital funding, regulatory approvals, etc.). 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 25, 2022 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.

Figure 1: Plan map showing location of FFT facilities

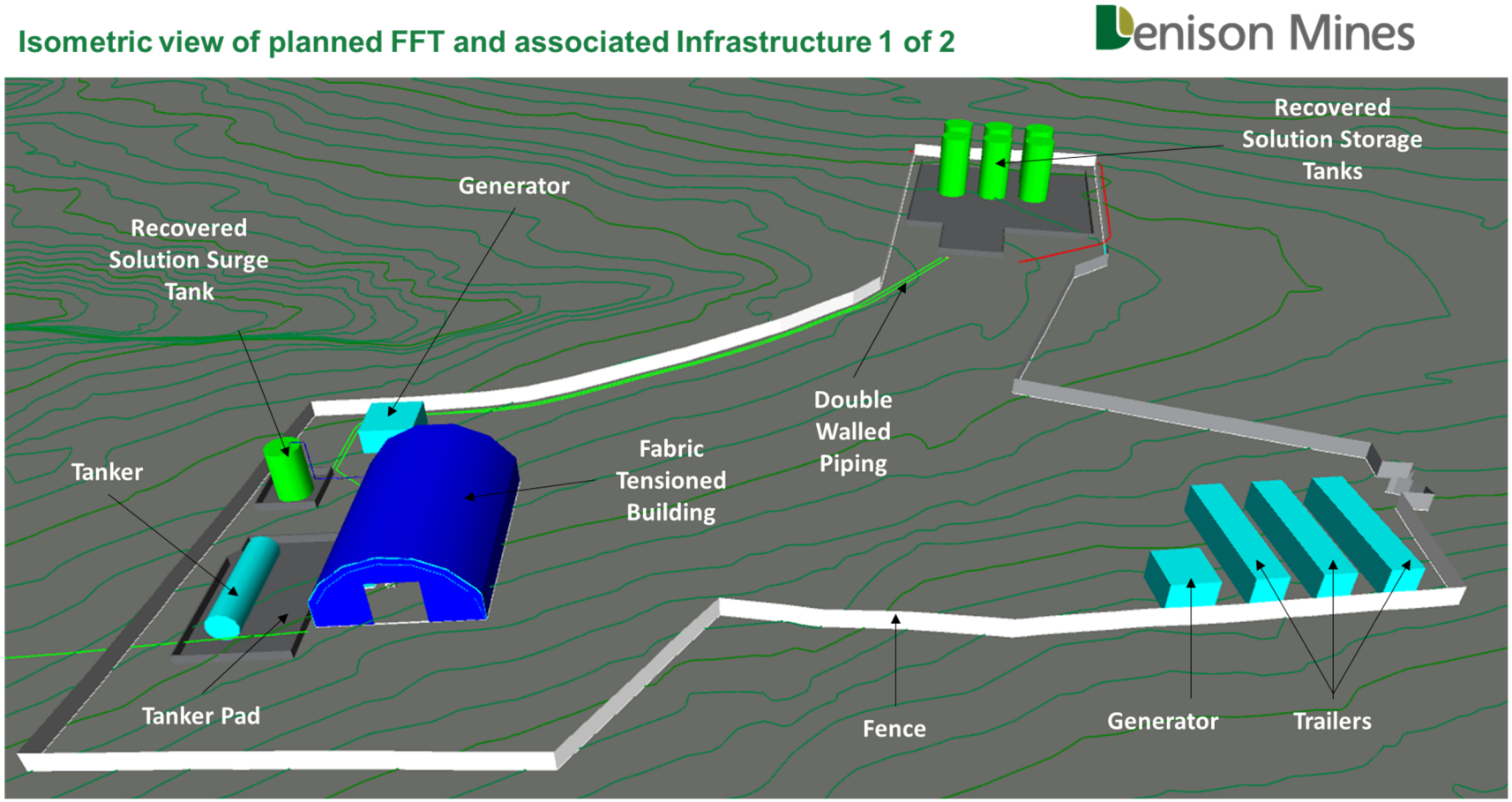

Figure 2: Isometric view of the planned FFT site and associated facilities

Isometric view of planned FFT and associated infrastructure 2 of 2

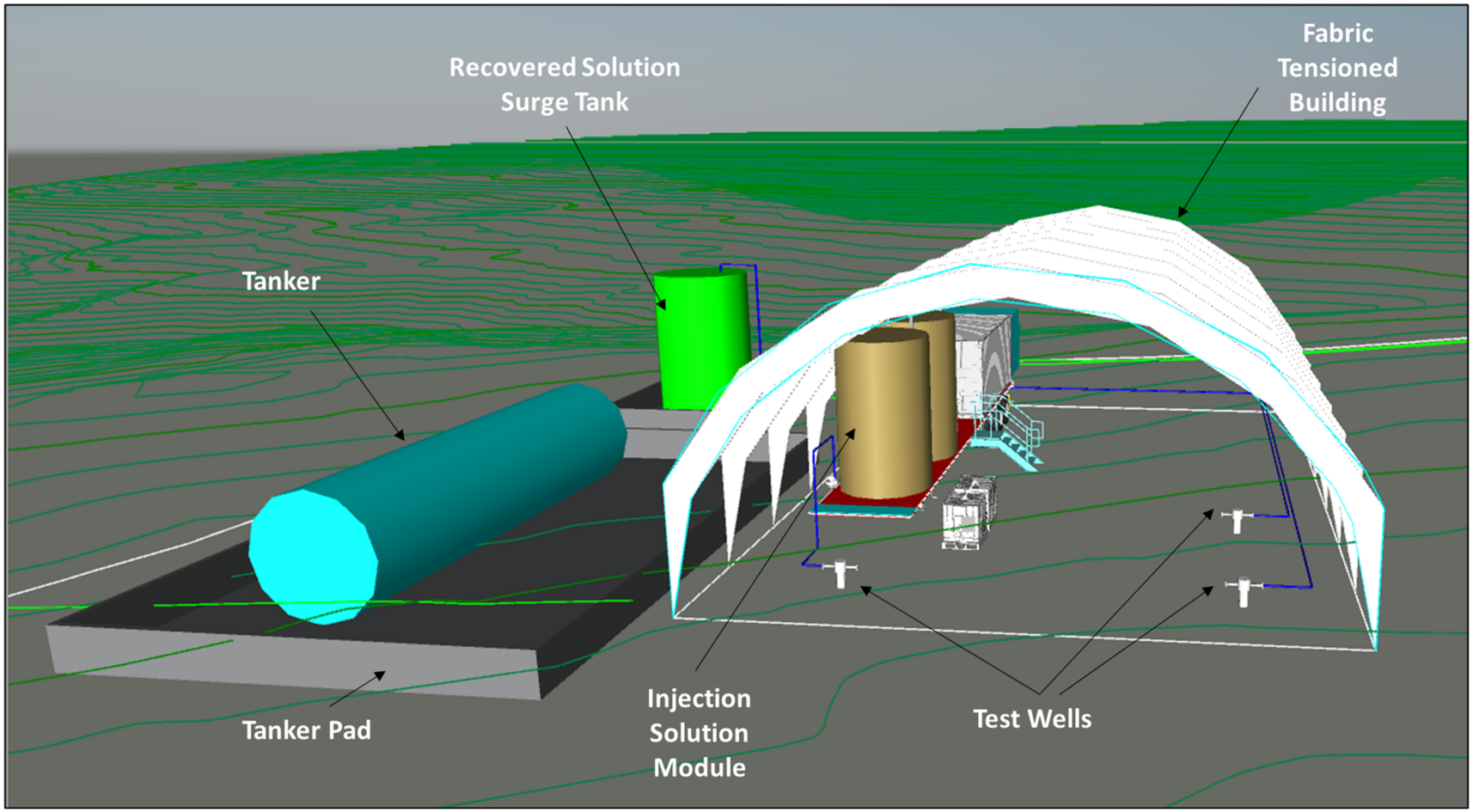

Figure 3: Isometric view of the coverall building on the FFT site, including test wells, injection solution preparation module, and recovered solution surge tank