

PRESS RELEASE

Denison Announces Completion of Conceptual Mining Study Evaluating ISR for Midwest and Plans to Advance Efforts in 2023

Toronto, ON – April 12, 2023. Denison Mines Corp. (“Denison” or the “Company”) (TSX: DML; NYSE American: DNN) is pleased to announce the successful completion of an internal conceptual mining study (the “Concept Study”) examining the potential application of the In-Situ Recovery (“ISR”) mining method at the Company’s 25.17% owned Midwest project (“Midwest”). The Concept Study was prepared by Denison during 2022 and was formally issued to the Midwest Joint Venture (“MWJV”) in early 2023. Based on the positive results of the Concept Study, the MWJV has now provided Denison with approval to complete additional ISR-related evaluation work for Midwest in 2023.

Midwest is located approximately 25 kilometres, by existing roads, from the 22.5% Denison owned McClean Lake uranium mill, and is a joint venture owned by Denison (25.17%) and Orano Canada Inc. (“Orano Canada”) (74.83%). Orano Canada is part of the Orano Group, which is recognized as a leading international operator in the field of nuclear materials, with activities including uranium mining, conversion, enrichment, and other fuel services.

David Cates, Denison’s President & CEO, commented, ***“Since the completion of the Wheeler River Pre-Feasibility Study in 2018, Denison has invested in the development of a highly skilled and motivated Saskatoon-based technical team that has demonstrated industry leadership in the evaluation of the application of the ISR mining method to high-grade uranium deposits in the Athabasca Basin.***

We are encouraged by the results of the Midwest Concept Study, and we are pleased to continue the further evaluation of the potential application of the ISR mining method to Midwest, with the support of our partner Orano.”

Evaluation activities planned for Midwest during 2023 include the collection of deposit-specific information and the completion of select preliminary engineering studies to support the further evaluation and de-risking of the key criteria required to further assess the potential application of the ISR mining method, which may result in the preparation of a Preliminary Economic Assessment to support the development, if warranted, of future field tests.

Property Location & History

Midwest is situated in the eastern portion of the Athabasca Basin region in northern Saskatchewan. The property is approximately one kilometre from the Points North Landing airstrip and about 25 kilometres west, by existing roads, from the McClean Lake mill, which is jointly owned by Denison (22.5%) and Orano Canada (77.5%). Access to Midwest is by both road and air. Goods are transported to the site by truck over an all-weather road connecting with the provincial highway system. Air transportation is provided through the Points North airstrip (See Figure 1).

Initial exploration work at Midwest began in 1966, and Denison first became an owner of the project in 1987. In 2007, Orano Canada completed an internal study evaluating the feasibility of mining the Midwest Main deposit via open pit mining methods with processing of the resulting ore at the McClean Lake mill. The MWJV subsequently advanced the project through the environmental assessment process as an open pit mine and the final version of the Midwest Project Environmental Impact Statement was approved in September 2012.

Estimated Mineral Resources

The Midwest Main uranium deposit ("Midwest Main") is estimated to contain, on a 100% ownership basis, an Indicated mineral resource of 39,900,000 lbs U₃O₈, based on 453,000 tonnes at an average grade of 4.00% U₃O₈, and an Inferred mineral resource of 11,500,000 lbs U₃O₈ based on 793,000 tonnes at an average grade of 0.66% U₃O₈. Midwest Main is lens to cigar shaped, 600 metres long, 10 to over 100 metres wide, with thicknesses ranging from 5 metres to 10 metres. The deposit consists of a near-massive high-grade mineralized core that straddles the unconformity approximately 210 metres below surface. The high-grade core is surrounded by lower-grade fracture-controlled mineralization primarily in sandstone.

Midwest is also host to the Midwest A uranium deposit ("Midwest A"), which is estimated to contain, on a 100% ownership basis, an Indicated mineral resource of 10,800,000 lbs U₃O₈, based on 566,000 tonnes at an average grade of 0.87% U₃O₈, and an Inferred mineral resources totaling 6,700,000 lbs U₃O₈ based on 53,000 tonnes at an average grade of 5.8% U₃O₈. Midwest A is approximately 450 metres long, 10 to 60 metres wide, ranges up to 70 metres in thickness and occurs between 150 and 235 metres below surface. Mineralization straddles the unconformity contact with minor amounts hosted within basement structures immediately below the unconformity. Thicker zones of mineralization above the unconformity are concentrated in conglomerate units at the base of the Athabasca sandstone. Similar to Midwest Main, a high-grade core of mineralization is surrounded by a lower-grade fracture-controlled envelope.

The mineral resource estimate for Midwest (and the technical information herein) is described in the independent technical report, prepared in accordance with NI 43-101, titled "Technical Report with an Updated Mineral Resource Estimate for the Midwest Property, Northern Saskatchewan, Canada", dated March 26, 2018.

Concept Study

The Concept Study evaluated the potential use of the ISR mining method at Midwest. In an ISR uranium mining operation, a mining solution (lixiviant) is injected into the ore zone through a series of drill holes known as injection wells. The lixiviant leaches the uranium as it travels through the ore zone and is then recovered as a uranium bearing solution ("UBS"), which is pumped back to surface via a series of recovery wells. Once on surface, the UBS is sent to a surface processing plant for the chemical separation of the uranium. Following the uranium removal, the lixiviant is reconditioned and returned to the wellfield for further production. The ISR mining method accounts for a significant portion of uranium mine production globally and is generally considered the lowest-cost uranium mining method in the world – owing to the fact that the method eliminates (i) the surface disturbances and costs associated with physically removing ore and waste from the ground, and (ii) the need for conventional tailings treatment and storage, which are normally associated with underground or open pit mining operations.

The internal studies undertaken on Midwest are preliminary in nature and there is significant uncertainty with respect to the potential for, and the economic and technical risks associated with, the use of ISR mining for the Midwest deposits. Further technical evaluations may not be advisable or completed if the preliminary results of internal studies are not maintained after further testing and/or analysis.

About Denison

Denison is a uranium exploration and development company with interests focused in the Athabasca Basin region of northern Saskatchewan, Canada. The Company has an effective 95% interest in its flagship Wheeler River Uranium Project, which is the largest undeveloped uranium project in the infrastructure rich eastern portion of the Athabasca Basin region of northern Saskatchewan. Denison's interests in Saskatchewan also 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 67.41% interest in the Tthe Heldeth T   (‐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 33.8118%) and Christie Lake (JCU 34.4508%). Denison's exploration portfolio includes further interests in properties covering ~300,000 hectares in the Athabasca Basin region.

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

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Qualified Persons

The disclosure of scientific or technical information contained in this release has been reviewed and approved, as applicable, by Mr. Chad Sorba, P. Geo., Denison's Director, Technical Services 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: interpretation of the preliminary results of the Concept Study; expectations with respect to evaluation work and studies, including, scope, timing and the anticipated results thereof; the results and interpretations of the mineral resource estimate; 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 planned evaluation work for Midwest are based may not be maintained after further work is completed. In addition, Denison may decide or otherwise be required to discontinue testing, evaluation and development work if it is unable to maintain or otherwise secure the necessary resources (such as joint venture approvals, 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 27, 2023 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 Mineral Resources and Mineral Reserves: *This news release may use the terms 'measured', 'indicated' and 'inferred' mineral resources. United States investors are advised that 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. '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 an inferred mineral resource exists, or*

is economically or legally mineable. United States investors are also cautioned not to assume that all or any part of measured or indicated mineral resources will ever be converted into mineral reserves.

Effective February 2019, the United States Securities and Exchange Commission ('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 - McClean Lake Project Claims

