

# DENISON MINES CORP.

## Waterbury Lake PEA Results Looking Good

### EVENT

This morning, Denison released results from a Preliminary Economic Assessment (PEA) completed on its 66.9%-owned Waterbury Lake property on the eastern side of the Athabasca Basin, proximal to its 22.5%-owned McClean Lake mill.

### BOTTOM LINE

**Modest Positive** – Similar to Phoenix, the PEA scopes the J Zone (now renamed the Tthe Heldeth Túc, or THT deposit), being extracted via freeze wall and In-Situ Recovery (ISR) methods. A base case uranium price of \$53.59/lb drives an after-tax NPV net to Denison (66.9% interest) of C\$72 MM, in-line with the C\$78 MM we previously ascribed to the Company's assets on the eastern side of the Basin. We maintain our Buy rating and \$1.05/C\$1.35/share target price on Denison Mines.

### FOCUS POINTS

- PEA Metrics:** The freeze wall and ISR method will target extraction of the THT East pod only, which for upfront CAPEX of C\$112 MM, will produce 1.6 MMlb U<sub>3</sub>O<sub>8</sub>/year over a six-year period at average cash operating costs of \$12.23/lb U<sub>3</sub>O<sub>8</sub> and AISC of \$24.93/lb U<sub>3</sub>O<sub>8</sub>.
- Environmentally Benign Process:** The ISR method is one of the most environmentally friendly mining practices globally, produces no tailings or site water discharge, and causes only minimal surface disruption which is then quickly reclaimed (very small footprint).
- Maintaining Buy Rating and \$1.05/C\$1.35 /Share Target Price:** With final processing at THT to take place at Denison's 22.5%-owned McClean Lake mill located only 15 km away, the permitting timeline for THT is potentially very short. According to Denison, pre-production activities could begin as early as 2025 with first production potentially achievable in 2028.

### Recommendation:

**BUY**

Symbol/Exchange: DNN-NYSE / DML-TSX  
Sector: Metals & Mining  
*All dollar values in US\$ unless otherwise noted.*  
Current price: \$0.35; C\$0.46  
One-year target: \$1.05; C\$1.35  
Return to target: 200.0%  
Cash and equivalents: ~C\$29 MM

### Company Summary

Shares O/S (MM)	677.4	52-week range	\$0.19 - \$0.58
Market cap (\$MM)	\$237.1	30D avg vol. ('000)	2,782.9
Market float (\$MM)	\$236.0	Fiscal year-end	31-Dec
<b>Probable Reserves</b>	<b>Tonnes</b>	<b>U<sub>3</sub>O<sub>8</sub> Grade</b>	<b>Attrib. Resource</b>
Wheeler River	1,398,000	3.54%	98.4 MMlb
<b>Measured &amp; Indicated Resources</b>	<b>Tonnes</b>	<b>U<sub>3</sub>O<sub>8</sub> Grade</b>	<b>Attrib. Resource</b>
McClean Lake Deposits	376,400	2.18%	4.0 MMlb
Midwest	1,019,000	2.26%	12.8 MMlb
Waterbury Lake	291,000	2.00%	8.6 MMlb
Wheeler River	1,809,000	3.30%	118.9 MMlb
<b>Inferred Resources</b>	<b>Tonnes</b>	<b>U<sub>3</sub>O<sub>8</sub> Grade</b>	<b>Attrib. Resource</b>
McClean Lake Deposits	510,900	0.68%	1.6 MMlb
Midwest	846,000	0.98%	4.6 MMlb
Waterbury Lake	268,000	0.96%	3.8 MMlb
Wheeler River	82,000	1.70%	2.7 MMlb



**Company profile:** Denison Mines is a uranium exploration and development company focused on the Athabasca Basin. Its 90%-owned Wheeler River project is one of the highest-grade uranium projects globally.

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See disclosure and a description of our recommendation structure at the end of this report.

## WATERBURY LAKE PEA RESULTS LOOKING GOOD

This morning, Denison released results from a PEA completed on its 66.9%-owned Waterbury Lake property on the eastern side of the Athabasca Basin, proximal to its 22.5%-owned McClean Lake mill. The Waterbury Lake property is host to the J-zone deposit, which as of this PEA, has been renamed the Tthe Heldeth Túé, or THT deposit. A base case uranium price of \$53.59/lb drives an after-tax NPV<sub>8%</sub> at THT net to Denison (66.9%-interest) of C\$72 MM, in-line with the C\$78 MM we previously ascribed to the project. According to the PEA, for upfront CAPEX of C\$112 MM, THT will produce 1.6 MMlb U<sub>3</sub>O<sub>8</sub>/year over a six-year period at average cash operating costs of \$12.23/lb U<sub>3</sub>O<sub>8</sub> and AISC of \$24.93/lb U<sub>3</sub>O<sub>8</sub>, for an IRR of 30.4%. The PEA was completed by Engcomp Engineering & Computing Professionals based out of Saskatoon, Canada. The key project metrics at THT/Waterbury Lake are provided in Exhibit 1 below.

### Exhibit 1. Waterbury Lake PEA Results

Avg. Production	(100% basis)	1.6 MMlb U <sub>3</sub> O <sub>8</sub> /yr
Mine Life		6 years
Base Case* Pre-Tax NPV <sub>8%</sub>	(100% basis)	C\$177 MM
Base Case* Pre-Tax IRR		39.1%
Total Operating Costs		\$12.23/lb U <sub>3</sub> O <sub>8</sub>
Initial CAPEX	(100% basis)	C\$112 MM
Sustaining CAPEX	(100% basis)	C\$50 MM
Initial CAPEX	(66.9% DNN)	C\$75 MM
Base Case* After-Tax NPV <sub>8%</sub>	(66.9% DNN)	C\$72 MM
Base Case* After-Tax IRR		30.4%

\*\$53.59/lb LT U<sub>3</sub>O<sub>8</sub> price for base case

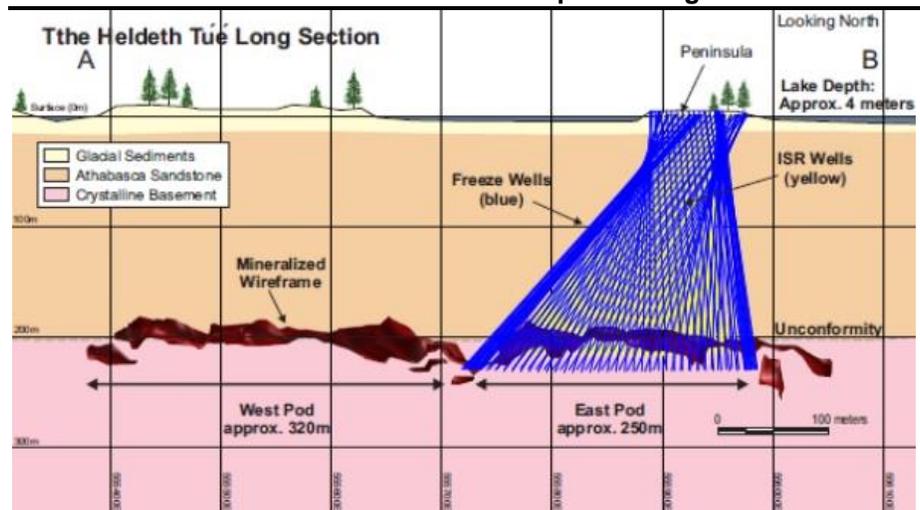
Source: Denison Mines, Cantor Fitzgerald

## FREEZE WALL AND ISR EXTRACTION METHODS

90% of the contained uranium at THT is hosted within the East pod zone (the remaining 10% in the West pod), and the PEA evaluates extracting the East pod only via a freeze wall and ISR method. This is very similar to how Denison's Phoenix deposit will be extracted, which comes as no surprise, given the geological similarities between the two projects, namely, the position of the deposits at the unconformity (as opposed to basement hosted), the permeability of the mineralized zones, and impermeability of underlying basement rock. At THT, a 360 degree freeze wall from surface to the impermeable basement rock will effectively completely contain the deposit. Injection and recovery wells will then be drilled into the East Pod mineralized zone, enabling mining solution in the ISR process to recover the uranium at THT without impacting the surrounding unmineralized sandstone unit (Exhibit 2). The East pod is relatively small in size, measuring 300m x 70m, and as such, the wellfield design outlined in the PEA calls for only 192 total wells comprised of 66 recovery wells, 118 injection wells, and 8 monitoring wells over a combined 59,283 vertical meters. Wells will be drilled at 7m spacing in a 5-spot pattern with each recovery well surrounded by four injection wells. The ISR method is one of the most environmentally friendly mining practices globally, produces no tailings or site water discharge, and causes only minimal surface disruption which is then quickly reclaimed (very small footprint). Conventional ISR methods have been widely

used in the United States and Kazakhstan for uranium production, accounting for ~50% of uranium output globally.

### Exhibit 2. Freeze Wall and Well Field Conceptual Design



Source: Denison Mines

### INFRASTRUCTURE IN PLACE, QUICK TIMELINE

While a toll-milling agreement will have to be negotiated, ultimately the Uranium Bearing Solution (UBS) recovered from the THT wellfield will be processed at Denison's 22.5%-owned McClean Lake mill, located 15km from Waterbury Lake. Given its location on the eastern side of the Athabasca Basin, infrastructure requirements at the future THT site are minimal, consisting of a new 13 km power line, 1.5 km extension of the existing access road, and general associated low cost site infrastructure (fuel storage, wash bay, site office, etc.) Moreover, with the final processing of THT UBS to take place at the already permitted and operating McClean Lake mill, the permitting timeline for the project is potentially very short. According to Denison, pre-production activities at Waterbury Lake could begin as early as 2025 with first production potentially achievable in 2028.

### FULLY FUNDED FOR 2020 AND 2021 PROGRAMS

On October 14, 2020, Denison completed a \$19 MM (C\$25.3 MM) equity financing in which Cantor Fitzgerald participated as lead underwriter. Net proceeds from the offering should cover Denison through all programs over at least the next two years (Cantor estimate). 2020 and 2021 programs include the 12,000m drill program at Phoenix including Wheeler River satellite targets, resumption of the formal EA process (announced November 9), and the PEA at the Waterbury Lake property completed this morning.

### VALUATION, RECOMMENDATION AND TARGET PRICE

Our target multiple on Denison Mines of 1.0x NAVPS (rounded) is unchanged, driven via DCF-based NAVPS<sup>7.5%</sup> on Wheeler River, the McClean Lake Mill, and now the Waterbury Lake project, and option value of \$2.00/lb U<sub>3</sub>O<sub>8</sub> in-situ for Denison's earlier stage exploration properties in the Athabasca Basin. Denison is very well capitalized with C\$29 MM in cash and equivalents and no outstanding debt. We maintain our Buy recommendation and \$1.05/C\$1.35/share target price.

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The analyst responsible for this report *has* visited the material operations of Denison. No payment or reimbursement was received for the related travel costs.

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**BUY (Speculative):** The stock is attractively priced relative to the company’s fundamentals, however investment in the security carries a higher degree of risk.

**HOLD:** The stock is fairly valued, lacks a near term catalyst, or its execution risk is such that we expect it to trade within a narrow range of the current price in the next 6 to 12 months. The longer term fundamental value of the company may be materially higher, but certain milestones/catalysts have yet to be fully realized.

**SELL:** The stock is overpriced relative to the company’s fundamentals, and we expect it to decline from the current price over the next 6 to 12 months.

**TENDER:** We believe the offer price by the acquirer is fair and thus recommend investors tender their shares to the offer.

**UNDER REVIEW:** We are temporarily placing our recommendation under review until further information is disclosed.

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