Uranium Development & Exploration

The Athabasca Basin, Northern Saskatchewan

October 2020 | Corporate Update

Cautionary Statements & References

This presentation and the information contained herein is designed to help you understand management's current views, and may not be appropriate for other purposes. This presentation contains information relating to other companies and provincial infrastructure, and the plans and availability thereof, derived from third-party publications and reports which Denison believes are reliable but have not been independently verified by the Company.

Certain information contained in this presentation constitutes "forward-looking information", within the meaning of the United States Private Securities Litigation Reform Act of 1995 and similar 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 presentation contains forward-looking information pertaining to the results of, and estimates, assumptions and projections provided in, the PFS, including future development methods and plans, market prices, costs and capital expenditures; assumptions regarding Denison's ability to obtain all necessary regulatory approvals to commence development; Denison's percentage interest in its projects and its agreements with its joint venture partners; and the availability of services to be provided by third parties. Statements relating to "mineral resources" are deemed to be forward-looking information, as they involve the implied assessment, based on certain estimates and assumptions that the mineral resources described can be profitably produced in the future.

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 faces certain risks, including the inability to secure sufficient financing to pursue its business objectives, the inability to permit or develop the project as currently planned, the unpredictability of market prices, the use of mining methods which are novel and untested in the Athabasca basin, events that could materially increase costs, changes in the regulatory environment governing the project lands, and unanticipated claims against title and rights to the project. Denison believes that the expectations reflected in this forward-looking information are reasonable but there can be no assurance that such statements will prove to be accurate and 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 "Risk Factors" in Denison's Annual Information Form dated March 20, 2020 available under its profile at www.sedar.com and its Form 40-F available at www.sec.gov/edgar.shtml. These factors are not, and should not be construed as being exhaustive.

Readers should not place undue reliance on forward-looking statements. The forward-looking information contained in this presentation is expressly qualified by this cautionary statement. Any forward-looking information and the assumptions made with respect thereto speaks only as of March 20, 2020. Denison does not undertake any obligation to publicly update or revise any forward-looking information after such date to conform such information to actual results or to changes in its expectations except as otherwise required by applicable legislation.

Cautionary Note to United States Investors Concerning Estimates of Measured, Indicated and Inferred Mineral Resources: This presentation may use the terms "measured", "indicated" and "inferred" mineral resources. United States investors are advised that while such terms are recognized and required by Canadian regulations, the United States Securities and Exchange Commission 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.**

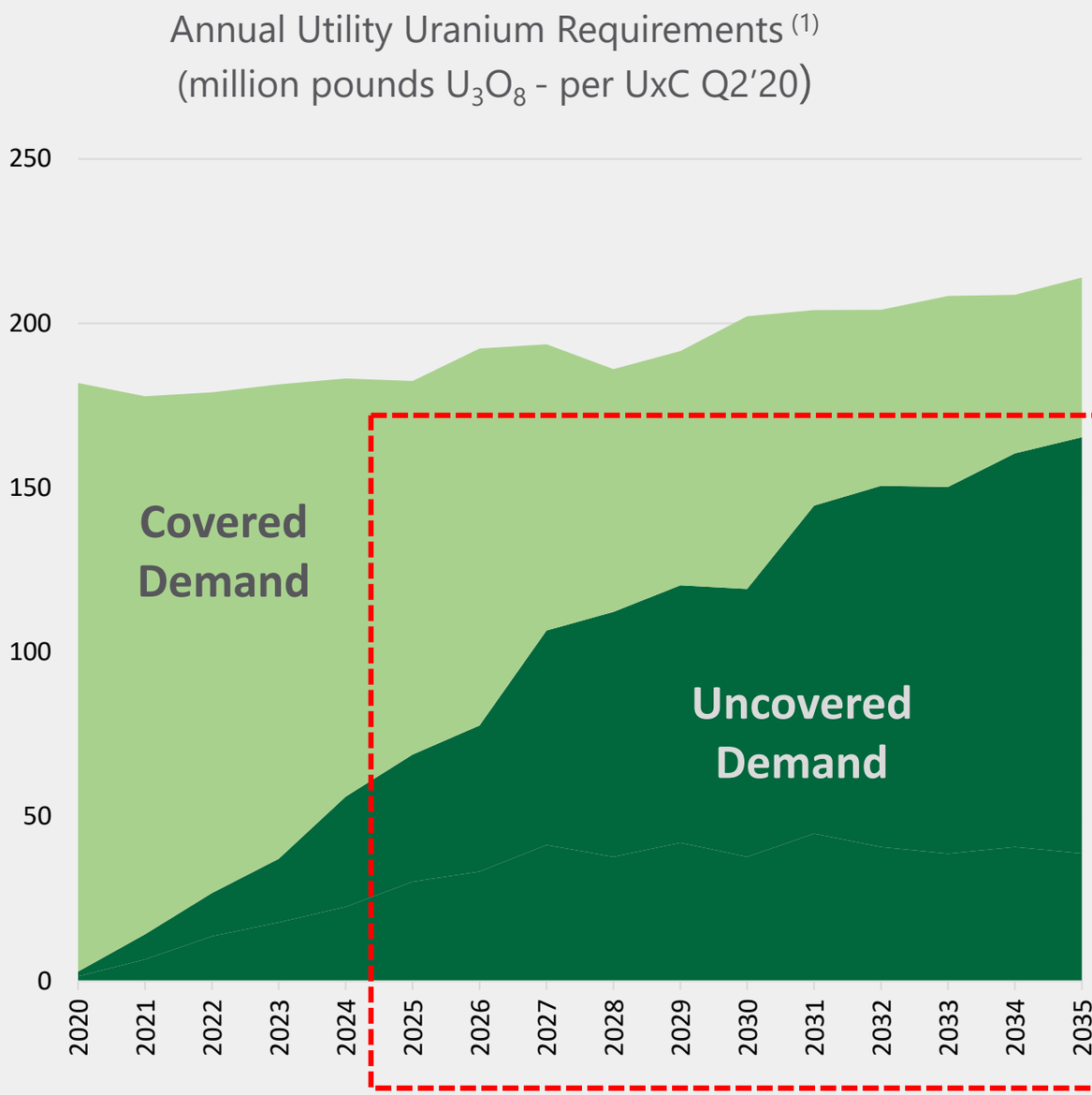
Qualified Persons

The disclosure of a scientific or technical nature within this presentation, including the disclosure of mineral resources and reserves and PFS results, was reviewed and approved by David Bronkhorst, P.Eng., who is a Qualified Person in accordance with the requirements of NI 43-101.

Wheeler River Technical Reports

For further details regarding the Wheeler River project, please refer to the Company's press release dated September 24, 2018 and the technical report titled "Prefeasibility Study for the Wheeler River Uranium Project, Saskatchewan, Canada" with an effective date of September 24, 2018. For a description of the data verification, assay procedures and the quality assurance program and quality control measures applied by Denison, please see Denison's Annual Information Form dated March 13, 2020. Copies of the foregoing are available on Denison's website and under its profile on SEDAR at www.sedar.com and on EDGAR at www.sec.gov/edgar.shtml.

The Uranium Investment Thesis:
Fundamentals are improving, leading to a positive new uranium cycle



Key Market Themes:

1. Long-term contracts from the previous uranium bull cycle have acted as a lifeline to high-cost mines – this is coming to an end, with **significant uncovered utility requirements emerging** as Denison is expected to enter production

2. Demand story is positive and improving – requirements now exceed pre-Fukushima levels,

3. Significant curtailment decisions have been made by largest uranium producers

4. Response to COVID-19 has put additional pressure on supply. Further curtailments have accelerated drawdown of secondary supplies

5. Given sustained low prices, project pipeline may be inadequate to deliver new production in time to replace mines that are dropping off

6. Long-standing trade issues which have distracted the market have been clarified, in particular the Section 232 investigation and subsequent report by the Nuclear Fuel Working Group

NOTES: (1) Data in this slide has been derived from UxC's Uranium Market Outlook dated Q2 2020.

Diversified Athabasca Basin Asset Base with Superior Development Leverage

Strategic Asset Portfolio:

- 90% interest in Flagship **Wheeler River** project
  - Development stage project
  - Largest undeveloped uranium project in the infrastructure rich eastern Athabasca Basin
  - Environmental Assessment ("EA") initiated(A)
- 22.5% interest in **McClean Lake Uranium Mill**
  - +12% of global uranium production
  - Excess licensed capacity
- Additional leverage to the uranium price from interests in undeveloped uranium resources
  - PEA in progress for **J Zone** deposit (Waterbury Lake property) as ISR mining operation
  - **McClean Lake, Midwest,** and **Waterbury Lake** all in close proximity to McClean mill
- **~280,000 hectares** of prospective exploration ground in the Athabasca Basin
- **Well funded** (+CAD$25M in cash), plus internal sources of **cash flow** from Uranium Participation Corp. (TSX-U) & Closed Mines operations

Denison Mines

NOTES: (1) See Denison's news release from March 20, 2020 for details

IMPORTANT NOTES ON COVID-19 IMPACTS

(A) Given recent social, financial and market disruptions, Denison has suspended certain activities at Wheeler River, including the Environmental Assessment program, which is on the critical path to achieving the project development schedule outlined in the PFS. Given the uncertainty associated with the duration of suspension, the Company is not currently able to estimate the impact to the project development schedule outlined in the PFS, and users are cautioned that the estimates provided therein regarding the start of pre-production activities in 2021 and first production in 2024 should not be relied upon.(1)

22.5% Denison owned McClean Lake uranium mill

~280,000 Hectares of Prospective Exploration & Development Ground Focused in the Infrastructure Rich Eastern Athabasca Basin

All Season Highway / Haul Road

Provincial Power Grid

Flagship Wheeler River Development Project[(1)]

90% Denison Owned (10% JCU):

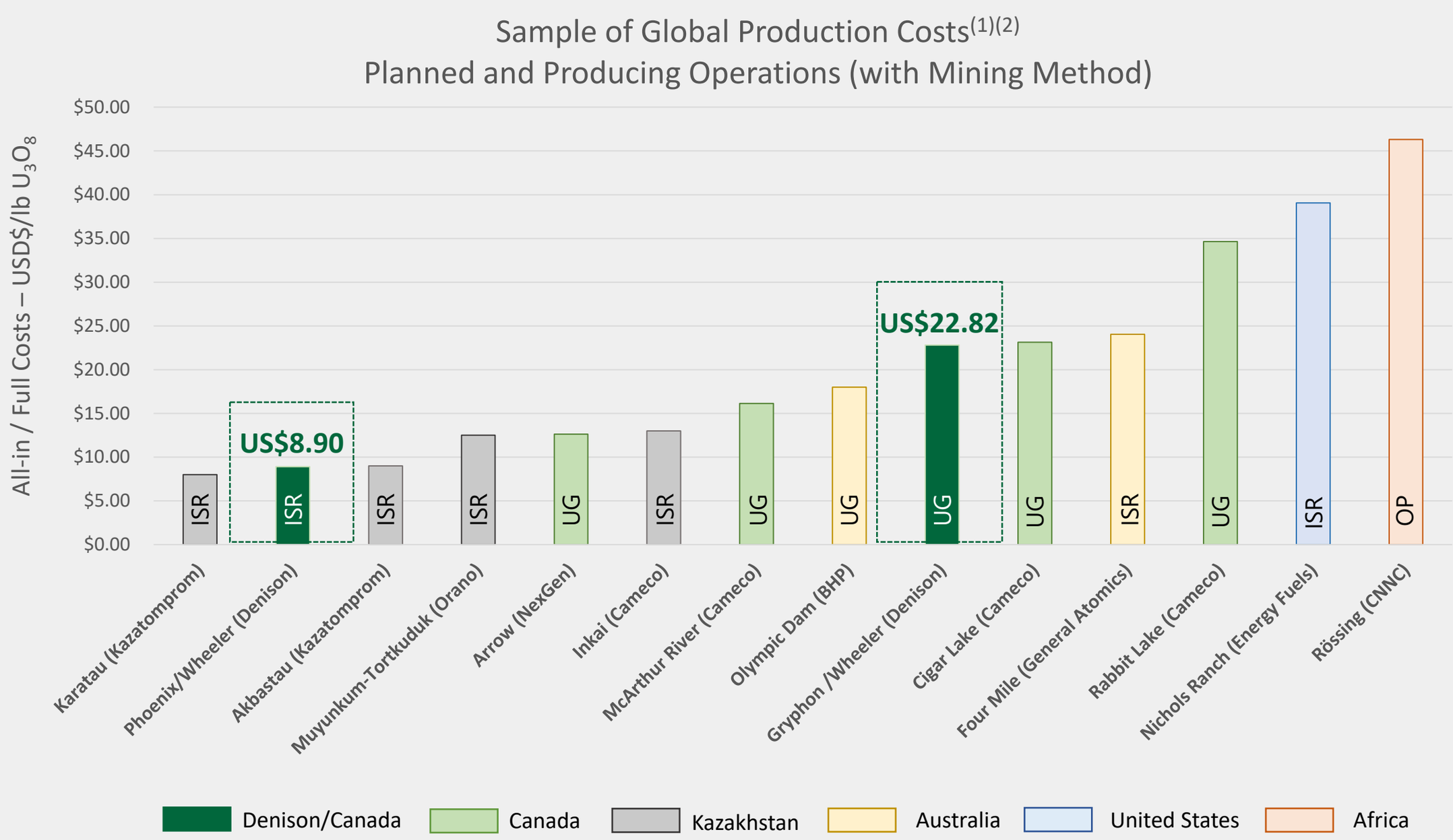
- Host to two high-grade uranium deposits
- NI 43-101 compliant Pre-Feasibility Study ("PFS") considers staged development plan
- **Phoenix** estimated to potentially have lowest costs of any undeveloped uranium deposit
  - **In-Situ Recovery ("ISR") mining method**
  - On-site processing to finished yellow cake
  - Commencement of EA in 2019
  - All-in costs of **US$8.90/lb U_3O_8**
  - Operating costs of **US$3.33/lb U_3O_8**
- **Gryphon** contributes additional low-cost pounds
  - Conventional underground mining approach
  - Assumes toll-milling at McClean Lake mill
  - All-in cost of **US$22.82/lb U_3O_8**
  - Operating costs of **US$11.70/lb U_3O_8**
- Combined **109.4M** lbs U_3O_8 Probable Reserves
- Combined **14** year mine life
- Initial CAPEX (Phoenix) of **$322.5M** (100%)

Denison Mines

NOTES: (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018;

ISR test well head installed at Wheeler River Phoenix Deposit, Summer 2019

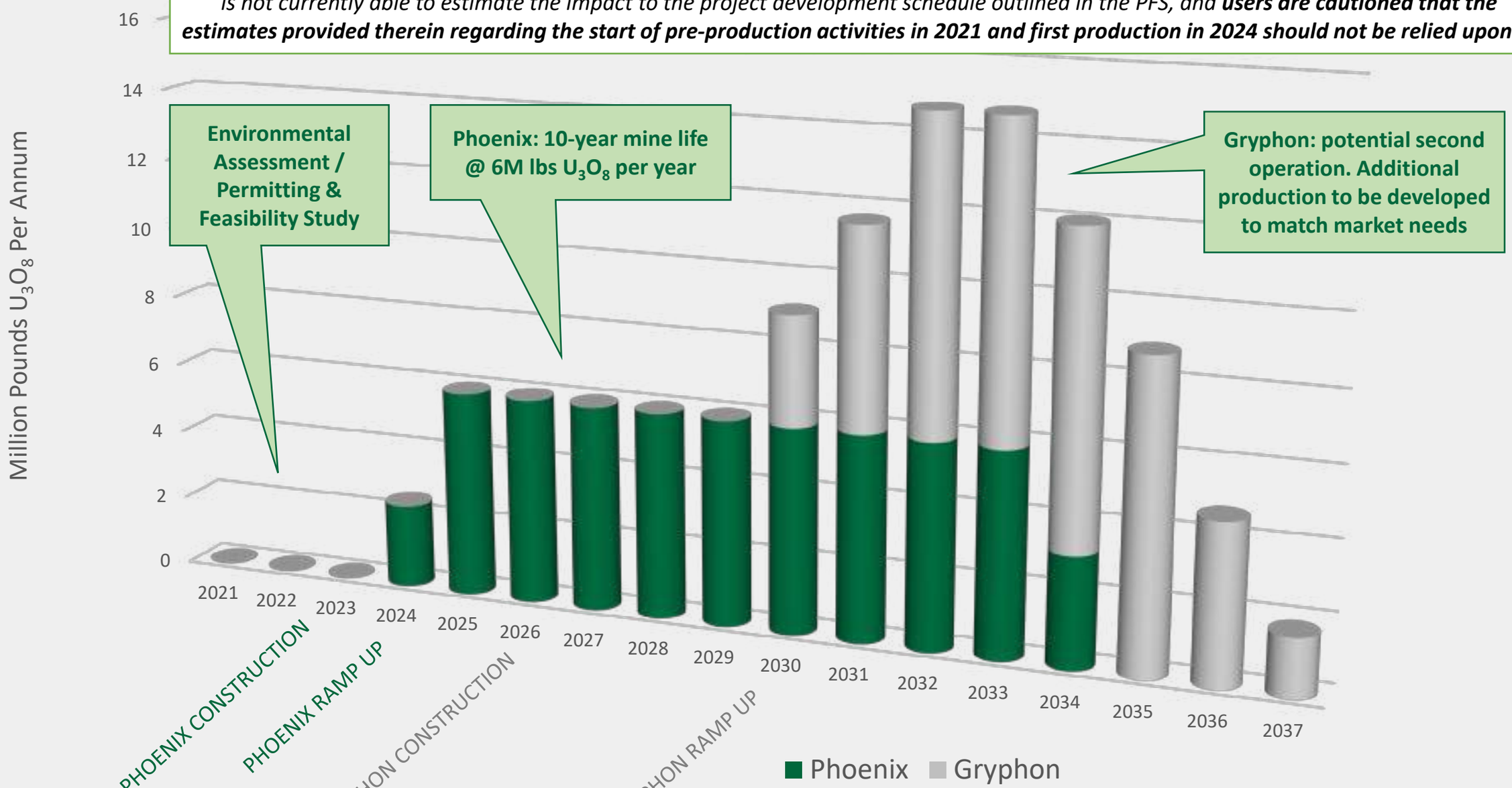
Wheeler River PFS:
Potential to be one of the lowest all-in cost uranium mining operations



NOTES: (1) Chart data, including all-in costs, have been derived from UxC's estimates of Worldwide Production Costs as of August 2019. (2) For Phoenix and Gryphon, refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018.

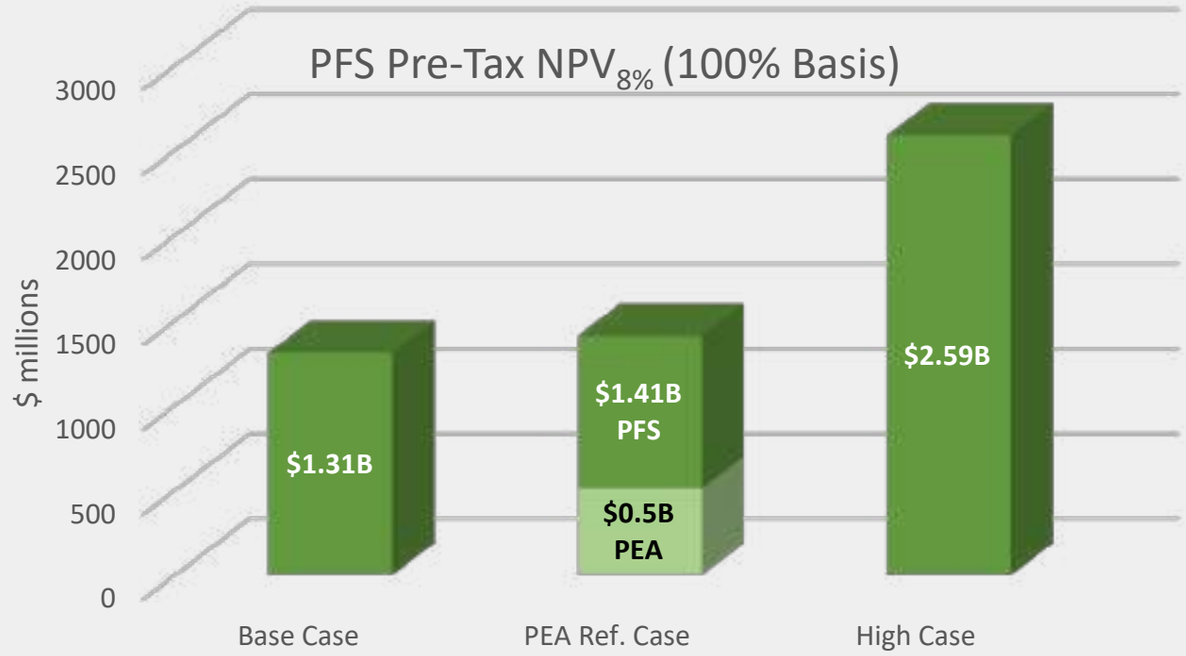
Wheeler River PFS:
Staged development plan with combined 14-year mine life(1)

IMPORTANT *The Wheeler River PFS estimated pre-production activities to begin in 2021, assuming receipt of required regulatory approvals, with first production from the Phoenix deposit expected in 2024. Given recent social, financial and market disruptions, Denison has suspended certain activities at Wheeler River, including the Environmental Assessment programs which is on the critical path to achieving the project development schedule outlined in the PFS. The decision to temporarily suspend the EA process is expected to impact the project development schedule outlined in the PFS for Wheeler River. Given the uncertainty associated with the duration of suspension, the Company is not currently able to estimate the impact to the project development schedule outlined in the PFS, and* ***users are cautioned that the estimates provided therein regarding the start of pre-production activities in 2021 and first production in 2024 should not be relied upon****.(2)*



NOTES: (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018. ; (2) See Denison's news release from March 20, 2020 for details

Wheeler River PFS:
Uranium price assumptions, commercial strategy, and sensitivities



Assumptions / Results[1]	Base Case	PEA Ref. Case	High Case
Uranium selling price	As above	US$44/lb U_3O_8	US$65/lb U_3O_8
Pre-tax $NPV_{8\%}$[2] (100% Basis)	**$1.31 billion**	**$1.41 billion**	**$2.59 billion**
Pre-tax IRR[2]	38.7%	47.4%	67.4%
Pre-tax payback period[3]	~24 months	~ 15 months	~ 11 months

Base Case Price Assumptions Reflect Commercial Strategy:

- **Phoenix Operation:**
  - Low all-in cost per lb U_3O_8 suggests contract "base-loading" not required
  - Uranium selling price based on UxC Spot price forecast (Q3'2018 UMO "Composite Midpoint" scenario)
  - ~US$29/lb U_3O_8 to US$45/lb U_3O_8
  - Stated in "constant" 2018 dollars
- **Gryphon Operation:**
  - US$50/lb U_3O_8 fixed price
  - Market support expected to be trigger for development

Comparison to 2016 Preliminary Economic Assessment ("PEA"):

- 2016 PEA provided pre-tax project $NPV_{8\%}$ of $513 million at fixed uranium price of US$44/lb U_3O_8
- PFS equivalent represents +**275% of pre-tax project NPV from PEA**

Denison Mines

NOTES: (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) NPV and IRR are calculated to the start of pre-production activities for the applicable operation; (3) Payback period is stated as number of years to pay-back from the start of commercial production.

“Proof of Concept” Achieved for Application of ISR Mining Method at Phoenix(1)

Petrotek Corporation – independent specialist with unique expertise in subsurface fluid flows and ISR projects

- **Comprehensive hydrogeologic model:** Petrotek developed, using 2019 ISR Field Test data
- **Calibrated:** models compared to actual 2019 Field Test data, such that the "head" changes resulting from simulations in the models were similar to observed changes in the actual field tests
- **Parameters:** 18 extraction / recovery wells and 33 injection wells modelled across Test Area 1 and Test Area 2, nearly balanced operational flow; 180-day simulation was completed with approximately 80% of the injected fluids estimated to be captured during the simulation period
- **Report Conclusions:** modelling provided **“Proof of Concept”** for application of ISR to Phoenix with respect to potential extraction and injection rates

Denison Mines

NOTES: (1) See Denison’s news release from June 4, 2020 for details

ISR field testing at Wheeler River Phoenix Deposit, Summer 2019

Phoenix Deposit:
Combining the world's lowest-cost uranium mining method with the world's highest-grade undeveloped uranium deposit

ISR field testing at Wheeler River Phoenix Deposit, Summer 2019

Phoenix Geology: Unique uranium deposit with exceptionally high grades

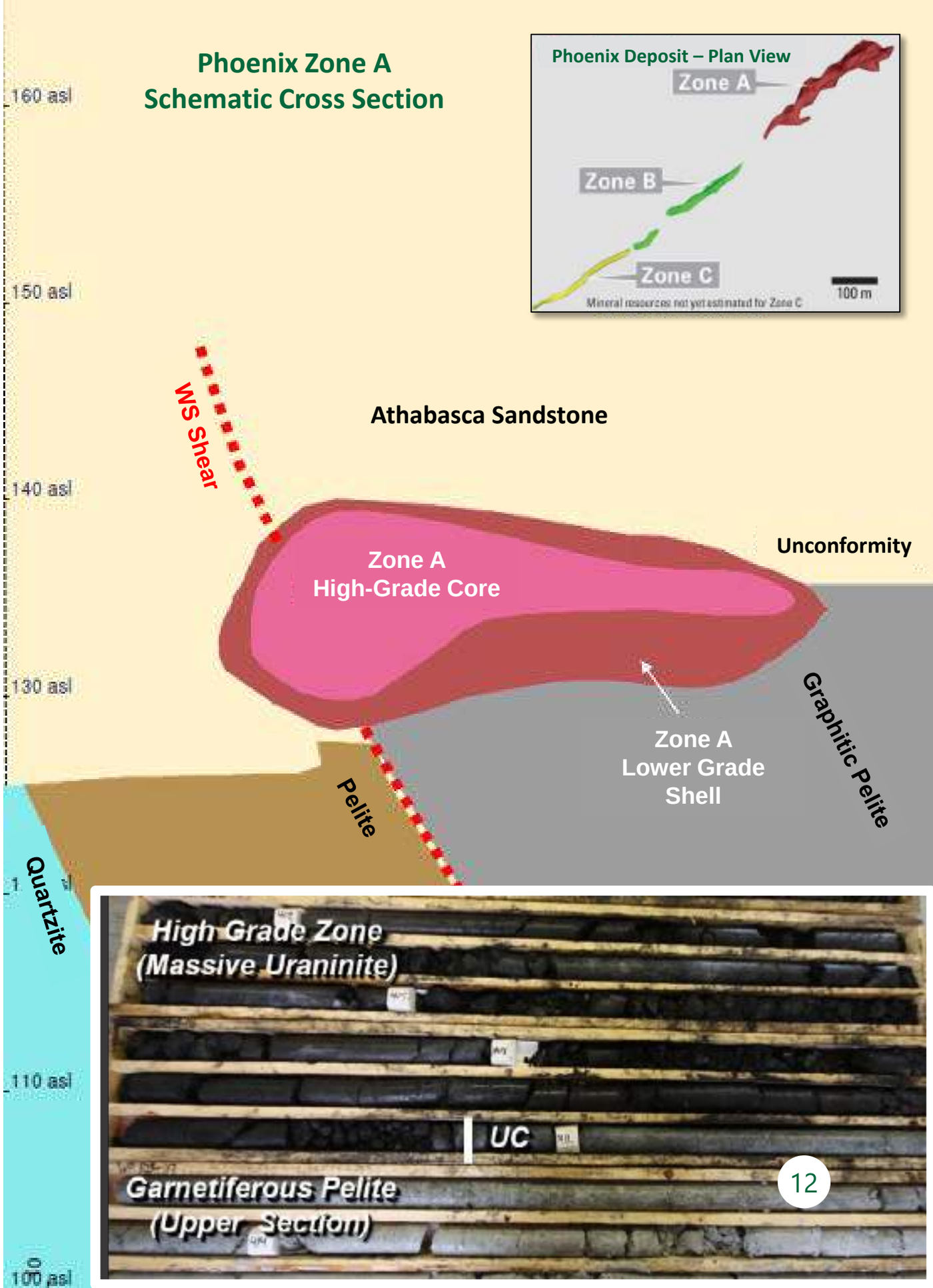
Highlights[1]:

- Mineralization is situated at or immediately above the unconformity("UC")
- Two distinct zones – Phoenix A + B
- Approximately 400m below surface
- World's highest-grade undeveloped uranium deposit
- **70.2 million pounds U_3O_8 @ 19.14% U_3O_8** Indicated mineral resources (166,400 tonnes)[2]
  - Zone A High-Grade Core contains an estimated **59.9 M lbs U_3O_8 @ 43.2% U_3O_8** (62,900 tonnes)
  - Cut-off grade of 0.8% U_3O_8
  - 1.1M lbs U_3O_8 in Inferred mineral resources (8,600 tonnes @ 5.8% U_3O_8)[3]

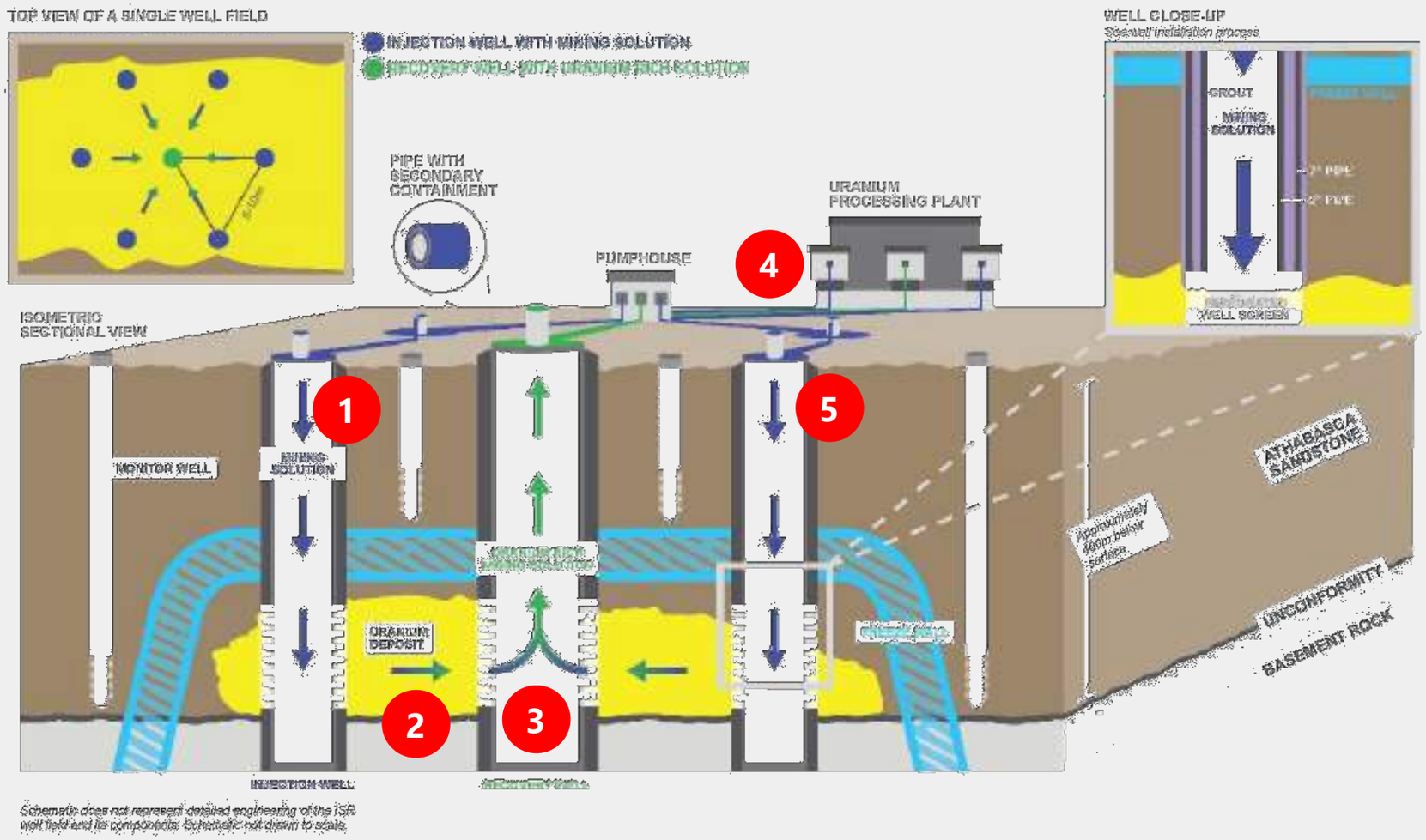
✓ **Geological setting expected to be amenable to ISR mining, with ~90% of the mineral resource (contained metal) hosted in sandstone**

Denison Mines

NOTES: (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) Indicated resources are inclusive of Reserves; (3) The PFS does not include any economic analysis based on estimated Inferred resources.



Phoenix Operation:
Application of low-cost ISR mining method to high-grade Athabasca Basin

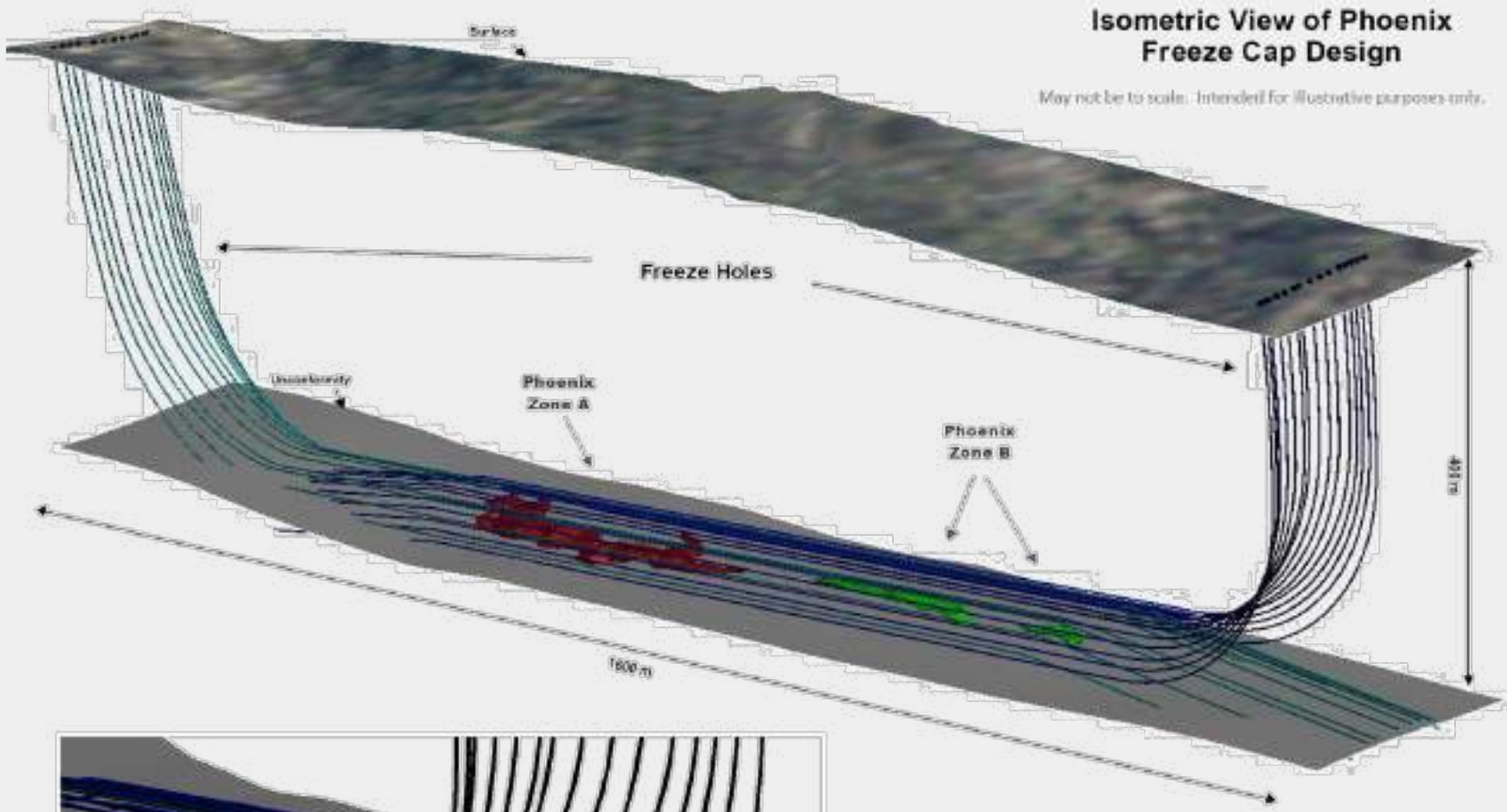


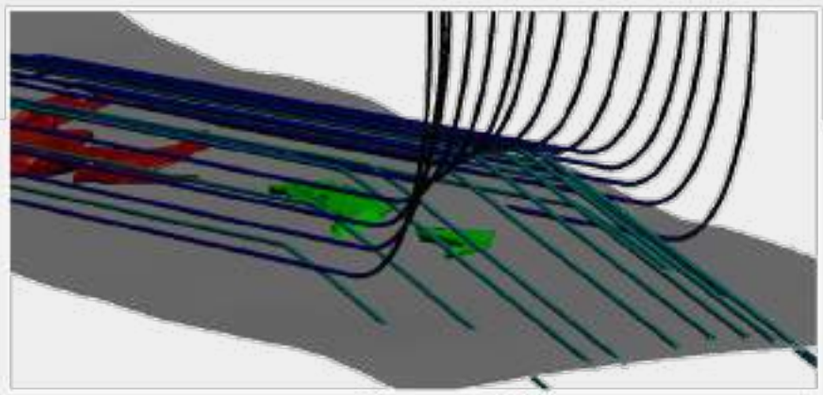
ISR Mining Process[(1)]:

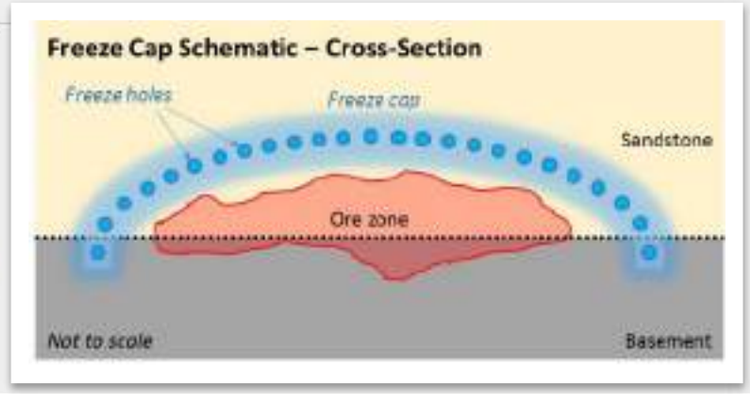
1. Mining solution (also known as “lixiviant”) is pumped through a permeable orebody via injection well
2. Lixiviant dissolves the uranium as it travels through the orebody
3. Uranium bearing mining solution (“UBS”) is pumped back to surface via recovery well
4. UBS is sent to a processing plant on surface for chemical separation of the uranium and reconditioning of lixiviant
5. Lixiviant is returned back to well field for further production

NOTES: (1) Refer to the Wheeler River Technical Report titled “Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada” dated September 24, 2018.

Phoenix Freeze Cap:
Novel concept to contain mining solution, using established technology







Artificial freeze cap replicates confining layer typically required for ISR mining operations(1)

- Parallel cased holes drilled from surface and anchored into impermeable basement rock surrounding the Phoenix deposit
- Circulation of low-temperature brine solution through cased pipes will freeze groundwater in sandstone surrounding the deposit
- 10 metre thick freeze wall, together with basement rocks will encapsulate Phoenix deposit

✓**Eliminates common environmental concerns with ISR mining and facilitates controlled reclamation**

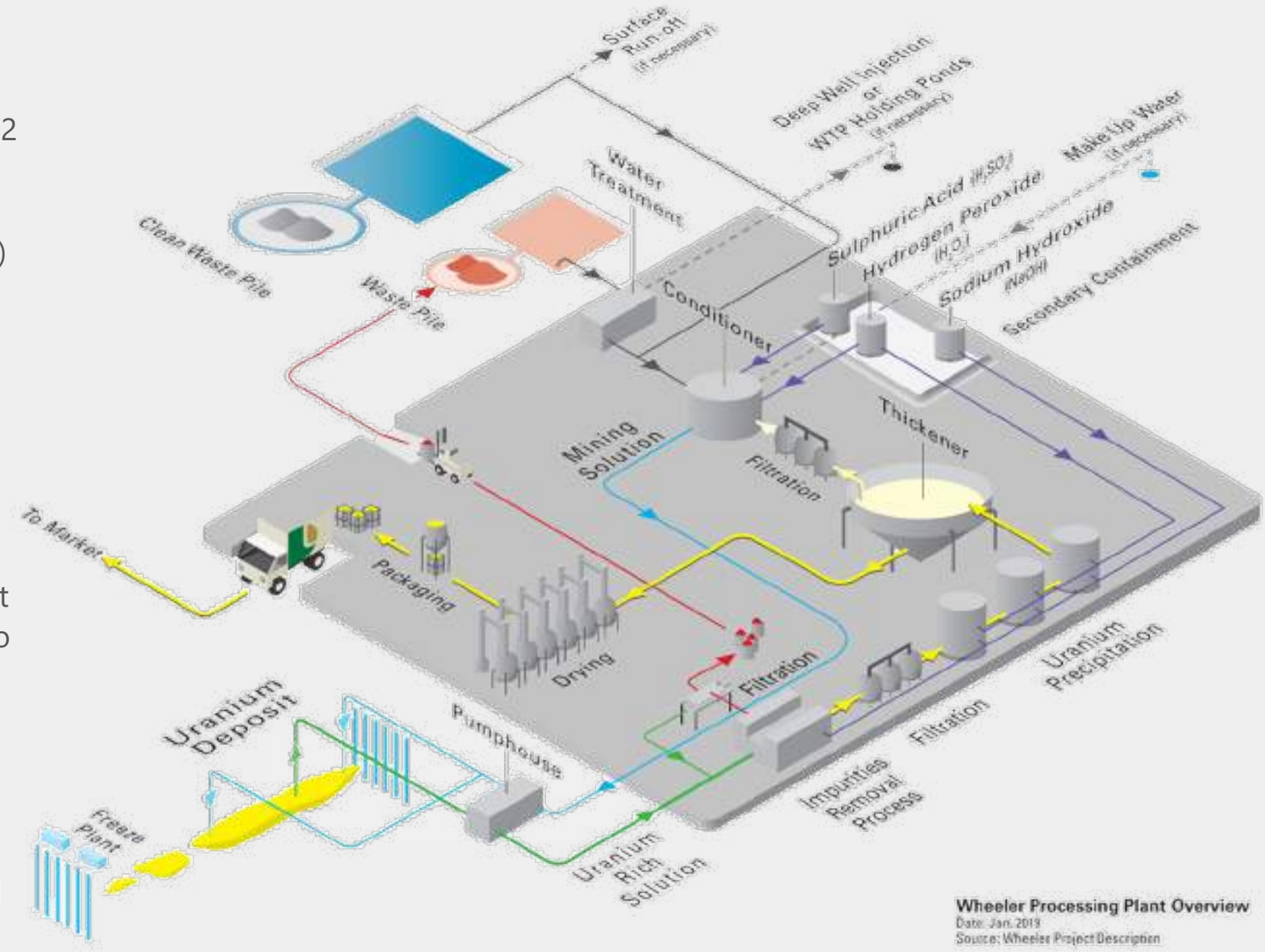
NOTES: (1) Indicative design only. Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018.

Phoenix ISR Processing Plant:
Closed loop system and simplified plant design reduces the need for discharge

On-Site Processing Plant(1)

- Annual production between 6 and 12 million lbs U_3O_8 – depends on uranium concentrations from wellfield (10 g/L → 6M lbs U_3O_8 / yr)
- No crushing or grinding circuits required – results in small footprint
- Low impurity solution allows for direct precipitation and eliminates need for ion exchange or solvent extraction circuits
- Potential for closed loop system that recycles mining solution with little to no discharge of treated effluent
- Drying/calcining to be done on-site in preparation for market

✓**Powered by Provincial power grid**



Wheeler Processing Plant Overview
Date: Jan. 2019
Source: Wheeler Project Description

NOTES: (1) Indicative design only. Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018.

Phoenix Test Work: Continues to confirm suitability of ISR mining method

Ongoing and future test work designed to build upon initial data and test results incorporated into the PFS

- **PFS Laboratory Tests[1]:** High rates of recovery in extraction (+90%) and processing (98.5%) from column and agitated leach tests
- **2020 Core Leach Tests[2]:** Initial data from testing of intact core, from Phoenix Zone A high-grade, includes elemental uranium ("uranium") concentrations, after startup, in the range 200% higher than minimum level used in PFS process plant design (average of 29.8 g/L uranium over 20 days of testing)
- **Bulk Hydraulic Conductivity[3]:** Pump and injection tests completed during the 2019 ISR Field Test from CSW2 (drill hole GWR-032), after use of the MaxPerf Drilling Tool, produced K values (measure of permeability) consistent with the values used in the PFS

Core Leach Test Apparatus at SRC Laboratory in Saskatoon

NOTES: (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) See Denison's news release from February 19, 2020 for details; (3) See Denison's news release from February 24, 2020 for details

Phoenix ISR Operation:
Different mining method and a different type of operation(1)

Advantages of ISR mining compared to existing uranium mining in Canada:

- ✓ Small surface footprint
- ✓ Lower water consumption
- ✓ Lower energy consumption
- ✓ Potentially near zero CO_2 emissions
- ✓ Small volume (potentially zero) treated effluent released to surface water bodies
- ✓ Potential for lower radiation doses to workers
- ✓ No tailings production
- ✓ Very small volumes of clean waste rock (sandstone core from wellfield development)

NOTES: (1) Refer to the "Wheeler River Project Provincial Technical Proposal and Federal Project Description", dated May 2019.

2019 Phoenix ISR Field Test:
A first of its kind ISR field test in the Athabasca Basin

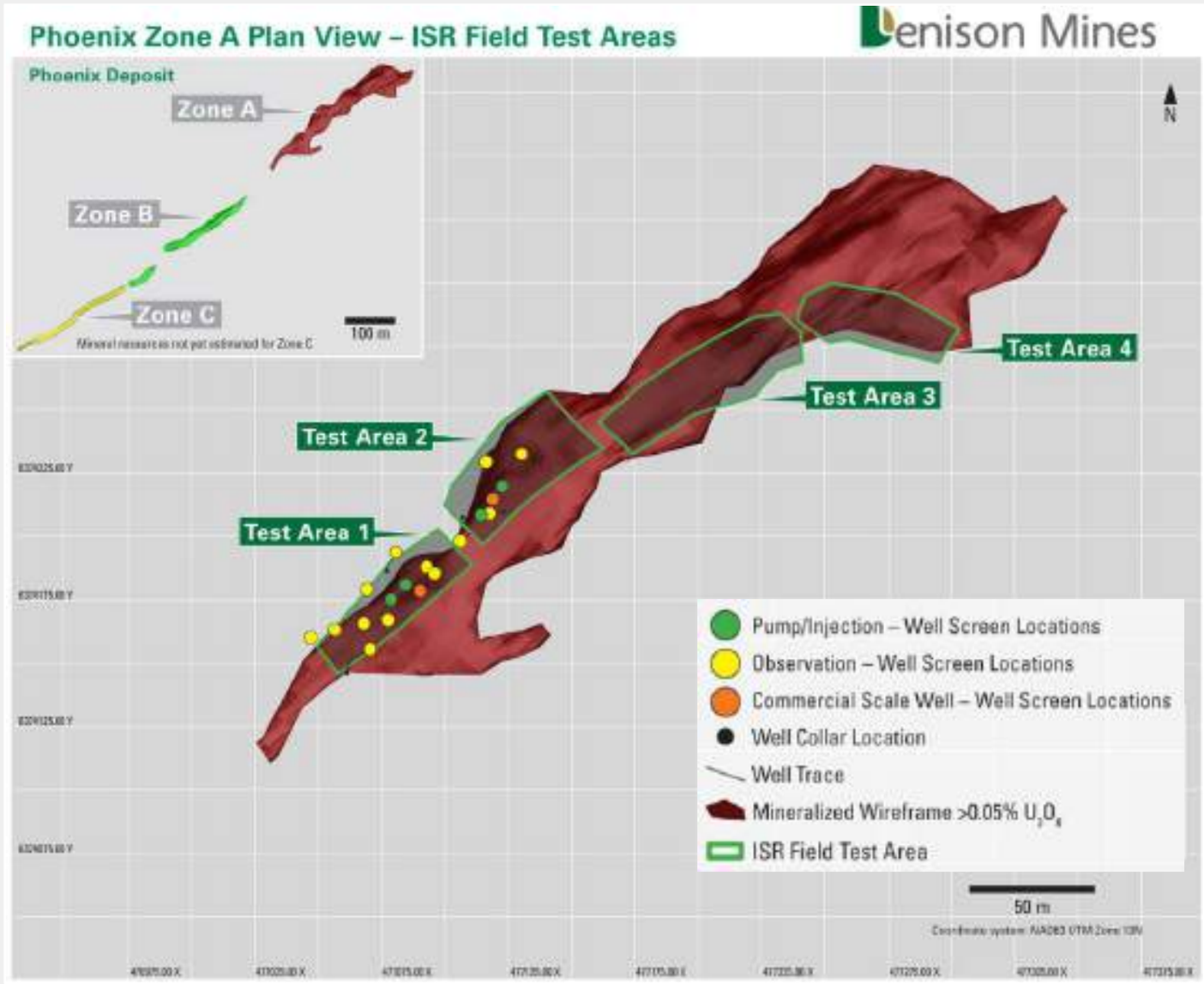
Installation of Commercial Scale Wells as part of ISR Field test work at Wheeler River Phoenix Deposit, Summer 2019

Phoenix ISR Field Test:
A first of its kind ISR field test in the Athabasca Basin(1)

2019 ISR Field Test Objectives:

- In-situ field work necessary to increase the confidence / reduce risks associated with use of ISR mining method at Phoenix
  - Data required for detailed hydrogeological modelling
  - Forms the basis for ISR wellfield design and supports the EIA process
- Phoenix deposit divided into four (4) representative test areas
  - Designed to represent each of the various fluid flow domains expected within the deposit
  - Expected to cover ~65% of the Indicated Mineral Resources estimated for the Phoenix deposit

✓**2019 Test Program: Acquiring data from Test Area 1 and Test Area 2**



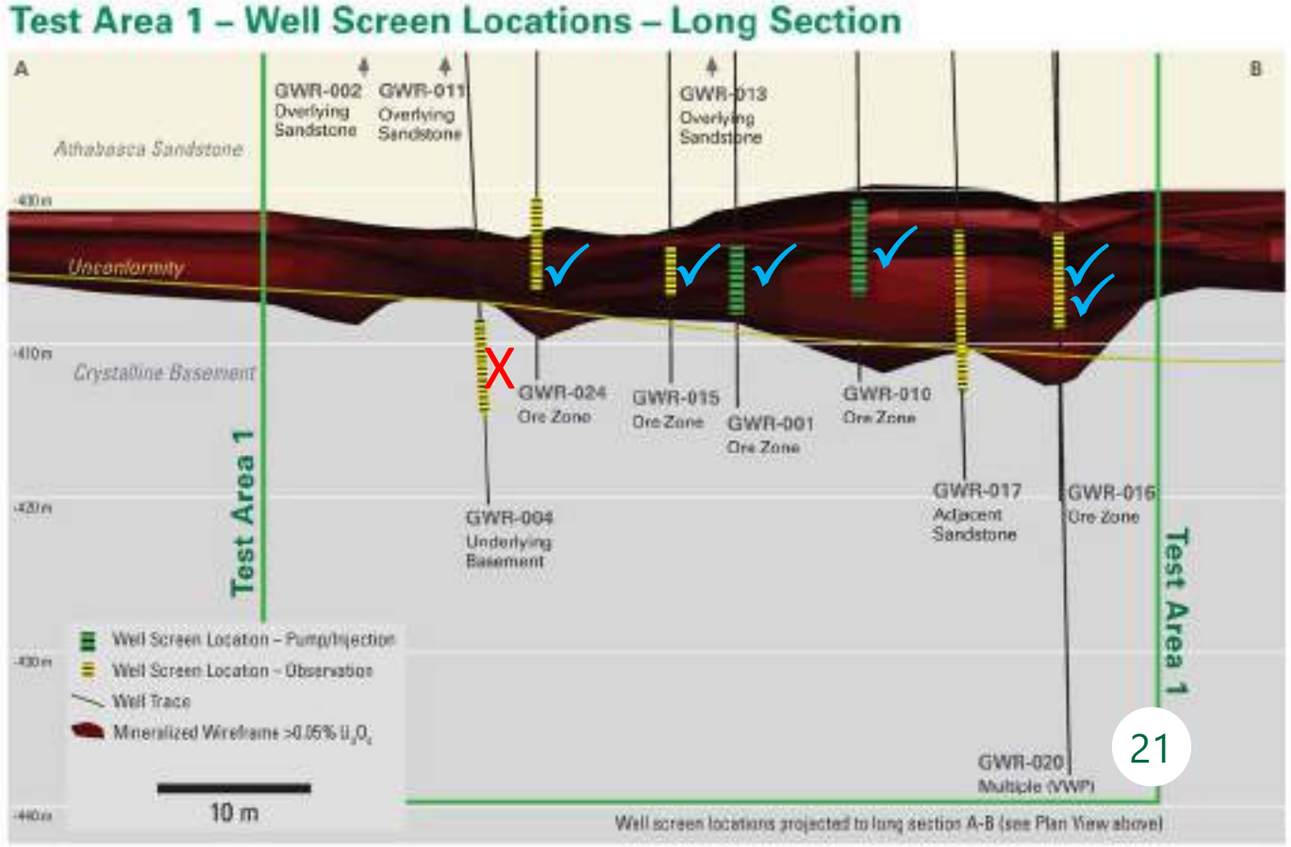
NOTES: (1) See Denison's news releases dated June 26, 2019, August 27, 2019, September 19, 2019, and October 31, 2019 for additional details.

ISR field testing at Wheeler River Phoenix Deposit, Summer 2019

Phoenix ISR Field Test: Positive initial results reported from Test Area 1

Confirmed hydraulic connectivity within maximum extent of the ore zone tested

- Initial pump and injection tests completed
- Process involves pumping water from, or injecting water into, pump/injection wells installed in the test area
- Hydraulic response observed over the entire 34 metres of strike length associated with the ore zone formation in the test area
- No hydraulic response observed in underlying basement rocks – supportive of expectation that basement units below the deposit will provide containment of ISR mining solution, in conjunction with the planned freeze dome



Denison Mines

NOTES: (1) See Denison's news release dated August 27, 2019 for additional details.

Phoenix ISR Field Test: Positive initial results reported from Test Area 2

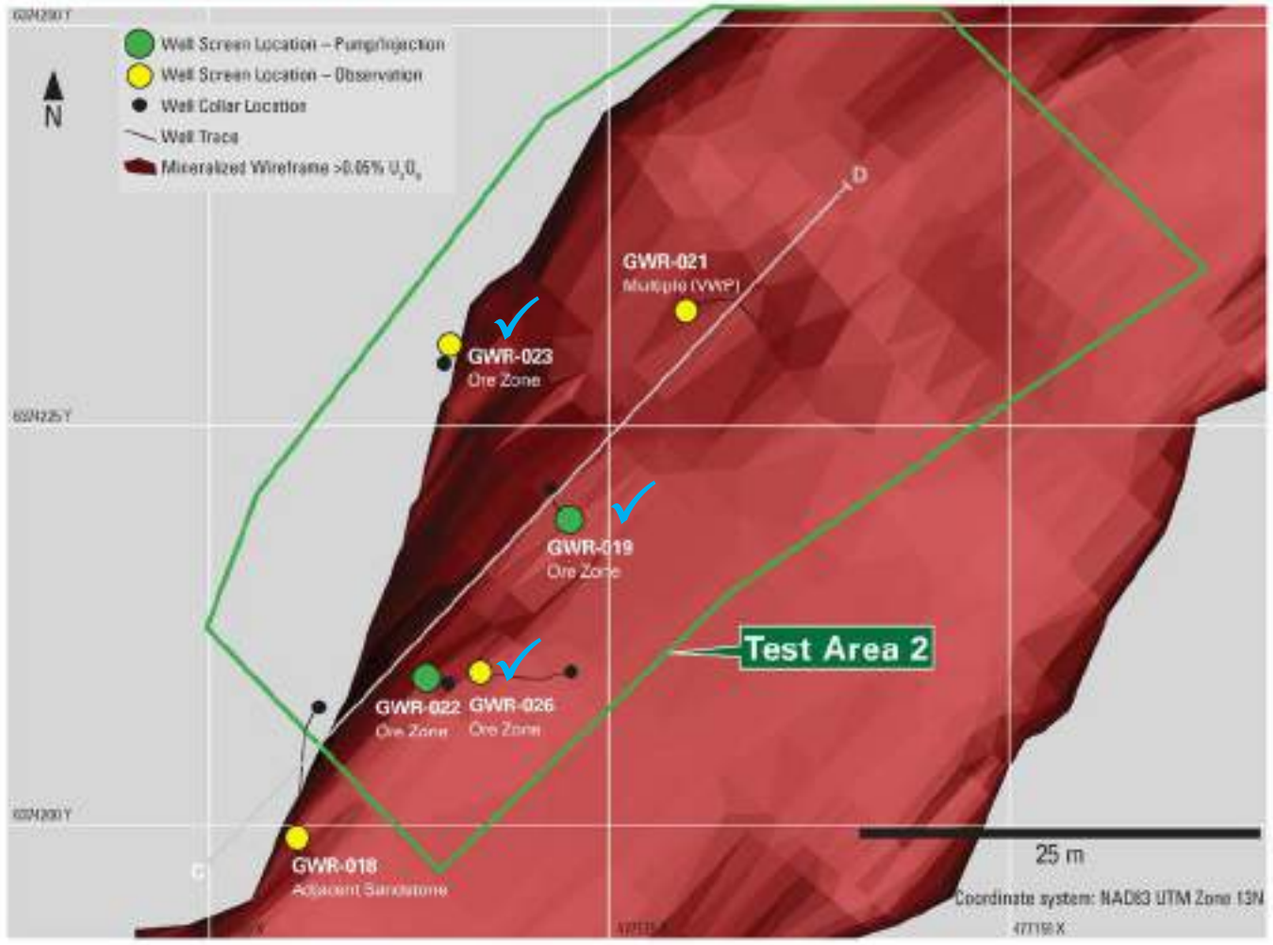
Confirmed hydraulic connectivity within a significant portion of the ore zone tested

- Test Area 2 is interpreted to be more geologically complex than Test Area 1 – relating to variable structure and alteration
- Hydraulic connectivity observed over strike length of approximately 15 metres (of a possible 30 metres) and maximum length across-strike (16 metres)
- Lack of response noted in GWR-022 likely associated with the high clay content observed in this hole from drill core – consistent with expectations of fluid flow for that area of the deposit
- Similar to Test Area 1, no hydraulic response observed in underlying basement rocks – supportive of expectation that basement units below the deposit will provide containment of ISR mining solution

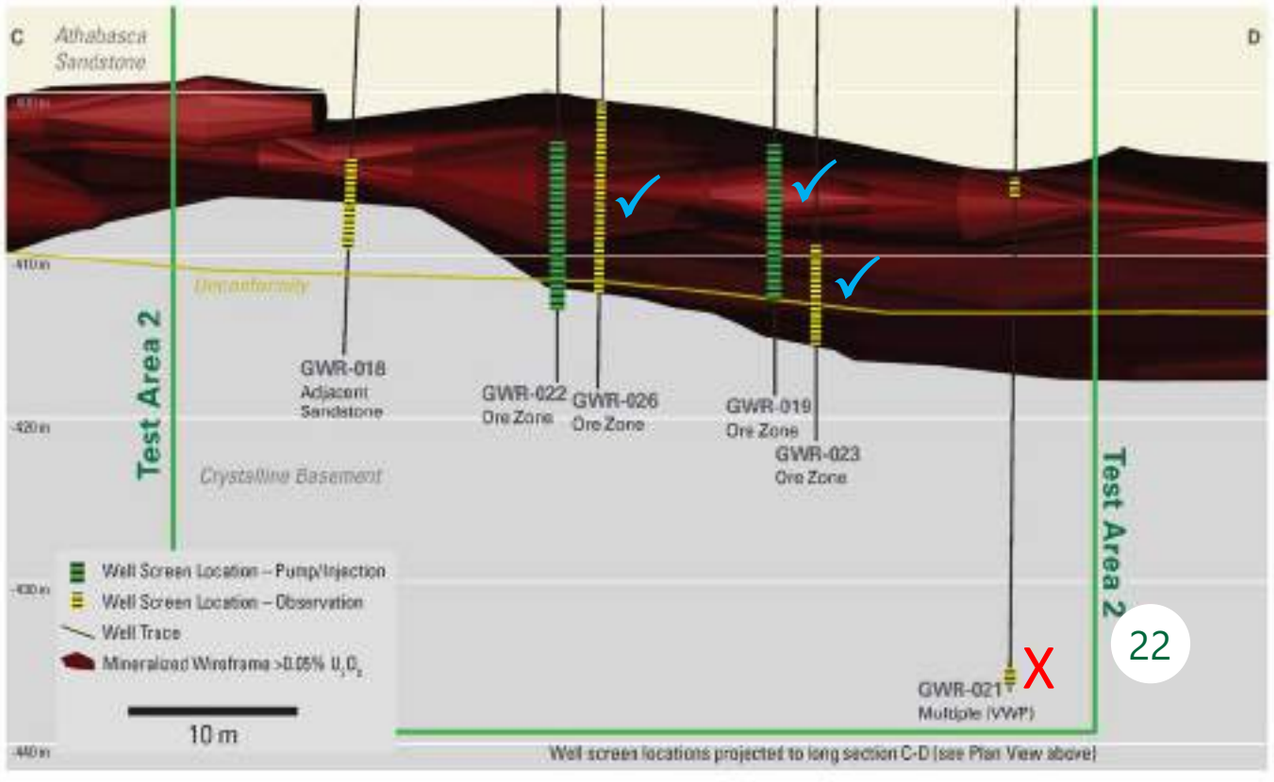
Denison Mines

NOTES: (1) See Denison's news release dated September 19, 2019 for additional details.

Test Area 2 – Well Screen Locations – Plan View



Test Area 2 – Well Screen Locations – Long Section



Phoenix ISR Field Test: Advancement to installation of Commercial Scale Wells(1)

Athabasca Basin's first large-diameter Commercial Scale Wells ("CSWs") for ISR:

- Positive ISR field tests provided confidence required to commence with the installation of higher-cost / larger-diameter CSWs
- Completion of each CSW included the drilling of a large-diameter vertical borehole (~12 inches in diameter) approximately 400 metres from surface, to intersect the Phoenix ore body, and the installation of well materials **designed to meet expected environmental and regulatory standards for eventual ISR mining**
- Long-duration hydrogeological tests carried out to complete the 2019 ISR Field Test – designed to **allow for the simulation of fluid flow under conditions similar to an envisioned commercial production environment.**
- Also expected to provide useful information related to costs and schedule

Denison Mines

NOTES: (1) See Denison's news release dated September 19, 2019, October 31, 2019, and December 18, 2019 for additional details.

CSW installed at Wheeler River Phoenix Deposit, Summer 2019

Phoenix ISR Field Test: Successful deployment of the MaxPERF Drilling Tool[(1)]

Installation of CSWs allows for testing of MaxPERF Drilling Tool – to increase access to existing permeability of the ore zone

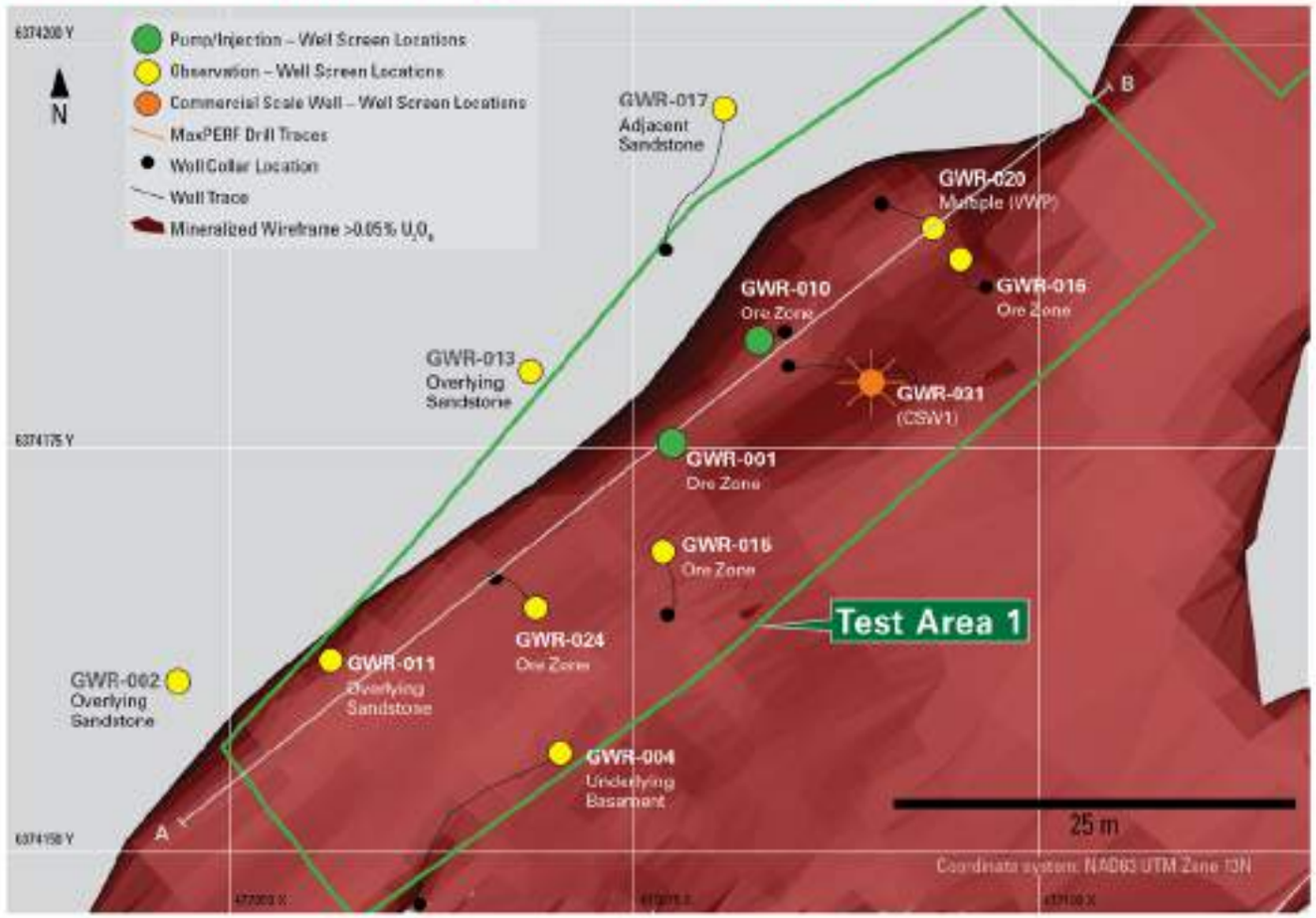
- Successful installation of CSW1 (drill hole GWR-031, in Test Area 1) and CSW2 (drill hole GWR-032, in Test Area 2) **allows for additional test work to be completed.**
- Completed 28 **lateral drill holes (penetration tunnels)** using the MaxPERF Drilling Tool in CSW1 – successfully executed within a variety of ore types associated with Phoenix.
- Initial short-duration hydrogeological tests confirmed increased flow rates in Test Area 1 following the completion of the MaxPERF drilling in CSW1.
- Taken together with results from CSW2, tests demonstrate MaxPERF Drilling Tool can mechanically engineer increased access to the existing permeability of the ore formation.

Denison Mines

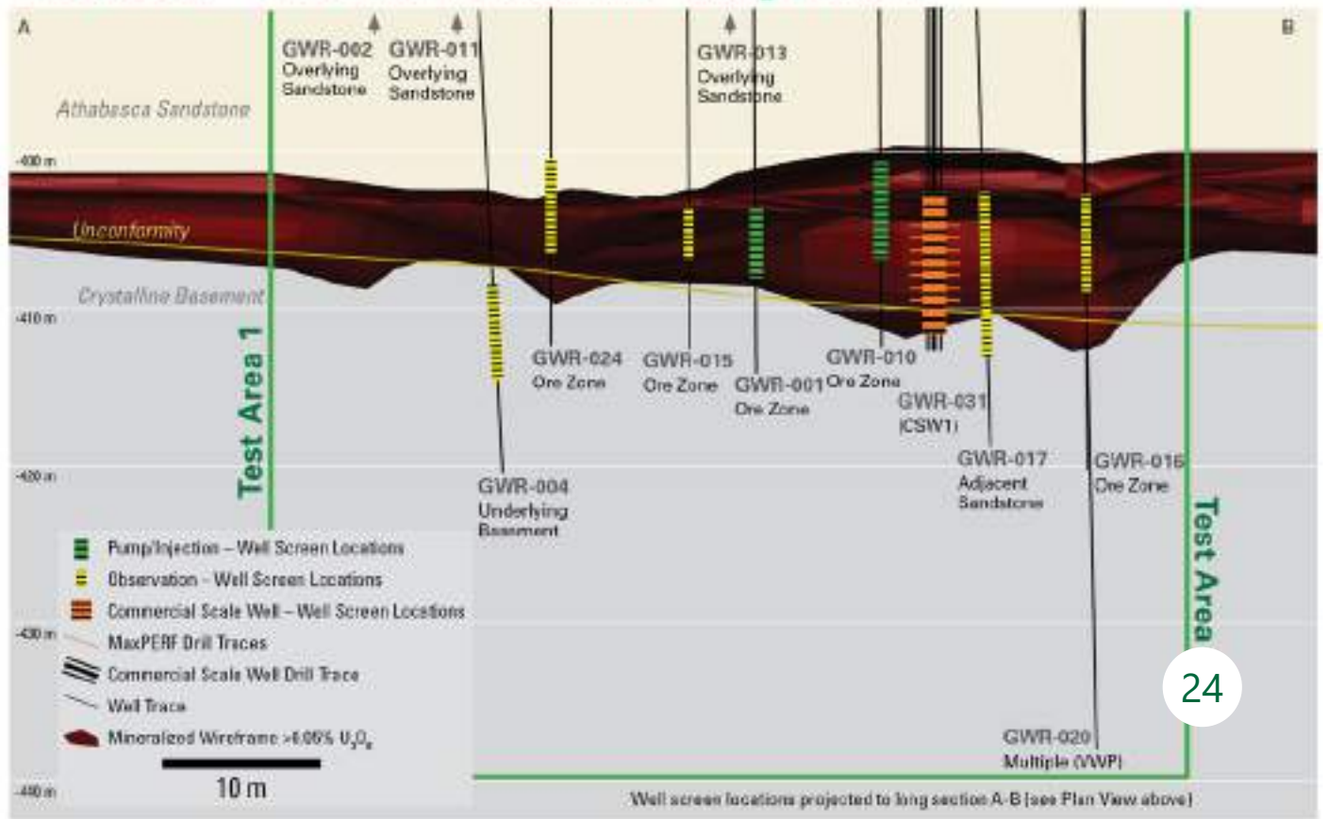
NOTES: (1) See Denison's news releases dated October 31, 2019 and December 18, 2019 for additional details.

Test Area 1 – Well Screen Locations – Plan View

Denison Mines



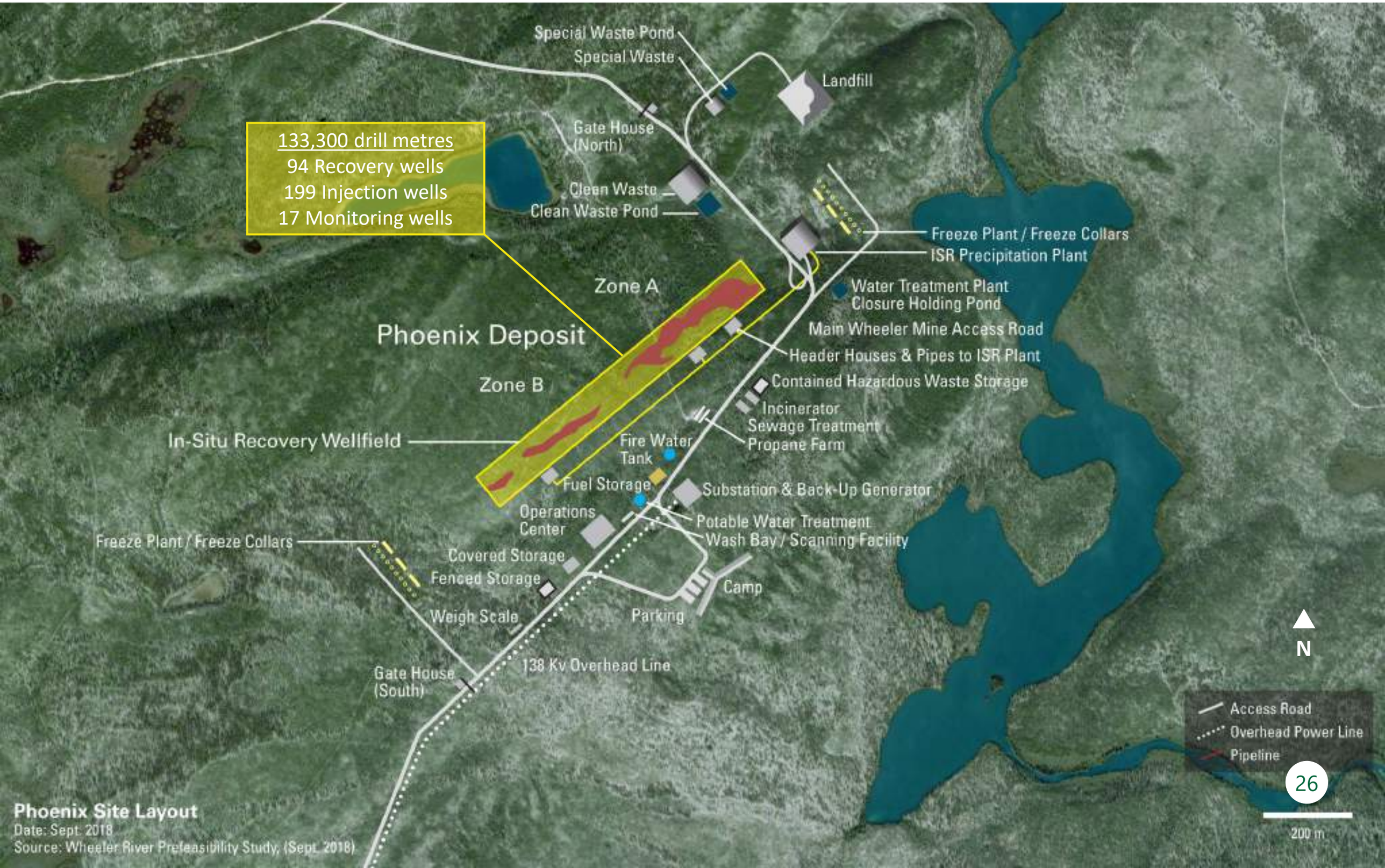
Test Area 1 – Well Screen Locations – Long Section



Wheeler River Development Project:
Two-asset project with staged development plan based on market fundamentals

Wheeler River Site Tour, Summer 2019

Phoenix Operation:
Proposed site layout highlights ISR wellfield & surface infrastructure



Phoenix Site Layout
Date: Sept. 2018
Source: Wheeler River Prefeasibility Study, (Sept. 2018)

Phoenix Operation:
Potential for ISR mining method to produce world's lowest cost per pound U_3O_8

Phoenix Operation	PFS Result[(1)]
Mine life	**10 years** (6.0 million lbs U_3O_8 per year on average)
Average cash operating costs	**$4.33 (US$3.33) per lb U_3O_8**
Initial capital costs (100% basis)	**$322.5 million**
Operating margin[(4)]	**89.0%** at US$29/lb U_3O_8
All-in cost[(2)]	**$11.57 (US$8.90) per lb U_3O_8**

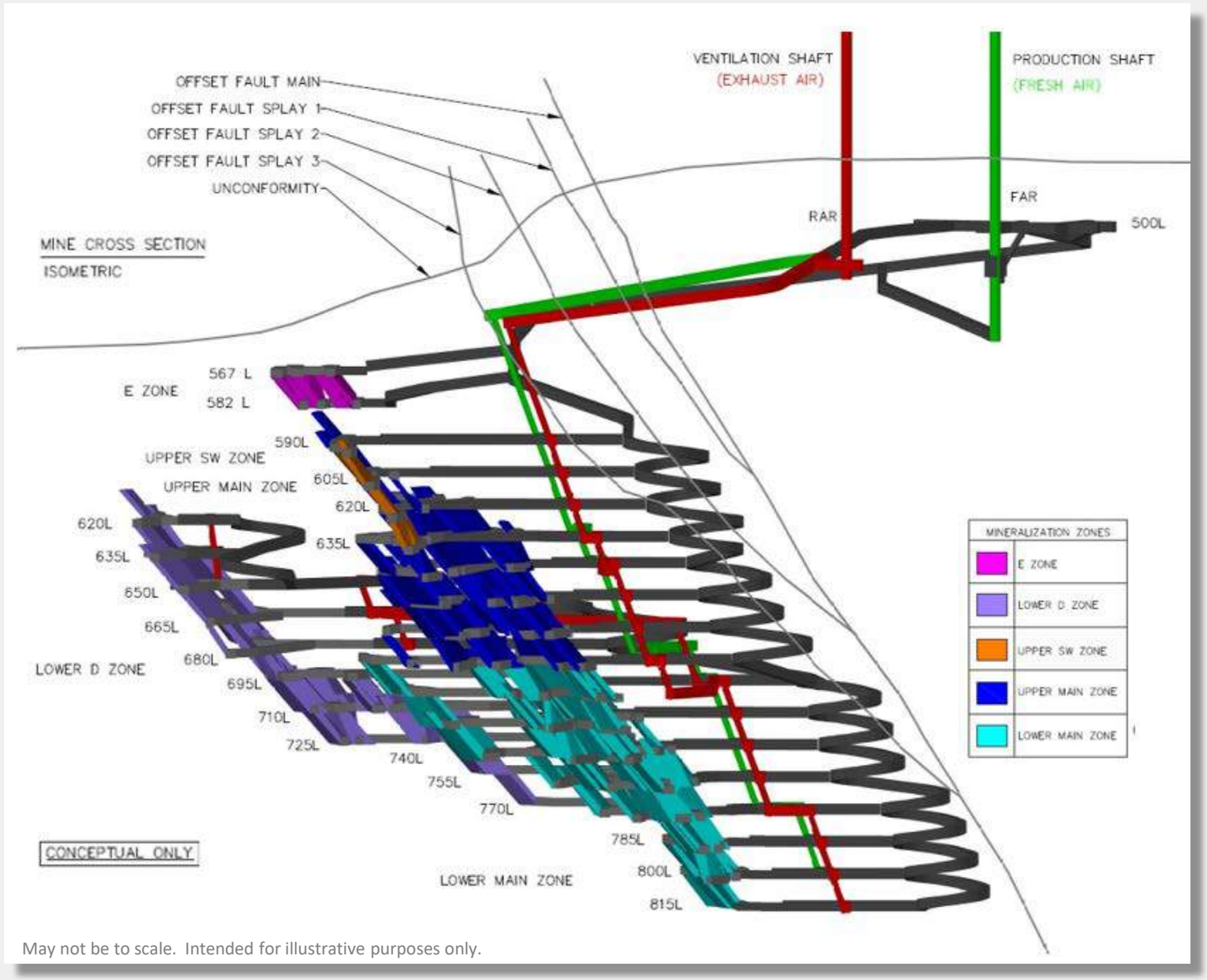
Assumptions / Results	Base Case	High Case
Uranium selling price	UxC Spot Price[(3)]	US$65/lb U_3O_8
Operating margin[(4)]	**91.4%**	**95.0%**
Pre-tax $NPV_{8\%}$[(5)] (100%)	**$930.4 million**	**$1.91 billion**
Pre-tax IRR[(5)]	43.3%	71.5%
Pre-tax payback period[(6)]	~ 21 months	~ 11 months

NOTES: (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) All-in cost is estimated on a pre-tax basis and includes all project operating costs and capital costs, divided by the estimated number of total pounds U_3O_8 to be produced; (3) Spot Price is based on the "Composite Midpoint" spot price scenario from UxC's UMO; (4) Operating profit margin is calculated as uranium revenue less operating costs, divided by uranium revenue. Operating costs exclude all royalties, surcharges and income taxes; (5) NPV and IRR are calculated to the start of pre-production activities for the Phoenix operation in 2021; (6) Payback period is stated as number of years to pay-back from the start of uranium production.

Gryphon Operation:
Minimal site infrastructure owing to toll milling & facilities at Phoenix site

Gryphon Site Layout
Date: Sept. 2018
Source: Wheeler River Prefeasibility Study, (Sept. 2018)

Gryphon Operation:
Additional low-cost production with conventional UG mining



May not be to scale. Intended for illustrative purposes only.

Moderate grades and style of mineralization allows for conventional UG mining[(1)]

- **61.9 million pounds U_3O_8 @ 1.7% U_3O_8** Indicated mineral resources (1,643,000 tonnes)[(2)]
  - 1.9M lbs U_3O_8 in Inferred mineral resources (73,000 tonnes @ 1.2% U_3O_8)[(3)]
- Mineralization is hosted in basement rock, located 520 to 850 metres below surface – access via shaft and underground ramp
- Longitudinal retreat longhole stoping with 15 metre sub-level intervals
- 600 tonnes per day production
- Generally constrained by available capacity at McClean Lake mill

NOTES: (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) Indicated mineral resources are inclusive of Reserves; (3) The PFS does not include any economic analysis based on estimated Inferred mineral resources.

Gryphon Operation: Assumes processing at 22.5% Denison owned McClean Lake mill(1)

Processes +12% of global uranium production:

- Operating under 10-year license granted by Canadian Nuclear Safety Comm. in 2017
  - Licensed for 24M lbs U_3O_8 / year
- PFS assumes Cigar Lake production will decline to 15M lbs U_3O_8/year (Phase 2) at time of co-processing with Gryphon
  - Up to 9M lbs U_3O_8/year excess capacity
- **98.2% estimated recovery** from Gryphon under current McClean operating conditions
- **Required upgrades:** expansion of leaching circuit, addition of filtration system and tailings thickener, expansion of acid plant, various misc. upgrades, plus Highway 914 extension.

✓**Ownership: 22.5% Denison, 70% Orano (formerly "Areva"), 7.5% OURD**

Denison Mines

NOTES: (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018.

Gryphon Operation:
Additional low-cost production with conventional UG mining

Gryphon Operation	PFS Result[(1)]
Mine life	**6.5 years** (7.6 million lbs U_3O_8 per year on average)
Average cash operating costs	**$15.21 (US$11.70) per lb U_3O_8**
Initial capital costs (100% basis)	**$623.1 million**
Operating margin[(3)]	**77.0%** at US$50/lb U_3O_8
All-in cost[(2)]	**$29.67 (US$22.82) per lb U_3O_8**

Assumptions / Results	Base Case	High Case
Uranium selling price	US$50/lb U_3O_8	US$65/lb U_3O_8
Operating margin[(3)]	**77.0%**	**82.3%**
Pre-tax $NPV_{8\%}$[(4)] (100%)	**$560.6 million**	**$998.8 million**
Pre-tax IRR[(4)]	23.2%	31.0%
Pre-tax payback period[(5)]	~ 37 months	~ 31 months

Denison Mines

NOTES: (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) All-in cost is estimated on a pre-tax basis and includes all project operating costs and capital costs, divided by the estimated total number of pounds U_3O_8 to be produced; (3) Operating profit margin is calculated as uranium revenue less operating costs, divided by uranium revenue. Operating costs exclude all royalties, surcharges and income taxes; (4) NPV and IRR are calculated to the start of pre-production activities for the Gryphon operation in 2026; (5) Payback period is stated as number of years to pay-back from the start of uranium production.

Wheeler River PFS [1] :
Statement of Reserves and Denison indicative post-tax results

Reserves[2, 3, 4, 7, 8]

Deposit	Class.	Tonnes	Grade	Lbs U_3O_8	Denison (90%)
Phoenix[5]	Probable	141,000	19.1% U_3O_8	59.7M	53.7M
Gryphon[6]	Probable	1,257,000	1.8% U_3O_8	49.7M	44.7M
Total	**Probable**	**1,398,000**	**3.5%**	**109.4M**	**98.4M**

Indicative Denison post-tax results

Financial Results	Denison (90%)
Initial capital costs	**$290.3 million**
Base case post-tax IRR[9]	32.7%
Base case post-tax $NPV_{8\%}$[9]	$755.9 million
Base case post-tax payback period[10]	~ 26 months
High case post-tax IRR[9]	**55.7%**
High case post-tax $NPV_{8\%}$[9]	**$1.48 billion**
High case post-tax payback period[10]	**~12 months**

Denison Mines

NOTES: (1) Refer to the Wheeler River Technical Report titled "Pre-feasibility Study Report for the Wheeler River Uranium Project, Saskatchewan, Canada" dated September 24, 2018; (2) Reserve statement is as of September 24, 2018; (3) CIM definitions (2014) were followed for classification of mineral reserves; (4) Mineral resources are inclusive of reserves; (5) Mineral reserves for the Phoenix deposit are reported at the mineral resource cut-off grade of 0.8% U_3O_8. The mineral reserves are based on the block model generated for the May 28, 2014 mineral resource estimate. A mining recovery factor of 85% has been applied to the mineral resource above the cut-off grade; (6) Mineral reserves for the Gryphon deposit are estimated at a cut-off grade of 0.58% U_3O_8 using a long-term uranium price of USD$40/lb, and a USD$/CAD$ exchange rate of 0.80. The mineral reserves are based on the block model generated for the January 30, 2018 mineral resource estimate. The cut-off grade is based on an operating cost of CAD$574/tonne, milling recovery of 97%, and 7.25% fee for Saskatchewan royalties. Mineral reserves include for diluting material and mining losses; (7) Mineral reserves are stated at a processing plant feed reference point; (8) Numbers may not add due to rounding; (9) NPV and IRR are calculated to the start of pre-production for the Phoenix operation in 2021; (10) Payback period is stated as number of months to pay-back from the start of uranium production.

Diversified Asset Portfolio:
Offers additional leverage to rising uranium prices

McClean Lake Uranium Project[(1)]: Processing plant licensed for annual production of 24M lbs U_3O_8

IMPORTANT *On March 23, 2020, Cameco Corporation announced that it is temporarily suspending production at its Cigar Lake uranium mine due to the threat posed by the COVID-19 pandemic. Cigar Lake ore is processed at the McClean Lake mill. The decision to suspend production at Cameco's Cigar Lake mine was made in conjunction with the operator of the McClean Lake Joint Venture (Orano Canada) to suspend production at the McClean Lake mill.*

"(the APG) financing allows Denison to benefit immediately from the cash flow expected to be produced from the McClean Lake mill over the next several years, without the overhang of a bullet payment or convert at the end of a debt, and without selling its stake in the mill"

David Cates, President & CEO

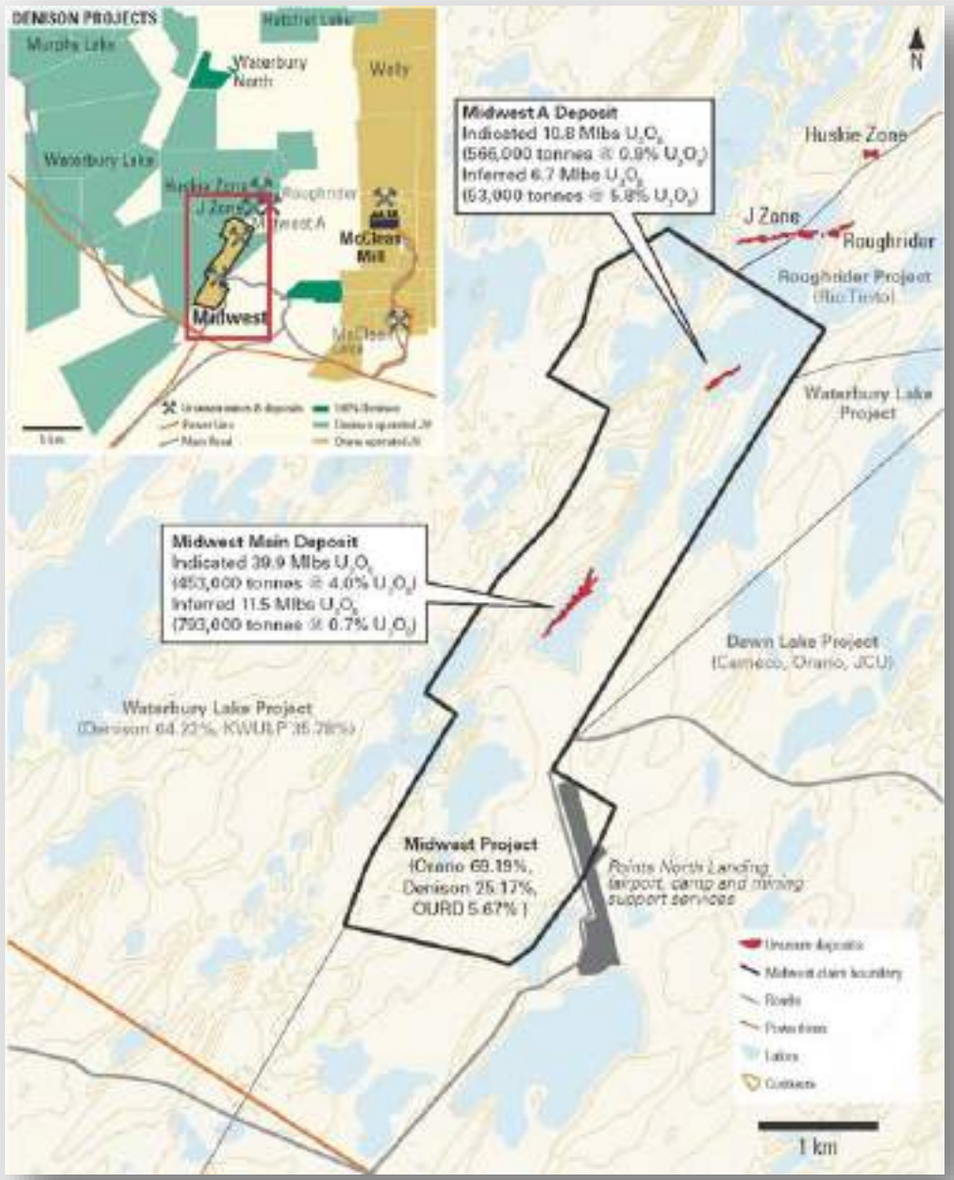
- Processing ~18M lbs U_3O_8/year from Cigar Lake mine
- Cigar Lake toll milling cash flows monetized in transaction with Anglo Pacific Group ("APG") in 2017 for $43.5M
- Operating license renewed for 10-year period by CNSC in 2017

✓**Ownership:** 22.5% Denison, 70.0% Orano Canada, 7.5% OURD

Deposit	Class.	Tonnes	Grade U_3O_8	Lbs U_3O_8	Denison Share
McClean North	Indicated	205,800	2.8%	12.4M	2.8M
Caribou	Indicated	47,800	2.6%	2.8M	0.6M
Sue D	Indicated	122,800	1.1%	2.8M	0.6M
Sue E	Inferred	483,400	0.69%	7.3M	1.6M

Notes: (1) Technical Report on the Denison Mines Inc. Uranium Properties, Saskatchewan, Canada, dated November 21, 2005, as revised February 16, 2006, by Richard E. Routledge, M.Sc., P. Geo of Scott Wilson RPA (now RPA Inc.); Technical Report on the Sue D Uranium Deposit Mineral Resource Estimate, Saskatchewan, Canada, dated March 31, 2006, by Richard E. Routledge, M.Sc., P. Geo. and James W. Hendry, P. Eng of Scott Wilson RPA (now RPA Inc.); Technical Report on the McClean North Uranium Deposit Mineral Resource Estimate, Saskatchewan, Canada, dated January 31, 2007, by Richard E. Routledge, M.Sc., P. Geo. and James W. Hendry, P. Eng of Scott Wilson RPA (now RPA Inc.), and subsequent revision by letter dated October 20, 2009 from Scott Wilson RPA.

Midwest Uranium Project[(1)]:
Significant increase in mineral resources with updated estimate in 2018



"With the application of more rigorous and robust estimation procedures, in accordance with NI 43-101, we are pleased to see a significant increase in overall project resources, without additional recent drilling."

Dale Verran, MSc, P.Geo, Pr.Sci.Nat

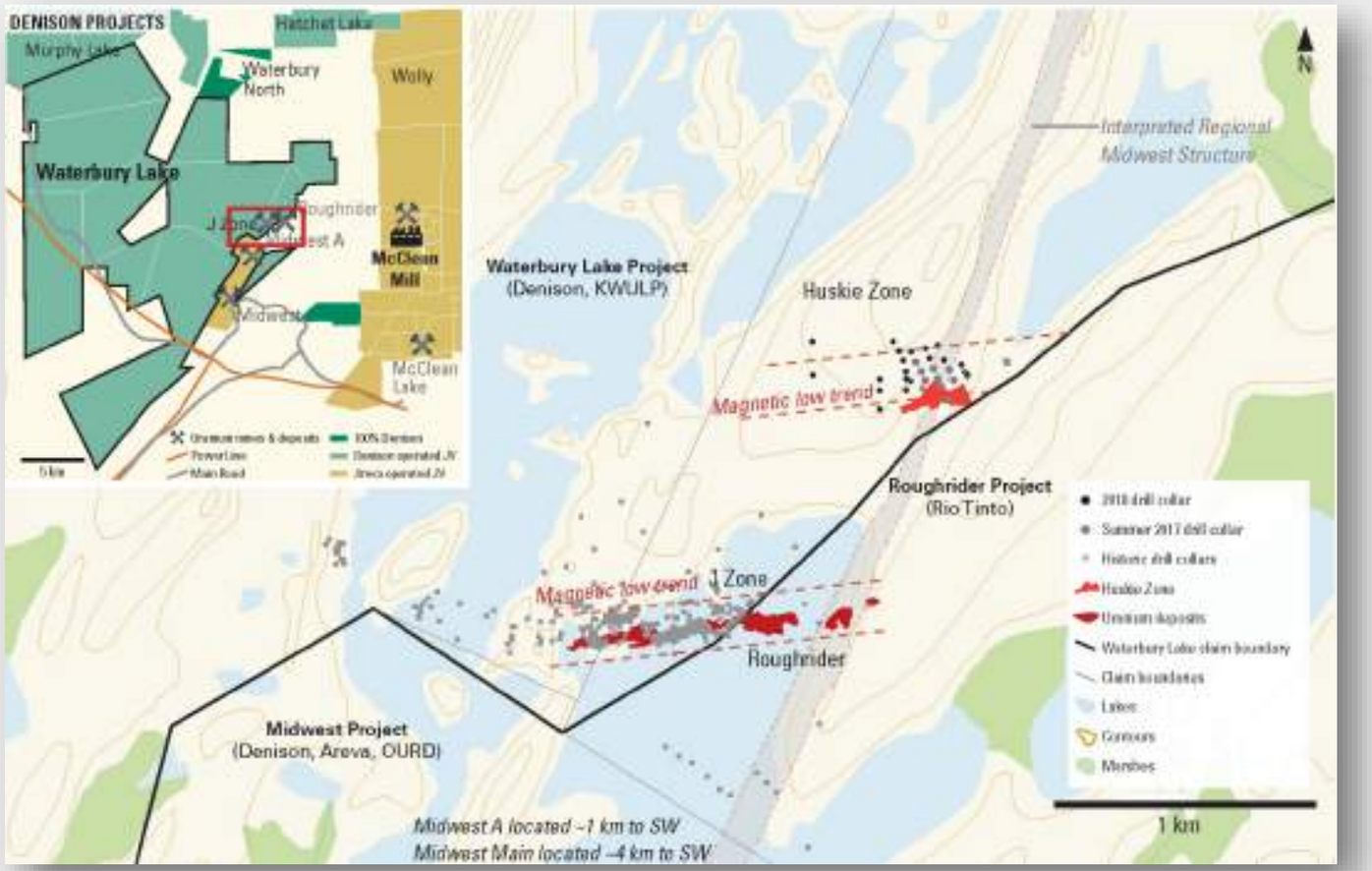
- Mineral resource estimate updated in March 2018
- 25 kilometres by existing roads to the McClean Lake mill
- Environmental Impact Statement ("EIS") approved in 2012

✓**Ownership:** 25.17% Denison, 69.19% Orano, 5.67% OURD

Deposit	Class.	Tonnes	Grade U_3O_8	Lbs U_3O_8	Denison Share
Midwest	Indicated	453,000	4.0%	39.9M	10.1M
Midwest	Inferred	793,000	0.66%	11.5M	2.9M
Midwest A	Indicated	566,000	0.87%	10.8M	2.7M
Midwest A	Inferred	53,000	5.8%	6.7M	1.7M

Notes: (1) Technical Report with an Updated Mineral Resource Estimate for the Midwest Property, Northern Saskatchewan, Canada, dated March 26, 2018, by Dale Verran, MSc, P.Geo, Pr.Sci.Nat. and Chad Sorba, P.Geo, of Denison Mines Corp. and G. David Keller, PGeo, and Oy Leuangthong, PEng, of SRK Consulting.

Waterbury Lake Uranium Project(1): Mineral resources in close proximity to Roughrider & the McClean Lake mill



"The high-grade mineralization at Huskie appears to be controlled by the intersection of east-west striking faults, associated with the graphitic gneiss unit, and cross-cutting northeast striking faults, possibly related to the regional Midwest structure."

Dale Verran, MSc, P.Geo, Pr.Sci.Nat

- Host to J-Zone and Huskie deposits approximately 12 kilometres from the McClean Lake mill
- Adjacent to Rio Tinto's Roughrider project and Denison's Midwest project
- Over 40,000 hectares of exploration ground

✓**Ownership:** 66.57% Denison, 33.43% KHNP

Deposit	Classification	Tonnes	Grade U_3O_8	Lbs U_3O_8	Denison Share
J-Zone	Indicated	291,000	2.0%	12.8M	8.5M
Huskie	Inferred	268,000	0.96%	5.7M	3.8M

Notes: (1) Technical Report with an Updated Mineral Resource Estimate for the Waterbury Lake Property, Northern Saskatchewan, Canada, dated December 21, 2018

Capital Structure & Corporate Information

Market Summary [1]	
Exchanges	TSX: DML, NYSE MKT: DNN
Shares Outstanding	677.7 M
Share Units	7.8 M
Options	15.6 M
Fully Diluted Shares	701.1 M
Market Cap – DML @ C$0.45/share[2]	CAD $305 M
Daily Trading Volume – DML[3]	1.5M Shares
Market Cap – DNN @ U$0.34/share[2]	USD $230 M
Daily Trading Volume – DNN[3]	1.7M Shares

Management & Directors

- David Cates (President & CEO, Director)
- Mac McDonald (Exec. VP & CFO)
- Dave Bronkhorst (VP Operations)
- Tim Gabruch (VP Commercial)
- Amanda Willett (VP Legal)

- Catherine Stefan (Non-Executive Chair)
- W. Robert Dengler (Director)
- Brian D. Edgar (Director)
- Ron F. Hochstein (Director)
- Jun Gon Kim (Director)
- Jack Lundin (Director)
- Patricia M. Volker (Director)

Website: www.denisonmines.com Email: info@denisonmines.com

NOTES: (1) As at October 14th, 2020; (2) Based on shares outstanding above and DML/DNN share prices as of October 14thd, 2020; (3) Average daily trading volume over 90 day period as at October 14th, 2020