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Basin ENERGY

ASX: BSN

Exploration Update

May 2024

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Disclaimer & Competent Persons Statement

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This presentation includes certain "Forward-looking Statements". The words "forecast", "estimate", "like", "anticipate", "project", "opinion", "should", "could", "may", "target" and other similar expressions are intended to identify forward looking statements. All statements, other than statements of historical fact, included herein, including without limitation, statements regarding forecast cash flows and future expansion plans and development objectives of Basin Energy involve various risks and uncertainties. There can be no assurance that such statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements, although such statements are considered by Basin Energy to have a reasonable basis as at the date of this presentation.

All figures in Australian Dollars unless stated otherwise.

Competent Persons Statement & Resource Figure Notes

The information in this announcement that relates to previous exploration results was first reported by the Company in accordance with ASX listing rule 5.7 in the following Company ASX market releases;

Date	Title
30/09/2022	*Company Prospectus*
10/08/2023	*Elevated Radioactivity and Significant Hydrothermal Alteration Identified at Geikie*
20/09/2023	*Basin intersects Uranium Mineralisation up to 0.27% in Maiden Drilling at Geikie*
15/11/2023	*Gravity Survey Identifies Significant Anomalies at Geikie*
9/02/2024	*Basin mobilises for Phase 2 Drilling at Geikie uranium project*
28/05/2024	*Drilling at Geikie identifies 1.5km alteration zone typical of basement-hosted mineralisation*

The information included within this release is a fair representation of available information compiled by Odile Maufrais, M.Sc., a competent person who is a Member of the Australian Institute of Mining and Metallurgy. Odile Maufrais is employed by Basin Energy Ltd as Exploration Manager. Odile Maufrais has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 edition of the Australasian Code of Reporting of Exploration Results, Mineral Resources and Ore Reserves. Odile Maufrais consents to the inclusion in this presentation of the matters based on her work in the form and context in which it appears.

All resource figures shown within this document of deposits within the Athabasca, unless stated are quoted from the International Atomic Energy Agency (IAEA) Tecdoc 1857. Resources are global and include mined resource and all classification of remaining resource. Resource Size (U_3O_8) is the amount of contained uranium (in Mlbs U_3O_8) and average grade (in % U_3O_8) of the deposit/system. This number is presented without a specific cut-off grade, as the cut-off value differs from deposit to deposit and is dependent on resource calculation specifications. Discrepancies between values in this field and other values in the public domain may be due to separate cut-off values used, or updated values since the writing of this document. For system entries, the values for the size were obtained by adding the individual deposits values whereas average grade values were derived using a weighted average of the individual deposits.

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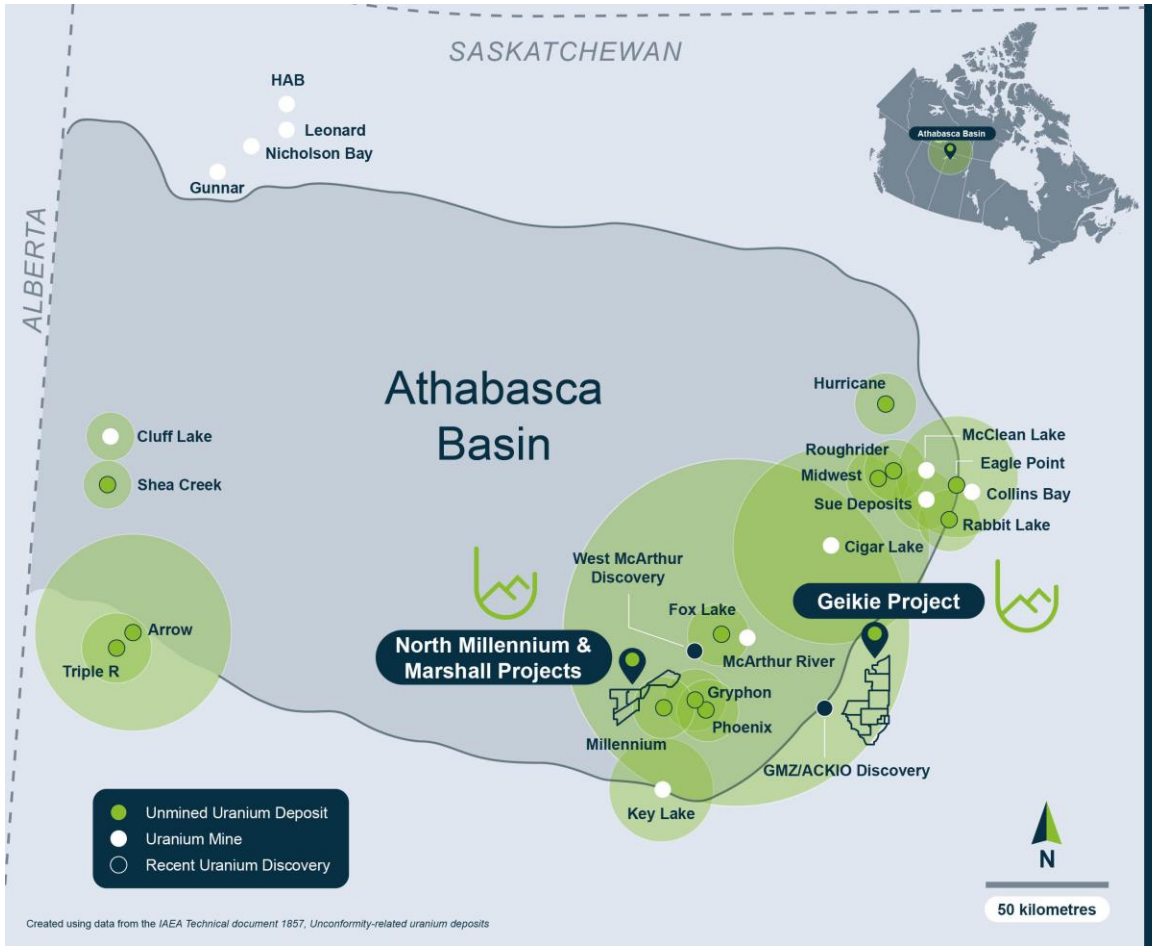
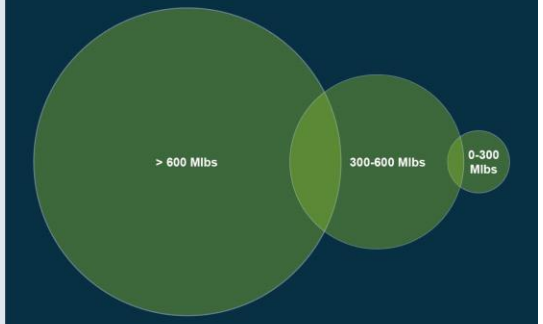
Pureplay uranium in a proven neighborhood



Deposit	Resource Size (U_3O_8 Mlbs)	Resource Grade (%)
McArthur River	674.9	16.99
Cigar Lake	349.3	15.65
Arrow	306.1	4.62
Eagle Point	275.3	0.91
Key Lake	182.3	3.07
Triple R	135.1	1.80
Millennium	104.8	3.76
Shea Creek	95.9	1.47
Phoenix	70.9	19.23
Roughrider	70.8	4.75
Cluff Lake	70.0	1.48
Fox Lake	68.1	7.98
Midwest	49.2	3.55
Hurricane Deposit	48.6	34.5
Sue Deposits	45.9	3.75
Gryphon	43.0	2.30
Rabbit Lake	42.8	0.32



Pureplay uranium exploration company with interests in three projects. Ongoing active exploration

Direct exposure to high grade uranium within the world class uranium mining district of the Athabasca Basin, Saskatchewan, Canada – a top three global uranium producer for over 45 years

Sources: World Nuclear Performance Report 2021, World Nuclear Association, September 2021; The Nuclear Fuel Report Global Scenarios for Demand and Supply Availability 2021-2040, World Nuclear Association April 2022
Regional Resource figures taken from International Atomic Energy Agency Technical document 1857, Unconformity-related uranium deposits, refer to disclaimer

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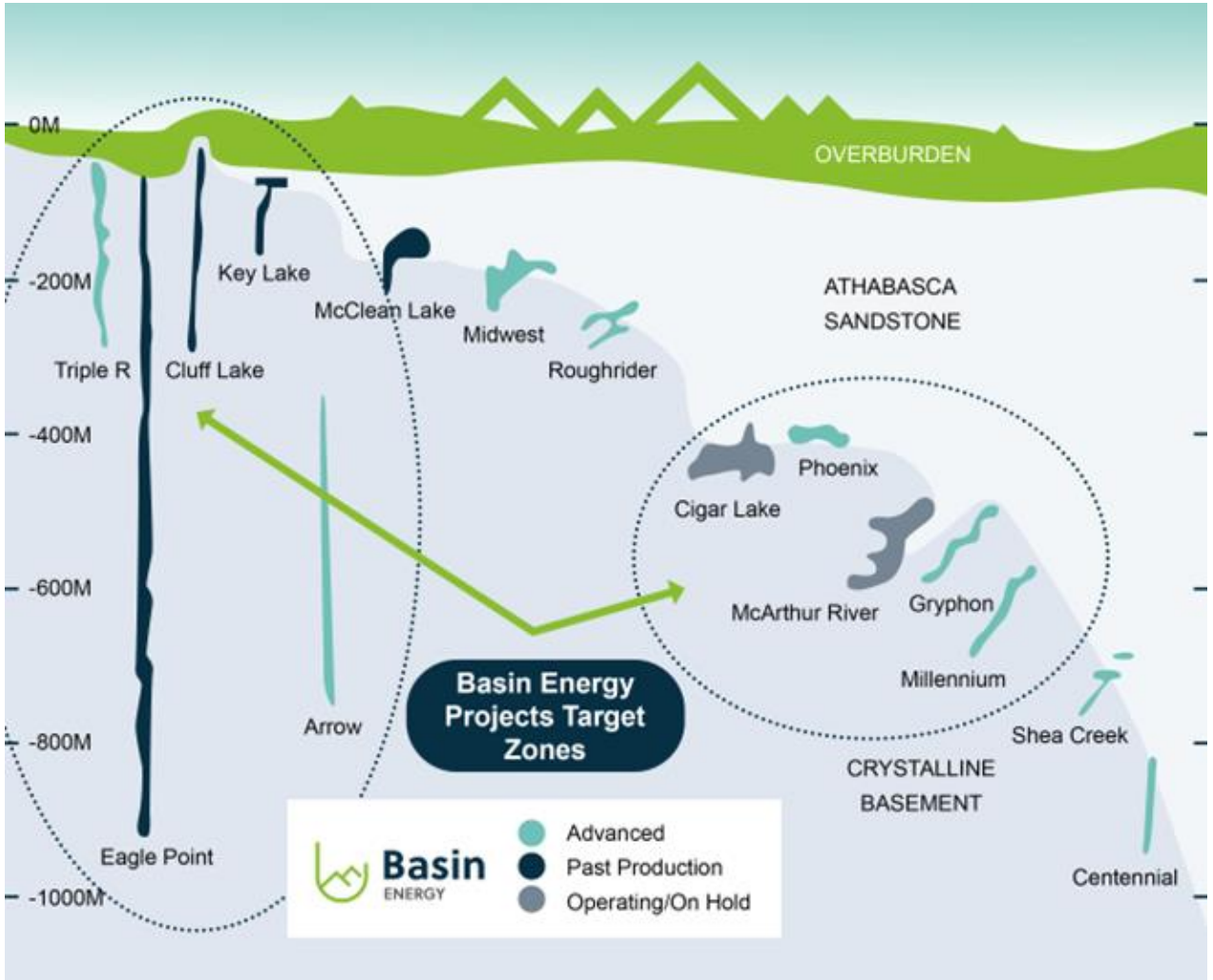
Exploring for Athabasca Basin uranium

Exploring for Athabasca uranium style mineralisation, with basement hosted *(Arrow style)* and unconformity hosted targets *(McArthur River style)*

Basin's projects share the same fundamentals;
Geological settings *(lithology, structure)*
Evidence of metals *(uranium, pathfinders)*
Explorable pathway *(depth, targets)*

Strategically located near world-class high-grade uranium discoveries, mining and processing operations with a constant uranium mining industry for 65 years

Experienced team – relevant uranium exploration and development track record, with joint venture partner providing invaluable project specific local knowledge



Data in diagram derived from
1. *IAEA Technical document 1857, Unconformity-related uranium deposits*
2. *Sources: World Nuclear Performance Report 2021, World Nuclear Association, September 2021; The Nuclear Fuel Report Global Scenarios for Demand and Supply Availability 2021-2040, World Nuclear Association April 2022*

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Previous Work at Geikie

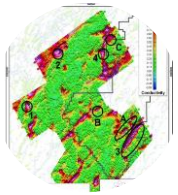
Data in diagram derived from

1. *ASX release, BSN, Basin Energy Prospectus, 30/09/2022*
2. *ASX Release, BSN, Maiden Geophysical Survey Defines Multiple Targets at Geikie, 14/10/*
3. *ASX Release, BSN, Airborne Electromagnetic Survey Completed At Geikie, 22/03/2023*
4. *ASX Release, BSN, Intersects Uranium Mineralisation up to 0.27% at Geikie, 20/09/2023*
5. *ASX Release, BSN, Gravity Survey Identifies Significant Anomalies at Geikie, 15/11/2023*
6. *ASX Release, BSN, Drilling at Geikie identifies 1.5km alteration zone typical of basement-h*

Early Works

1967-1980

Airborne magnetic, radiometric, EM. Prospecting, mapping, geochemistry. Mud Lake U-Mo showing and Marina Pb/Zn showing identified, including minor drilling.



Tempest EM Survey

Partial coverage of the Geikie property

2007

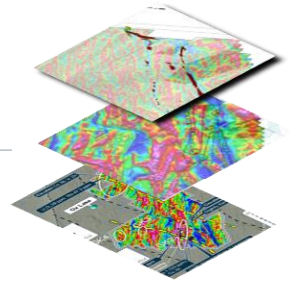
Post 2000's

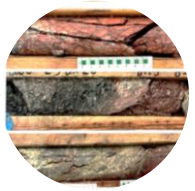
Basin Energy IPO (4/10/22)

High-Resolution Geophysics

2022-2023

Airborne radiometrics identified 4 target areas based on U, Th, K. **Airborne magnetics** highlighted 2 new N-S trending structures. **Airborne VTEM Plus survey** shows 2 major conductive trends and potential AIIP anomalism.





Drilling highlighted **anomalous uranium**, complex structural framework and alteration systems analogous of basement-hosted U deposits.

2023

Uranium Maiden Drill Program (2217 m)

Basin Energy Operator (60% ownership)

Derisking drill targeting with Gravity Gradiometry

2023

Numerous high-priority gravity low anomalies coincident with key magnetic cross-structures.

Large structural and alteration system discovered at Preston South analogous of basement-hosted U deposits.

2024

Phase 2 Drill Program (2294.5m)

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Geikie 2024 Winter Drilling Technical Discussion

May 2024

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2024 Drill Target Rationale

Data in diagram derived from
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2. *ASX Release, BSN, Intersects Uranium Mineralisation up to 0.27% at Geikie, 20/09/2023*
3. *ASX Release, BSN, Gravity Survey Identifies Significant Anomalies at Geikie, 15/11/2023*
4. *ASX Release, BSN, Drilling at Geikie identifies 1.5km alteration zone typical of basement-hosted mineralisation , 28/05/202*

8 drillholes – 2294.5 m
incl. 1 restart and 1 abandoned hole

Hunter North (new prospect) – 1ddh (282 m)

- Gravity low anomaly coincident with NW mag structures.

Aero Lake –2 ddh (609.5 m)

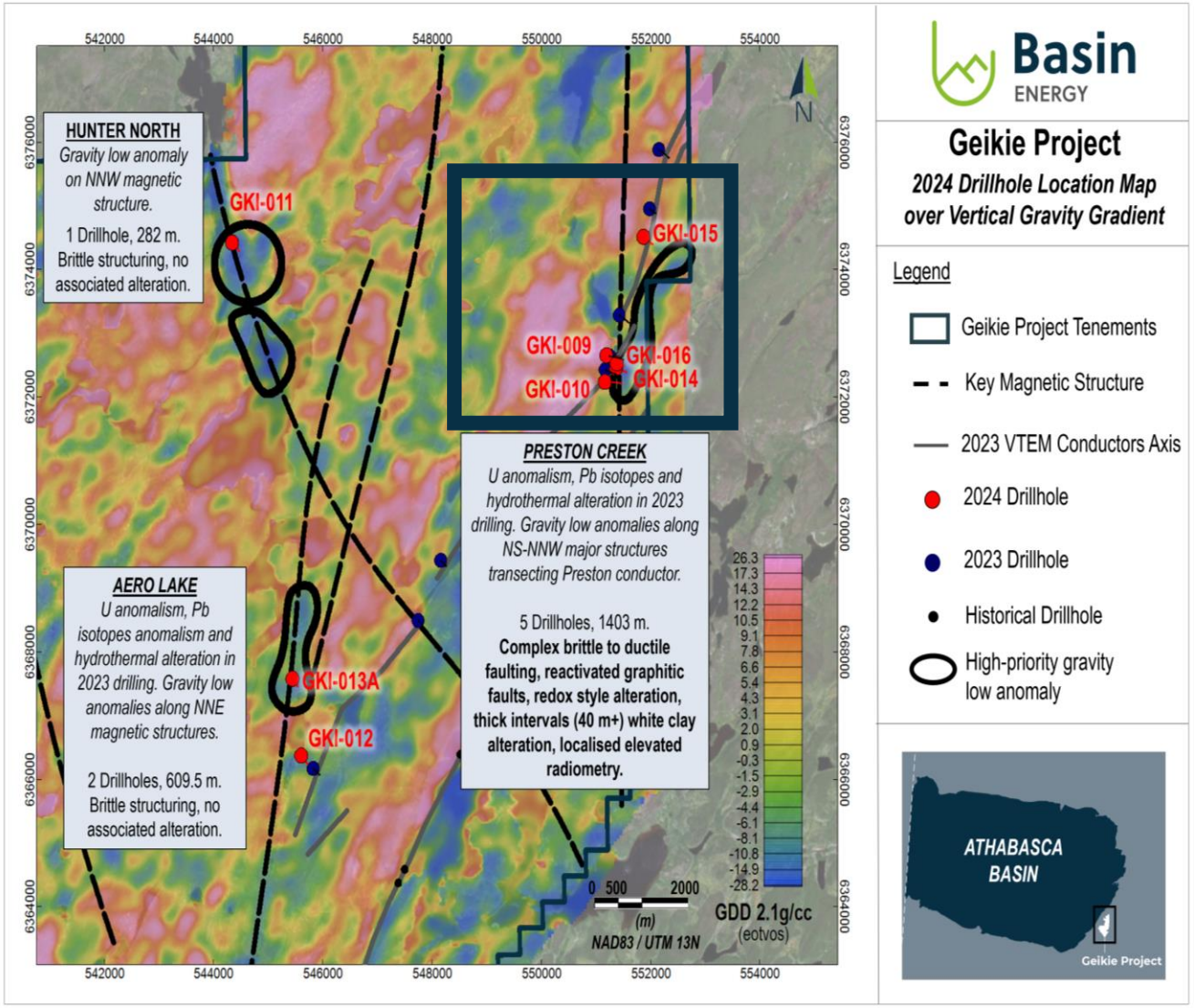
- Follow-up on 2023 drilling results (alteration, structure, localised anomalous U and Pb isotopes). 0.27% U3O8 over 0.5 m.
- “Pearl string” gravity low coincident with NS and NW mag structures.

Preston Creek – 5 ddh (1403 m)

- Follow-up on 2023 drilling results at South Preston (Fe-rich alteration front, structures, localised anomalous U and Pb isotopes ratios).
- Wide gravity low anomaly east of 2023 ddh.

~~*Johnson Lake (new prospect) – up to 2 ddh*~~

Cancelled. Inappropriate ice and lake bottom conditions.



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Preston Creek – Oxidised Fluids

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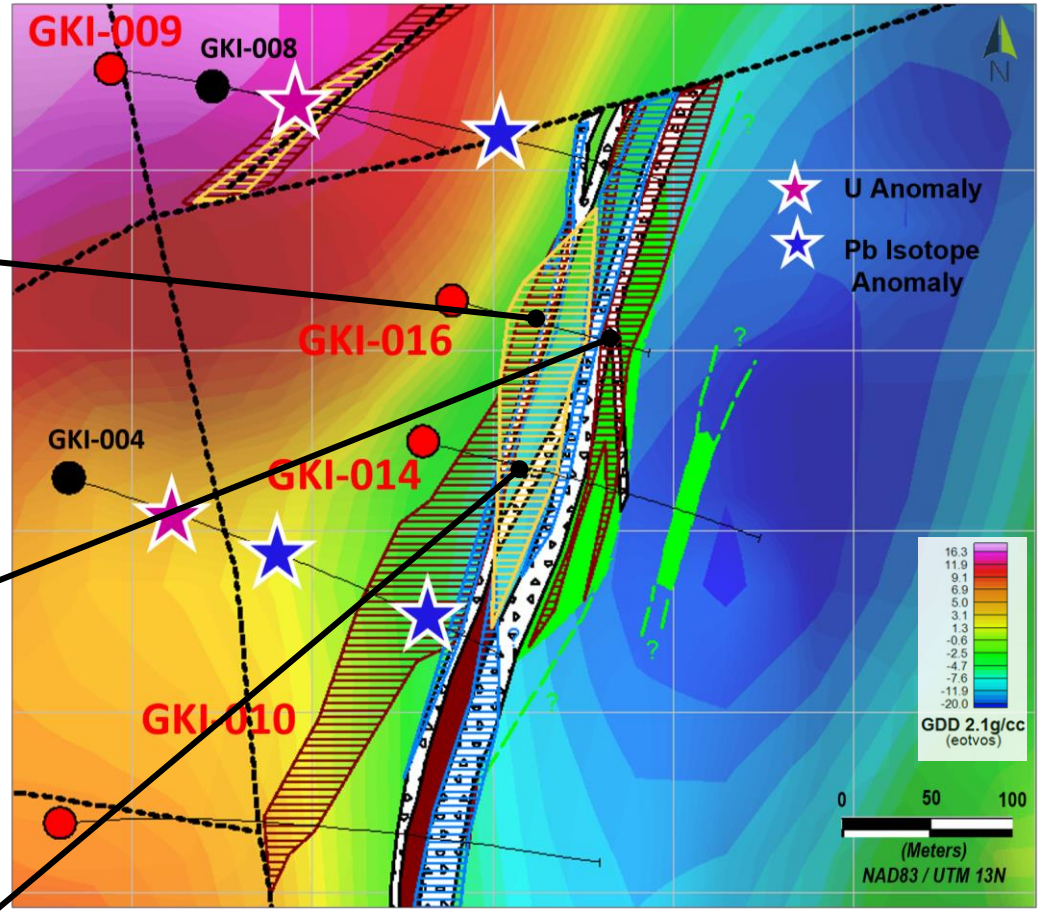
Oxidised fluid circulation in all ddh at Preston South



2024 drillhole
2023 drillhole

STRUCTURES

Breccia/Cataclasite
Fault - undefined

ALTERATION

Pervasive argillisation
Pervasive hematisation
Spotty hematisation
Spotty limonitisation
Pervasive silicification

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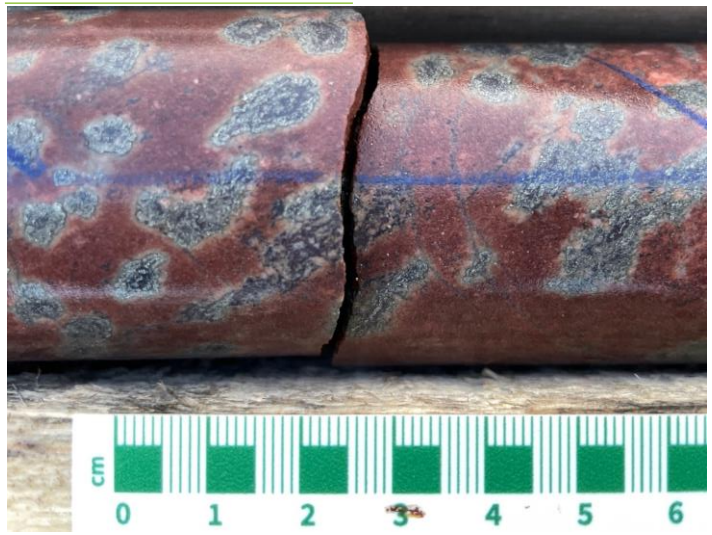

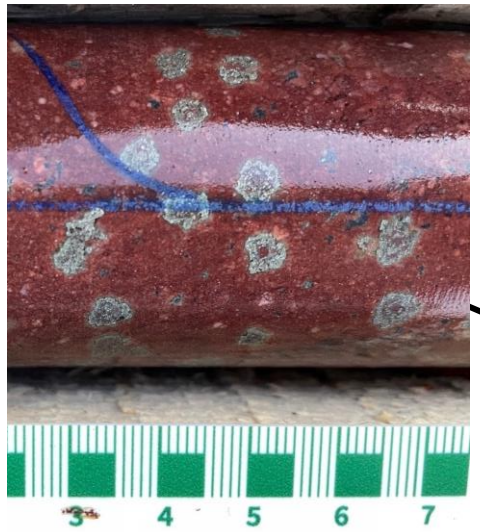

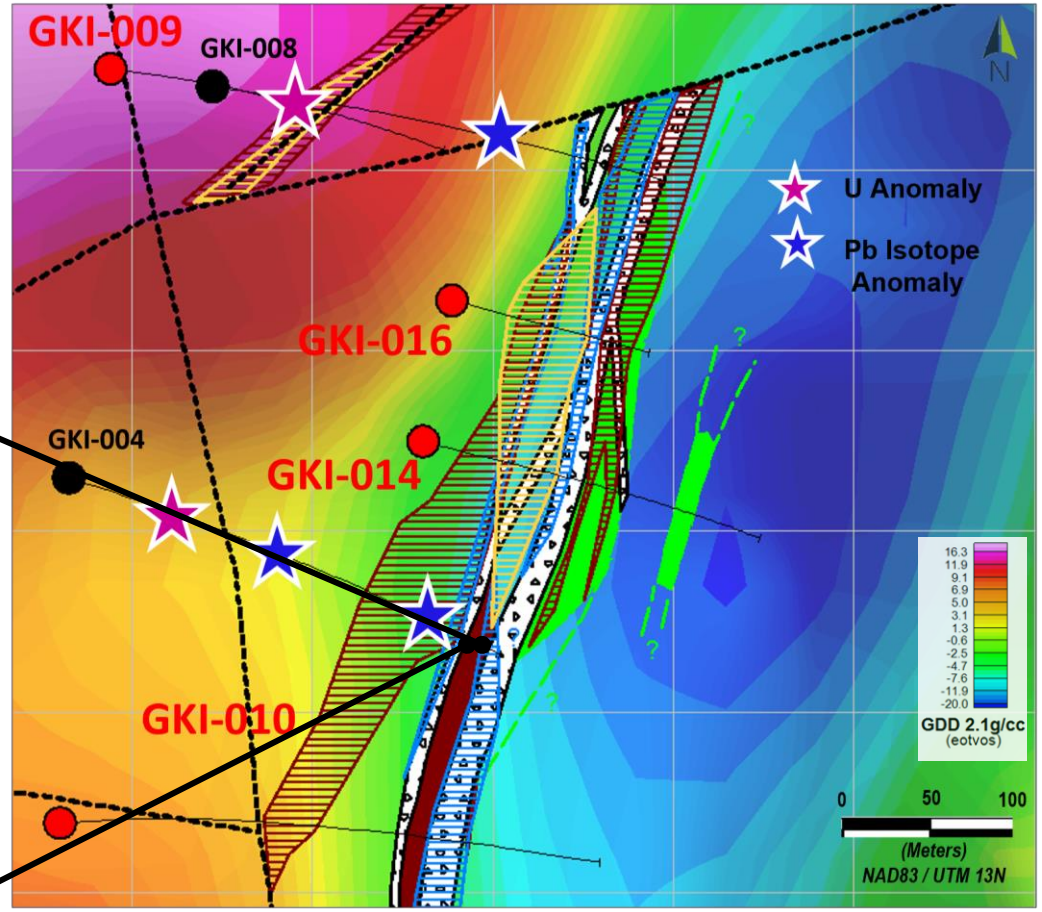

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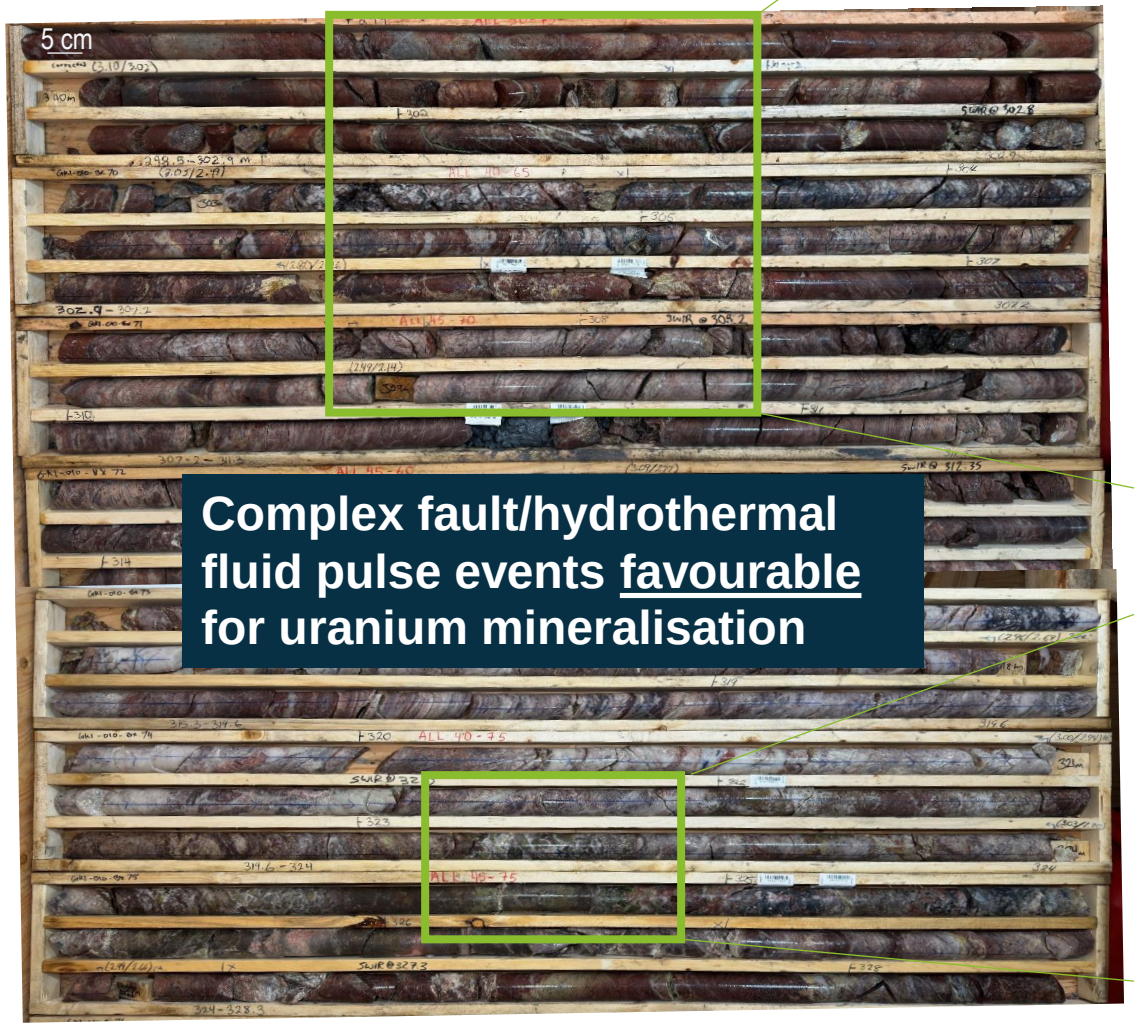
Data in slide derived from

1. *ASX Release, BSN, Drilling at Geikie identifies 1.5km alteration zone typical of basement-hosted mineralisation , 28/05/2024*

Preston Creek – Oxidised faults

GKI-010 – EOH 438.6 m

- Broad quartz-hematite breccia/cataclasite



Complex fault/hydrothermal fluid pulse events <u>favourable</u> for uranium mineralisation

Preston Creek

Oxidoreduction front?

Data in diagram derived from

1. *ASX Release, BSN, Maiden Geophysical Survey Defines Multiple Targets at Geikie, 14/10/2022*
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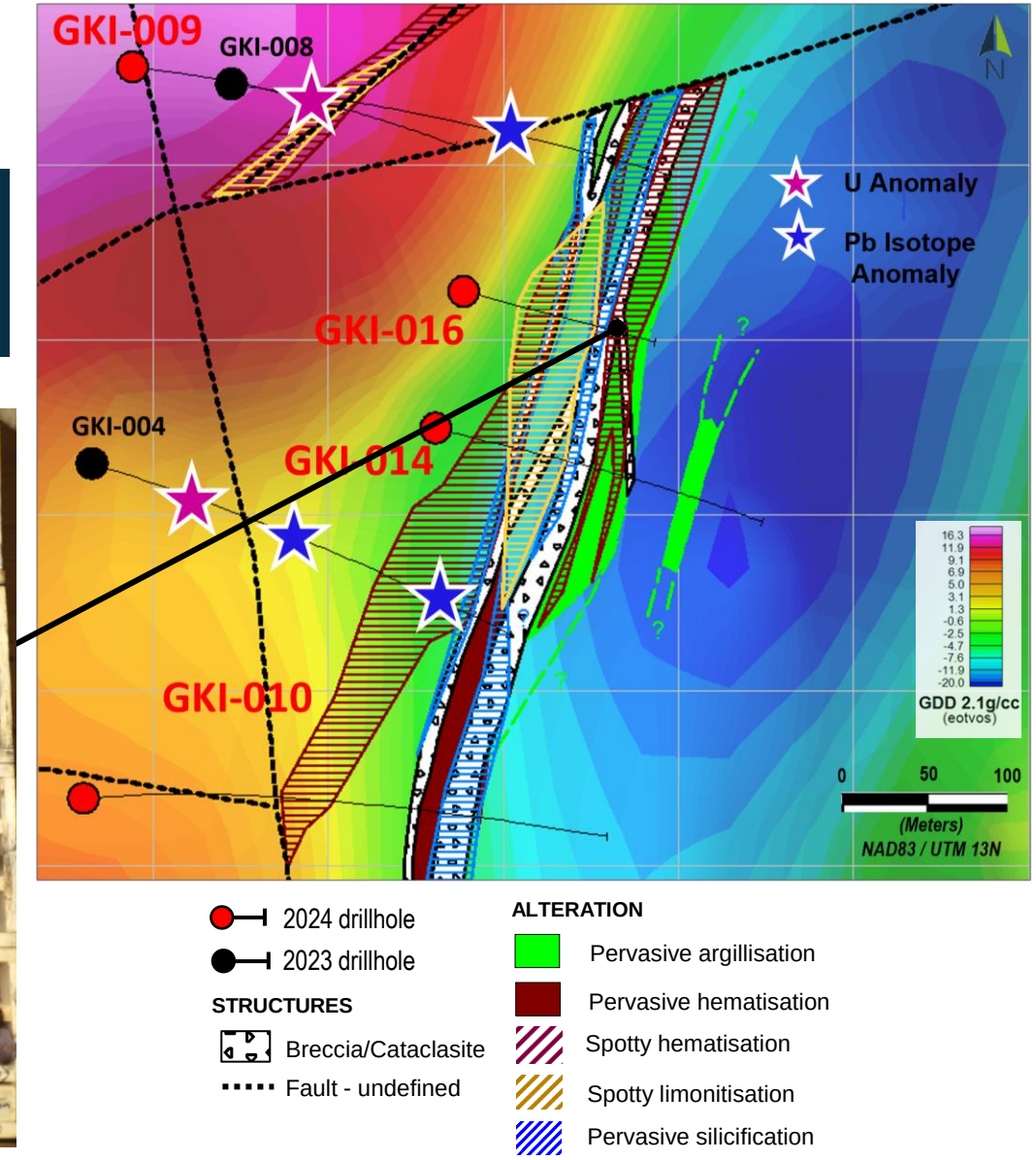
GKI-016 – EOH 168 m

- Complex relationship between fault activity and alteration events

All the key ingredients to uranium precipitation are in this photo!



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Preston Creek –Pervasive argillisation (GKI-014)

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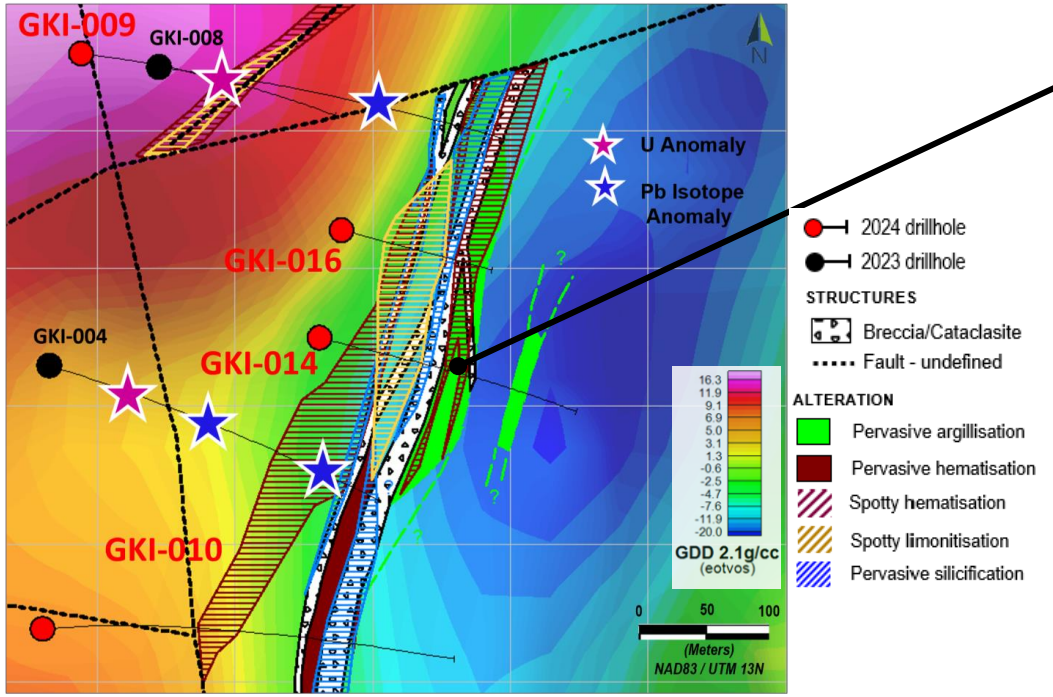
GKI-014

Thick pervasive argillisation (+/- loc. hematite) at **footwall of main breccia/cataclasite**:

- 143-187.5m
- 227.7-231.3m
- 235-241.5 m



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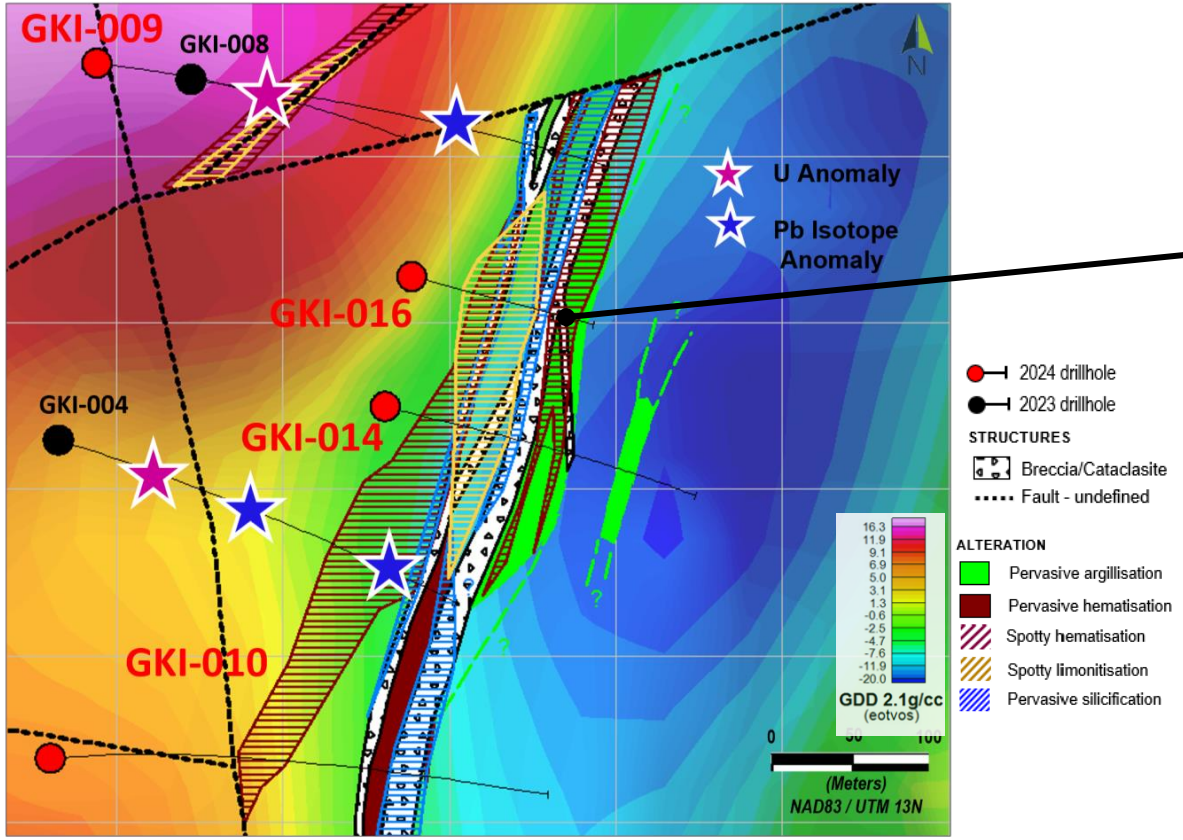
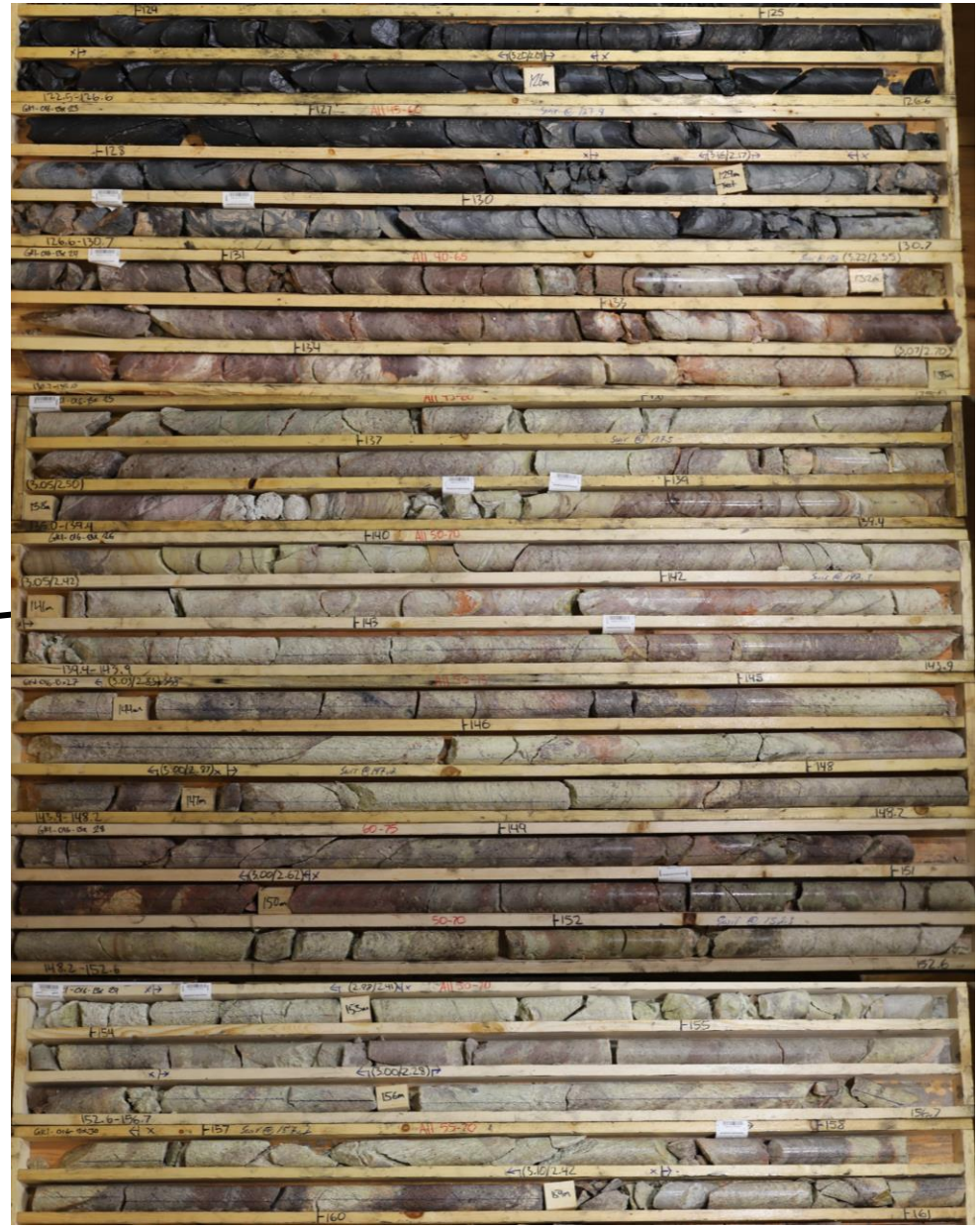
GKI-016

Pervasive argillisation and mottled hematisation at **footwall of main breccia/cataclasite**:

- 131-163m





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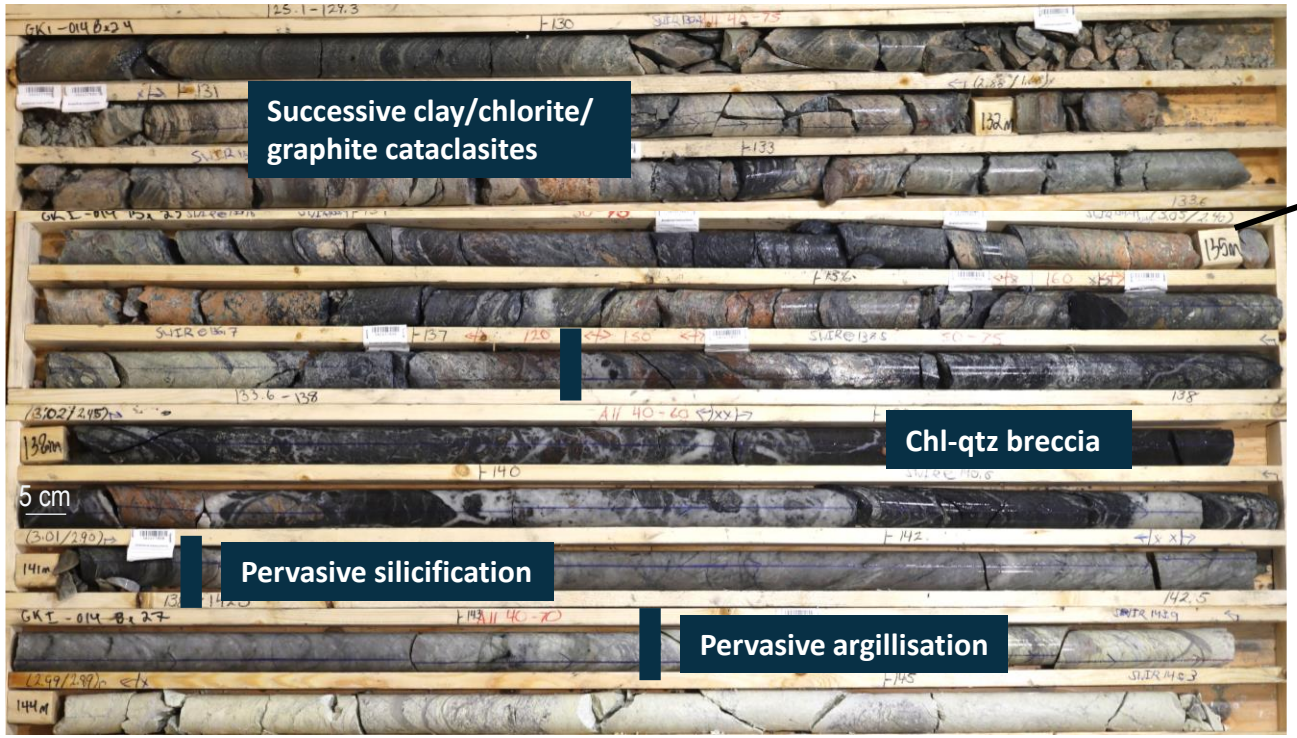
Preston Creek

Pervasive silicification halo

GKI-014 – EOH 303 m

- Quartz-chlorite breccia. Silica-pyrite protobreccia. Silica-rich interval.



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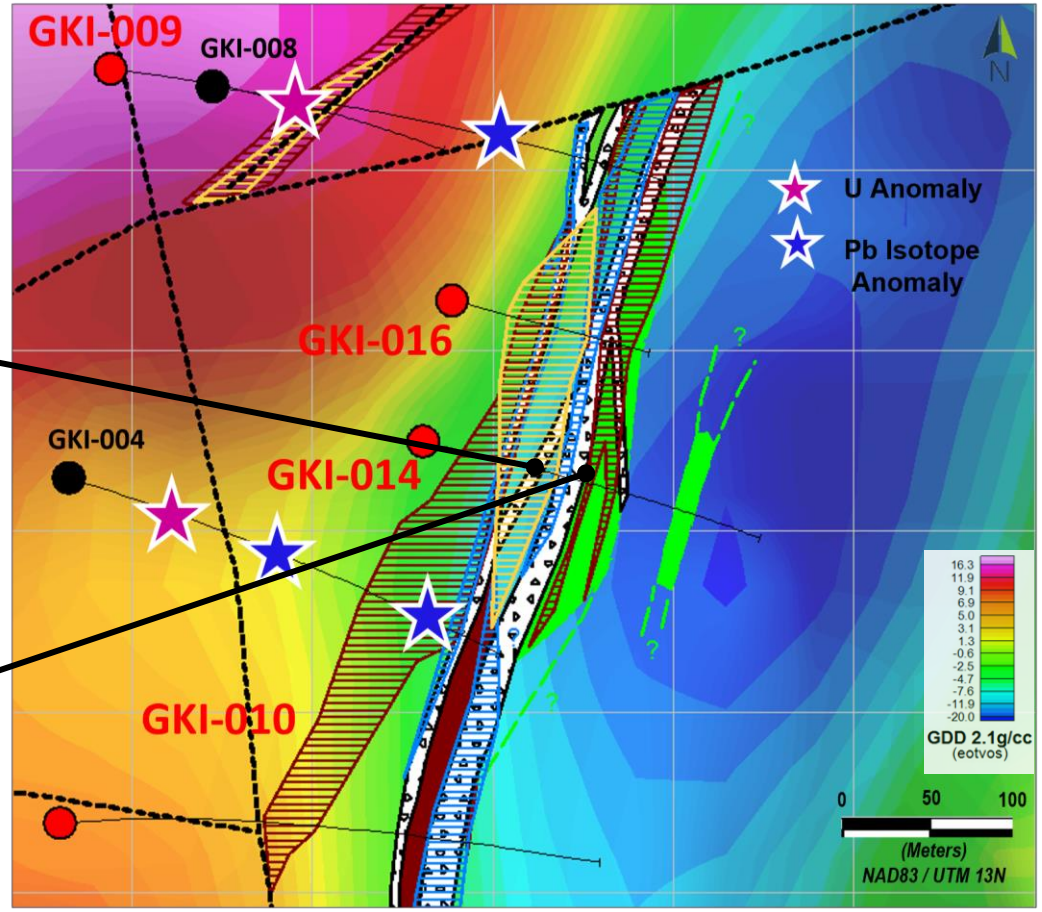

2024 drillhole
2023 drillhole

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Preston Creek – Fault-related, non-granitic anomalous radiometry in GKI-009

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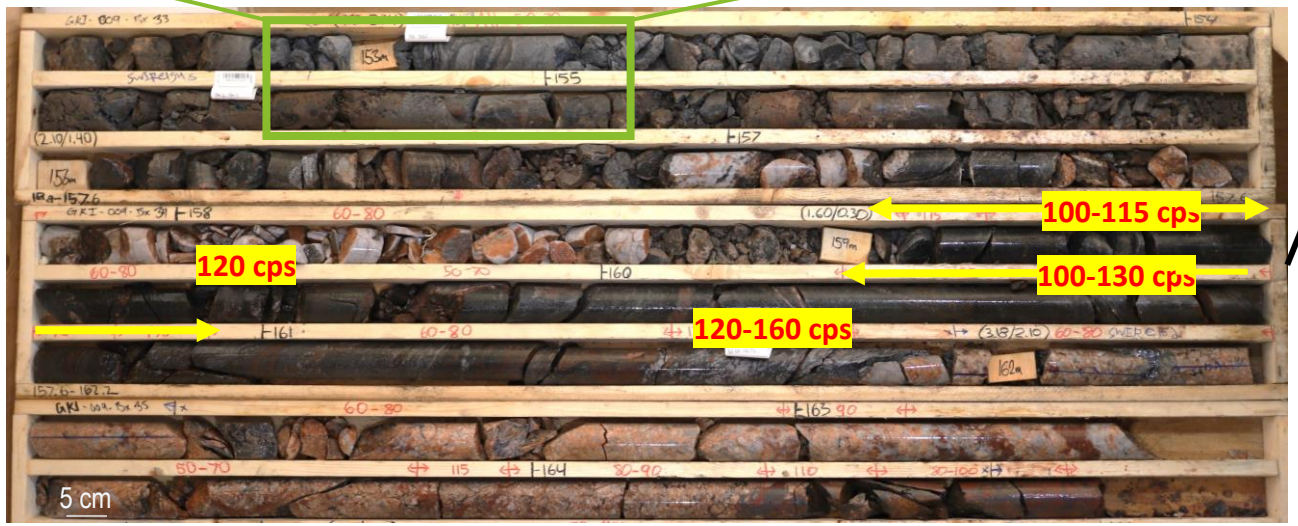
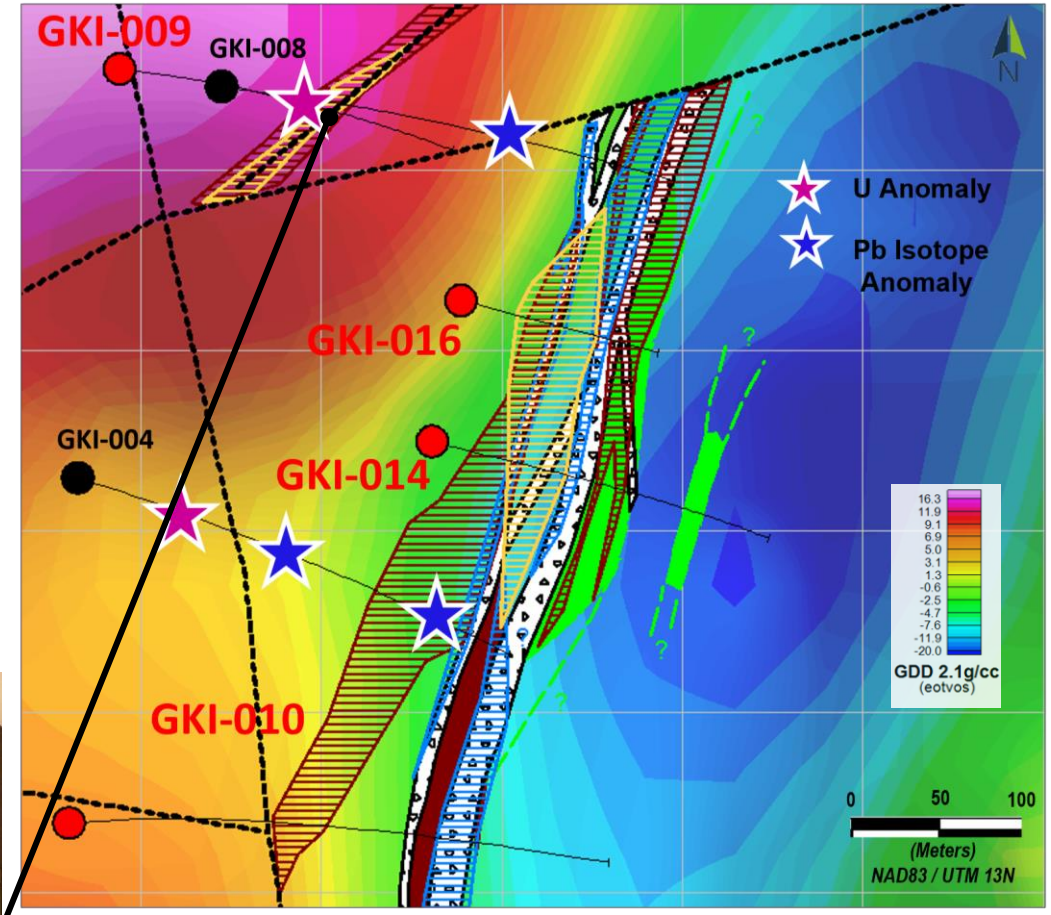
GKI-009 – EOH 264 m

- Elevated radiometry noted **in fault footwall exhibiting mottled hydrothermal hematite + chlorite alteration**





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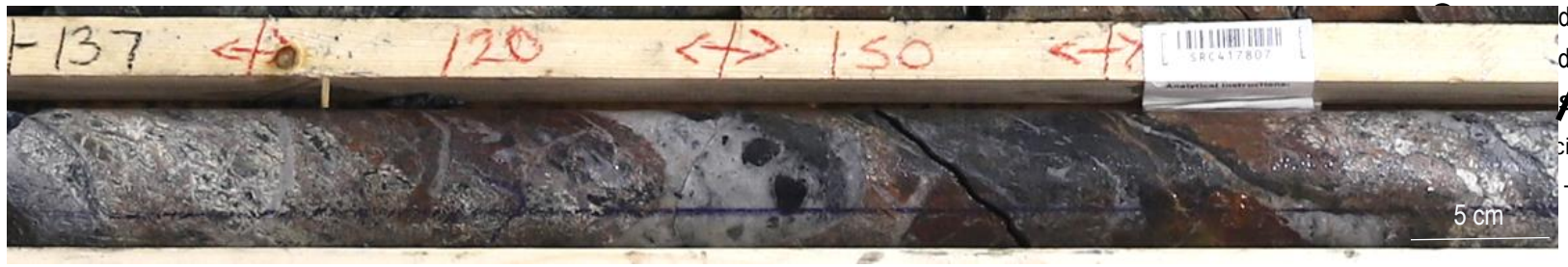
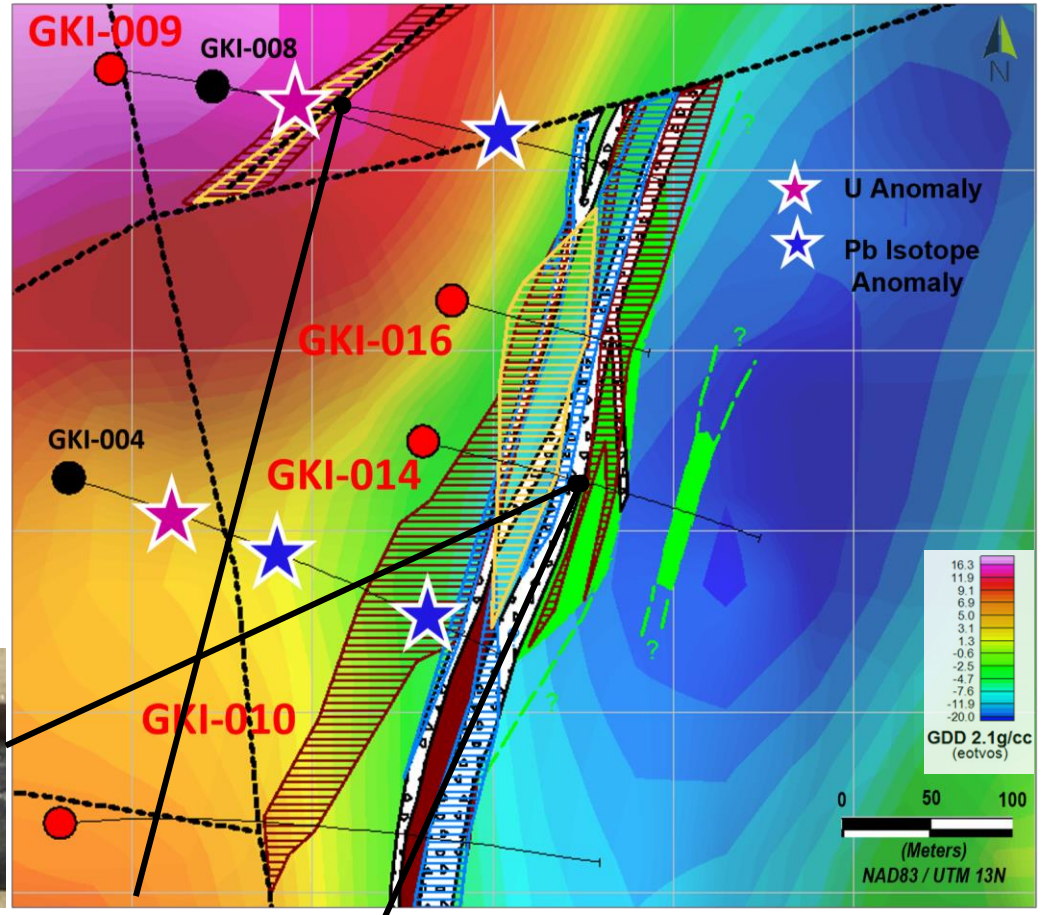
GKI-014 – EOH 303 m

- Main breccia/cataclasite: **structure-related elevated radiometry at contact between quartz breccia and argillised/graphitic/chloritic breccia/cataclasite** (reactivated, fluid circulation: white clay, remobilised graphite, brick red hematite)





drillhole
drillhole
s
cia/Cataclasite
- undefined

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- Spotty limonitisation
- Pervasive silicification

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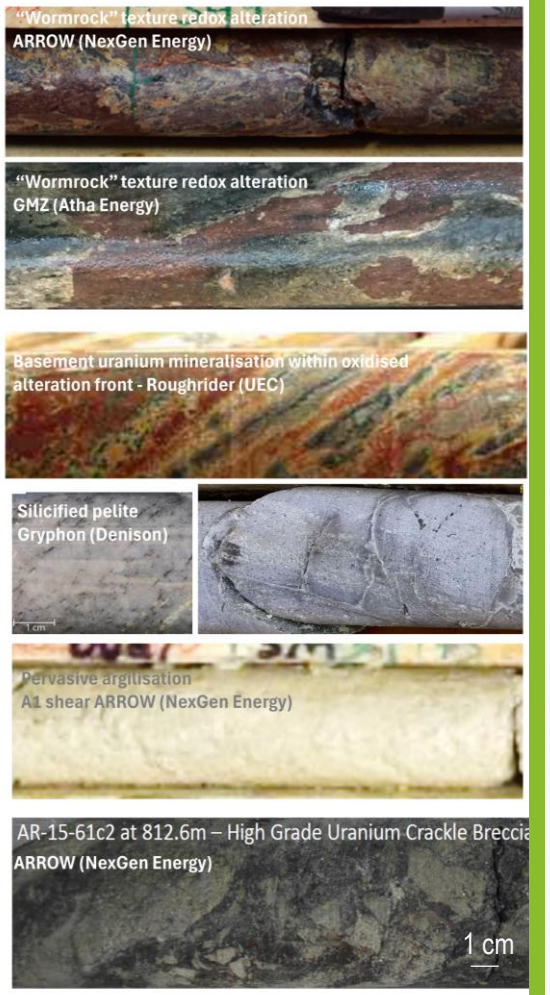
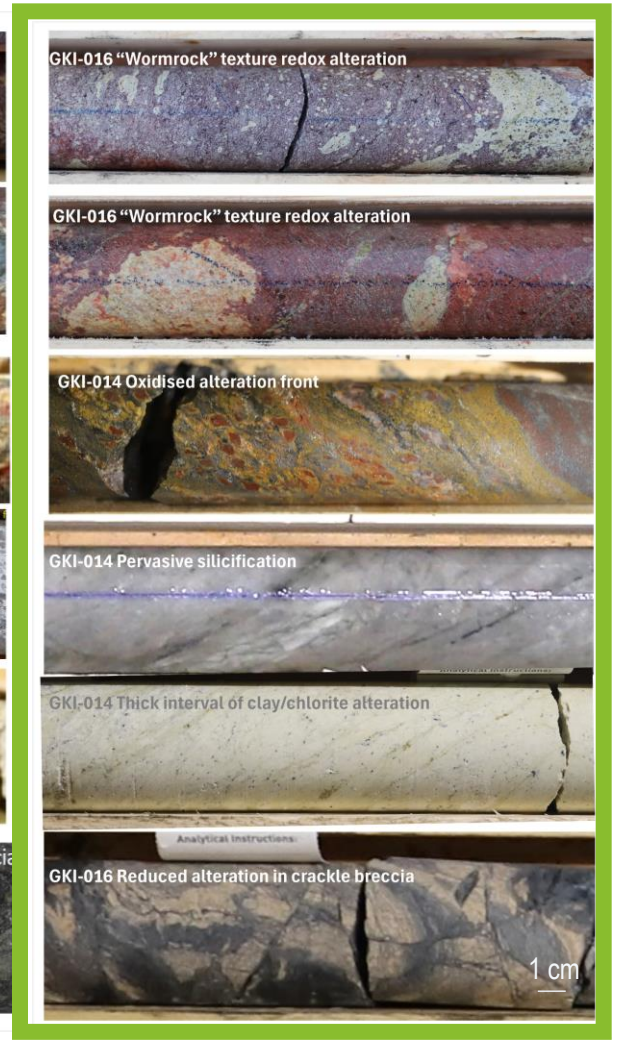
Alteration analogy with basement-hosted mineralisation





6 drillholes, 1931.6 m

Incl. GKI-016 abandoned at 168m

		Preston South
GEOPHYSICAL ANOMALISM	*Key Magnetic Structures*	✓ NS, NNW
	Graphitic Conductor	✓ Weak-strong EM response ✓ Structural disruption: bends, splays in conductor trace
	Gravity Low Anomalies	✓ Several wide gravity low anomalies
FLUID PATHWAYS	*Host rock permeability*	✗ Minimal original permeability
	Brittle Faulting	✓ Complex structural framework ✓ Several stages brittle reactivation overprinting early brittle-ductile structures
	Rheology Contrast	✓ Evidence of fluid circulation along metasediment/granite contact
ALTERATION ASSEMBLAGES	*Hydrothermal Alteration*	✓ Silica rich fluids (sil,Qtz vng/bx) ✓ Wide oxidized front (hem/py/mgt) ✓ Wide argillised zones
	Reducing Agents	✓ Graphite, Sulfides ✓ Biotite-rich gneiss.
GEOCHEM.	*Uranium Anomalism*	✓ U-Th rich granites ✗ **No ore grade mineralisation** *(2024 Geochem pending)*
	Geochem. Pathfinders	✓ Anomalous Pb isotopes ratios

Data in diagram derived from
ASX Release, BSN, Drilling at Geikie identifies 1.5km alteration zone typical of basement-hosted mineralisation , 28/05/2024
Photos in diagram on the right derived from:

- NexGen Energy Ltd, November 2016, Arrow: The Basin's largest Undeveloped Deposit, Presentation at Saskatchewan Geological Open House.
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High-priority drilling areas

Data in diagram derived from

1. *ASX Release, BSN, Maiden Geophysical Survey Defines Multiple Targets at Geikie, 14/10/2022*
2. *ASX Release, BSN, Airborne Electromagnetic Survey Completed At Geikie, 22/03/2023*
3. *ASX Release, BSN, Intersects Uranium Mineralisation up to 0.27% at Geikie, 20/09/2023*
4. *ASX Release, BSN, Gravity Survey Identifies Significant Anomalies at Geikie, 15/11/2023*
5. *ASX Release, BSN, Drilling at Geikie identifies 1.5km alteration zone typical of basement-hosted mineralisation , 28/05/202*

Preston Creek Prospect

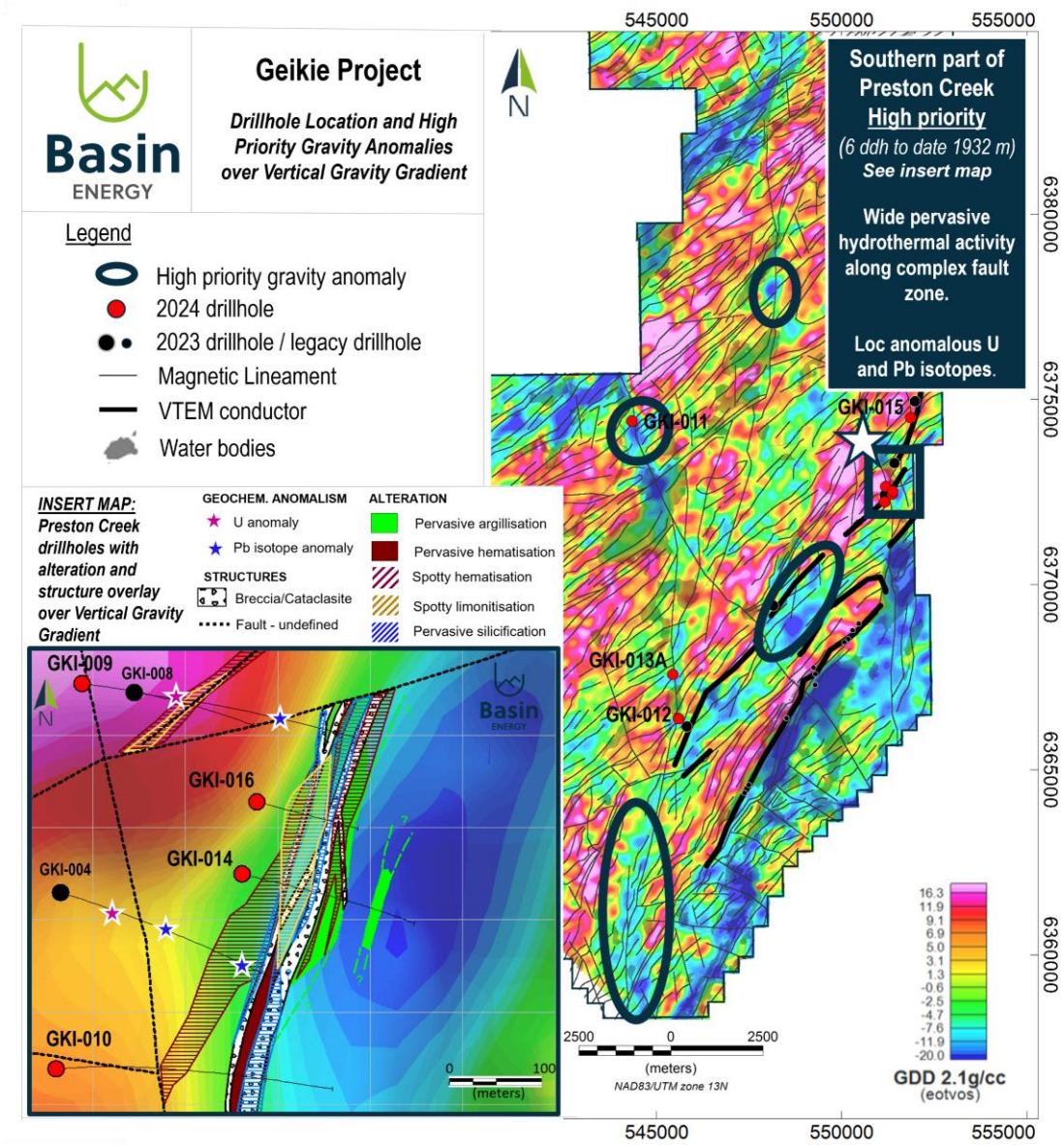
- ***Preston South***:
  - **Drilling at Preston Creek demonstrated the scale and intensity of alteration and structure typical of basement U deposits**: where is the U precipitating in this system?
  - continue drill testing the Preston South gravity anomaly to the NE
- Test other gravity anomalism to the NE, in conjunction with EM picks and mag anomalism

Hunter North

- 1-2 ddh to continue testing the gravity low anomaly coincident with NS-NW mag fault.

Other Areas

- Isolated or “pearl string” gravity low anomalies identified coincident with key regional structures and/or VTEM anomalies



Further derisk drill targeting

Data in diagram derived from

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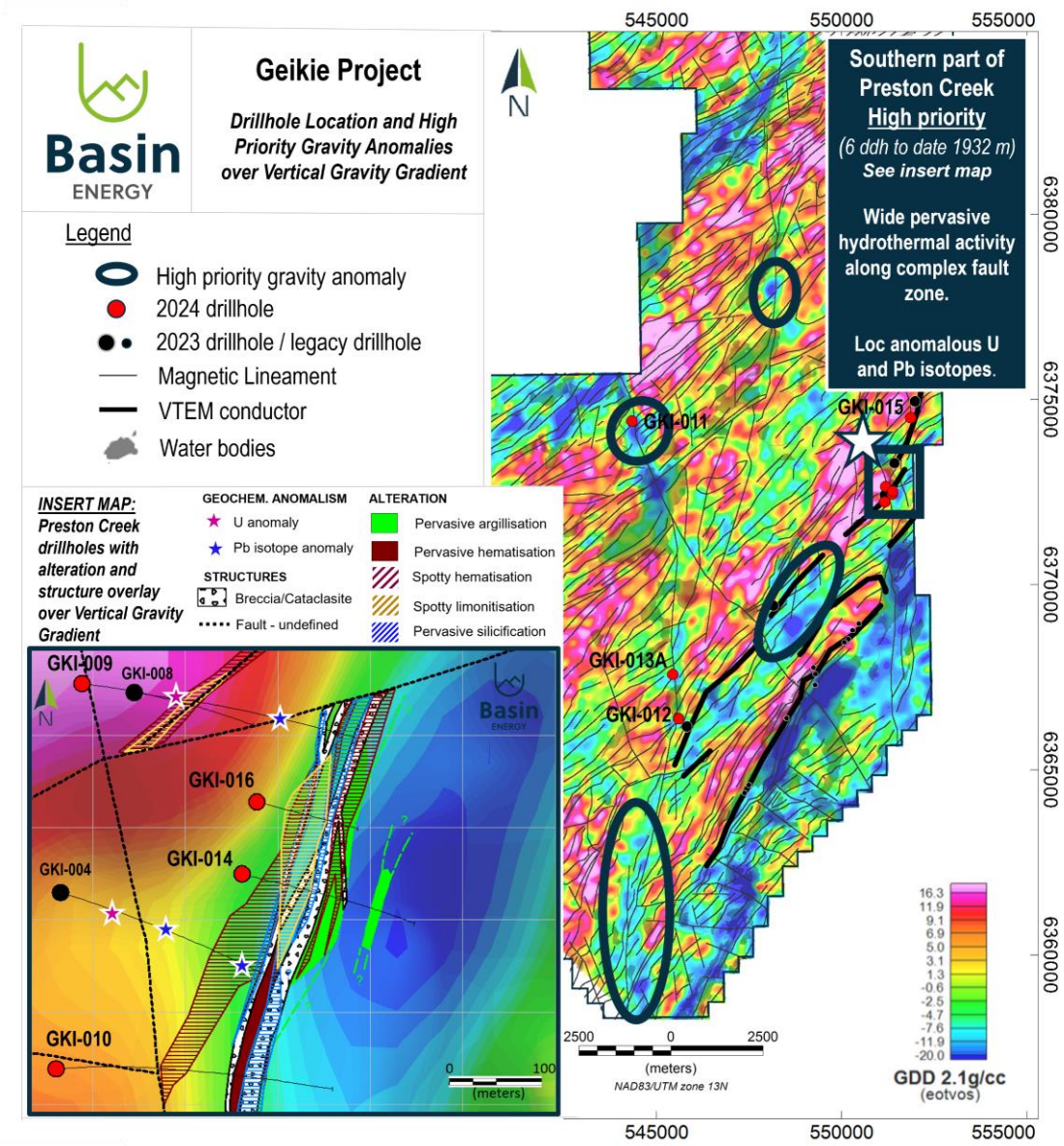
Gravity proving successful at Preston Creek, however regional drilling has produced mixed results elsewhere

- Regional drilling of gravity lows appears to be corelated to thick glacial cover (up to 70 m)
- How can we further derisk gravity data as a refined targeting tool?

Further constrain current gravity models

- 77 density samples collected this winter from 2023/2024 ddh for petrophysical analysis (esp. density)
- Density measurements coupled with the 2024 drillhole data will further constrain gravity models, particularly in areas of thick glacial coverage
- GKI-014 & GKI-016: ~50 m vertical depth of glacial till and 40+ m pervasive clay alteration.

→ *Core density analysis may refine the actual gravity model to solely reflect basement alteration at Preston.*



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ASX: BSN

2024 Exploration Next Steps

May 2024

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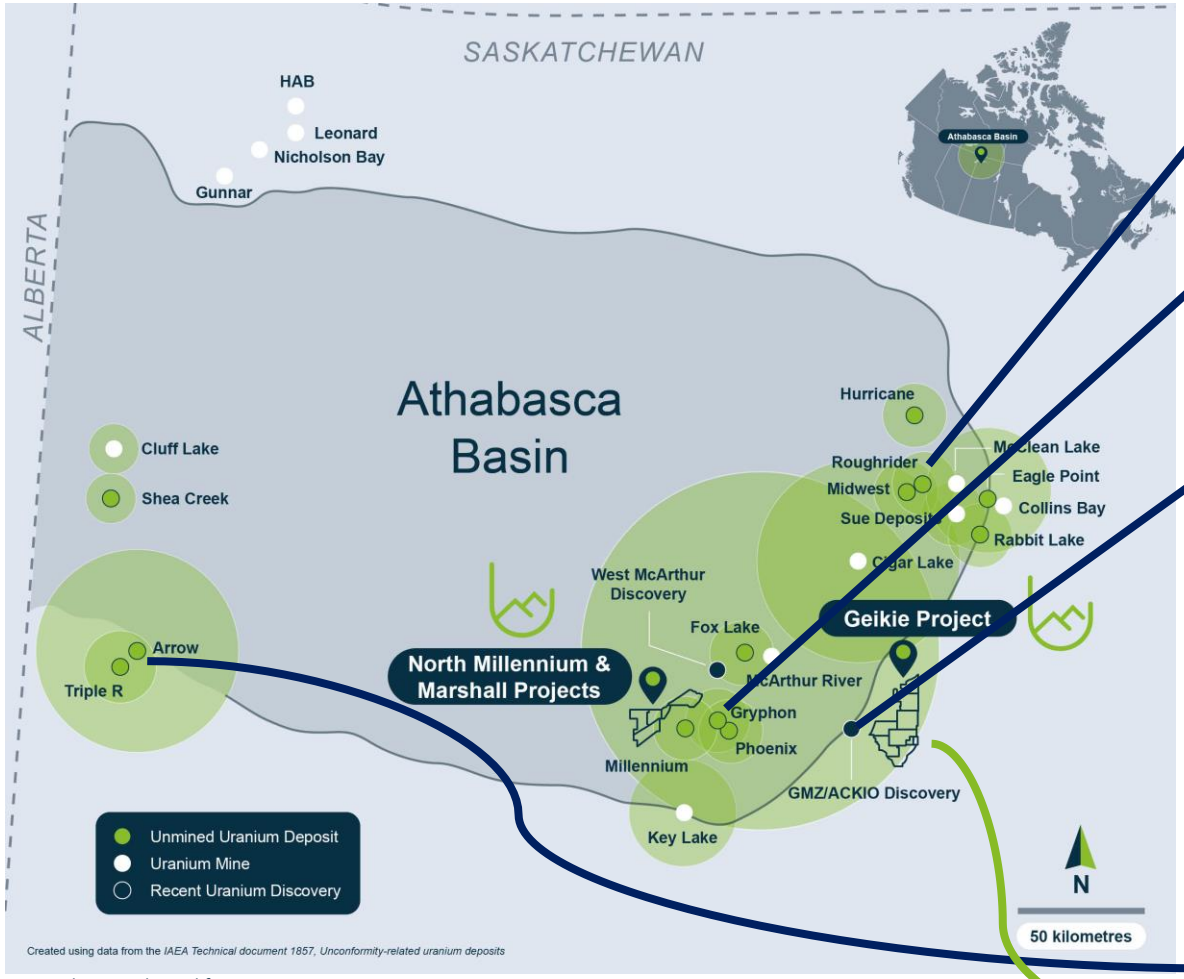
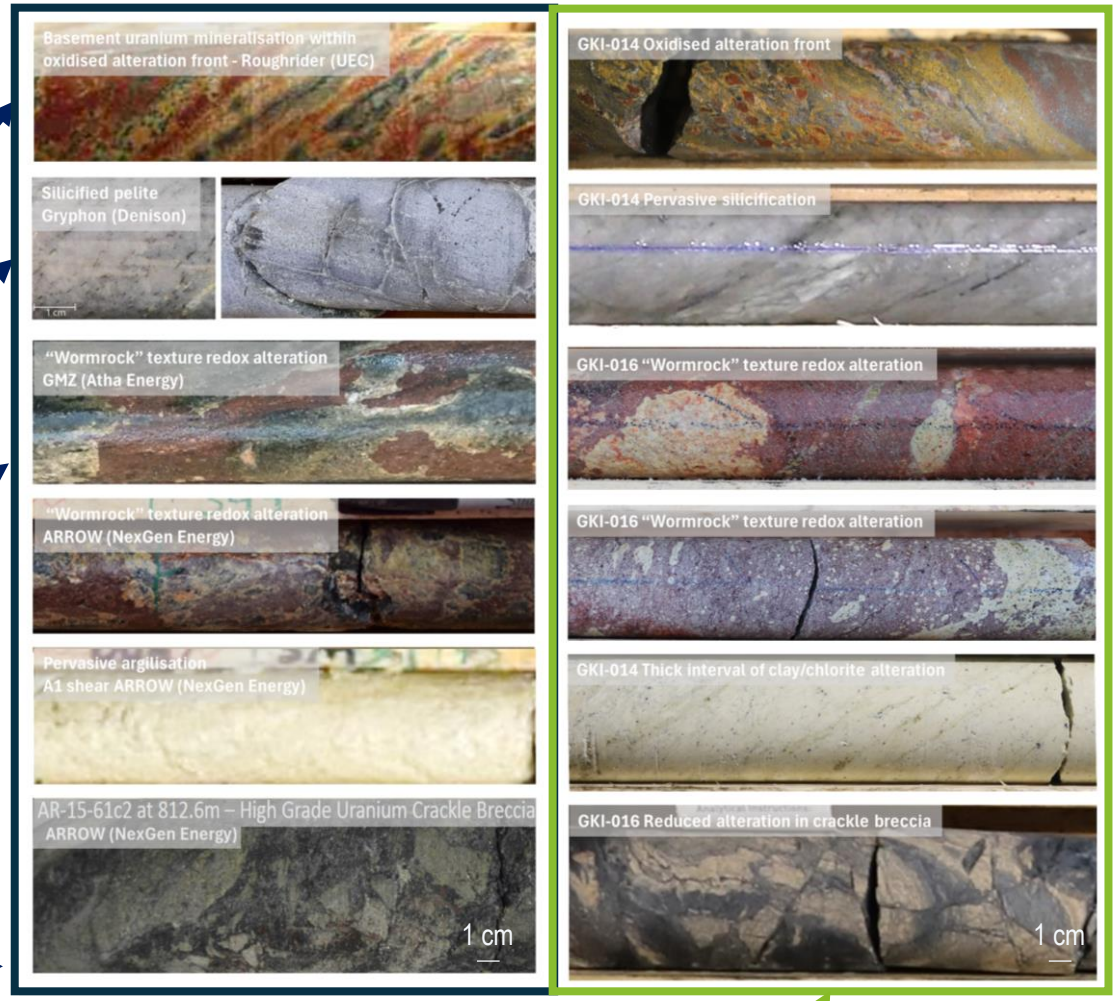
Is Preston South still a high-priority drilling area?





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What to expect next

- 2024 results from ground EM survey at Marshall
- 2024 results from ground EM at North Millennium
- Geochemistry from Geikie drilling
- Geophysical constraining of gravity data using 2024 drilling results from Geikie
- Next phases of 2024 summer field work

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Summary

- Basin has identified a system at Geikie showing the hallmark signatures of known Athabasca uranium mineralisation
- Basin holds two additional projects that are located in the heartland of uranium production, for which ground geophysics results are imminent
- Basin remains funded for further field work
- Basin has a Board and Team with direct uranium exploration experience on all uranium deposit styles

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This presentation has been authorised for release by the Basin Energy Board