



**The Kraken Pegmatite Swarm
A Lithium Discovery in Southwestern Newfoundland
2022 Mineral Resources Review
CIM Prospector Short Course - Prospecting for Critical Minerals**



Golden Hope Joint Venture – Kraken Lithium Discovery

A 50/50 Joint Venture between Sokoman Minerals Corp. and Benton Resources Inc.



- District-scale property consisting of > 3,200 claims (800 sq kms) in SW Newfoundland
- JV controls over 60 kilometers of strike length along key structure – Bay d’Est Fault
- Close to paved roads (14 kms), High voltage substation (10 kilometers), ice-free deepwater port at Burgeo (35 kilometers)
- Significant lithium grades (up to 2.37% Li₂O surface grabs) in pegmatite dikes sampled over a 2 km X 1 km area
- At least 10 in-situ lithium rich dyke occurrences along a 20 km strike length; most not drill tested
- 4,000 m drilled in 24 recon holes - drill intersections include; 8.4 m @0.95% Li₂O; and 20.6m @ 0.60% Li₂O incl. 5.5 m at 1.16% Li₂O
- Soil sampling deemed to be most effective exploration tool along with prospecting



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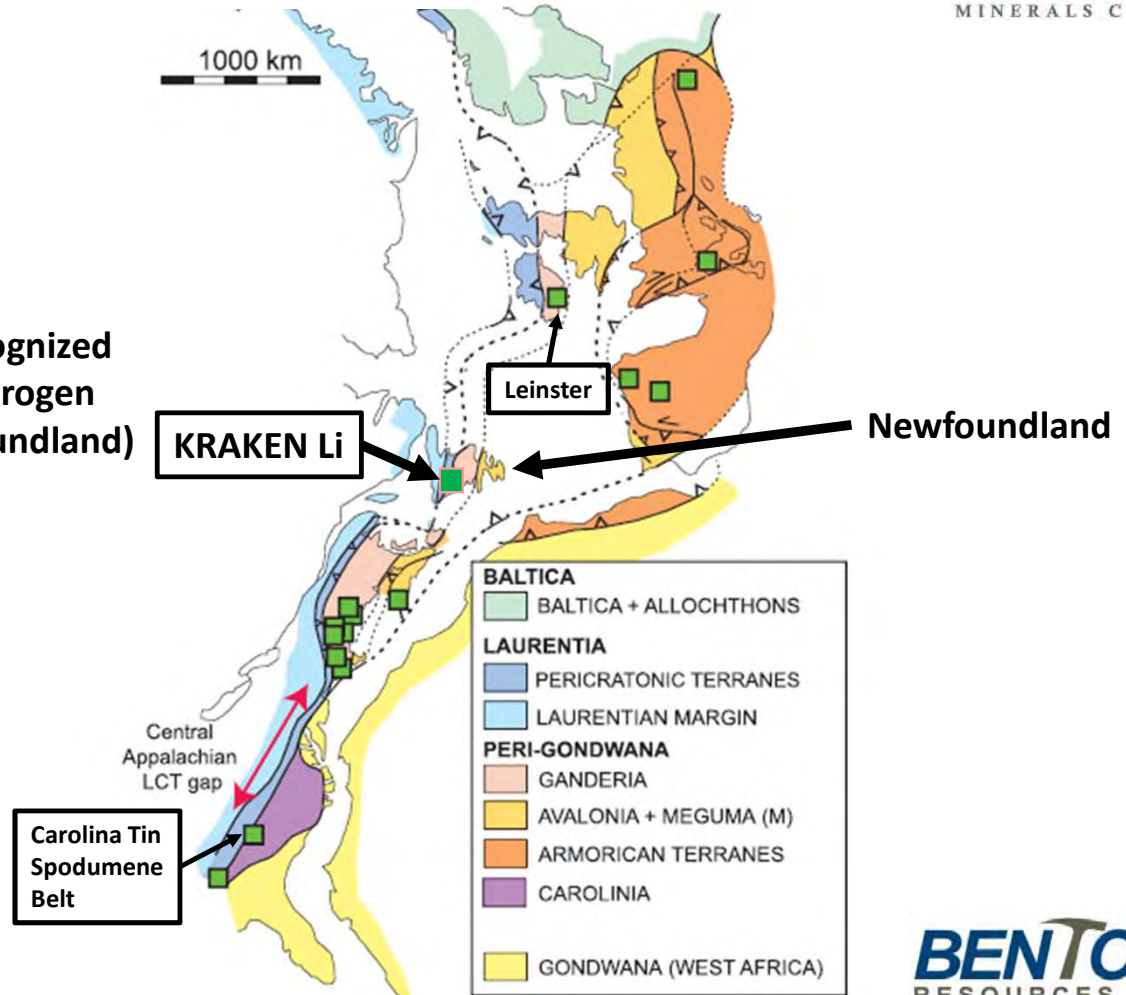
**APPALACHIAN - CALEDONIAN
(and Variscan)
LCT PEGMATITE-HOSTED LITHIUM
in the North Atlantic Borderlands**

The key structural control on lithium districts is recognized along the length of the Appalachian – Caledonian Orogen (Leinster – UK; Piedmont – USA; Kraken – Newfoundland)

Major collisional boundary

Significant Li resources known in the Carolina Tin-Spodumene Belt (Piedmont Lithium); and at Leinster (Ireland)

Promising new discovery in Newfoundland - Kraken



Modified from Bradley 2016 and others

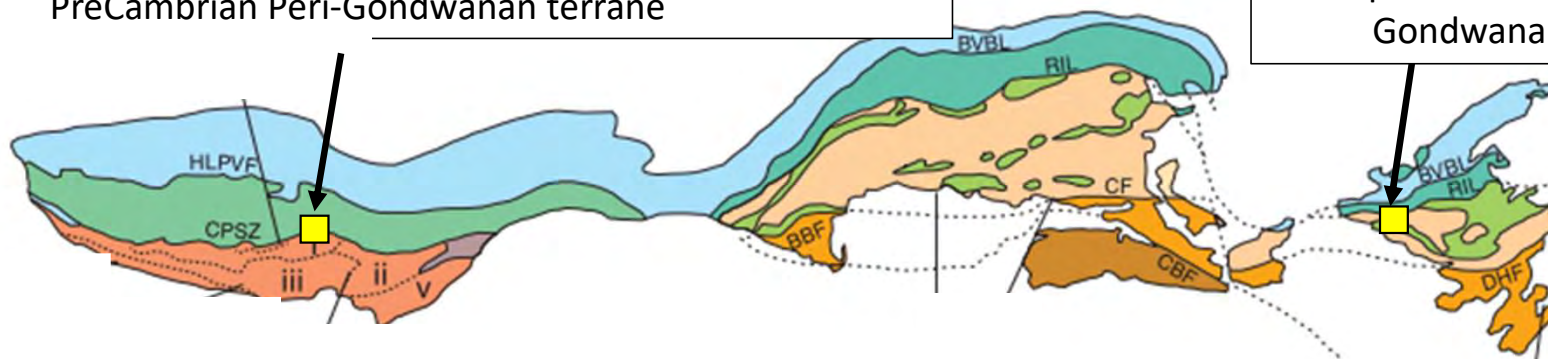




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Carolina Tin Spodumene Belt sited on **Central Piedmont Shear Zone**, in high-grade Silurian basin (Cat Square Basin) at NW edge of a composite PreCambrian Peri-Gondwanan terrane

Kraken sited on **Bay D'Est Shear Zone**, in med-grade Silurian basin (LaPoile) at NW edge of a composite PreCambrian Peri-Gondwanan terrane



Laurentian Realm



Axial Realm



Piedmont/
Goochland



Peri-Laurentia arc/
Peri-Gondwanan arc



Carolina

Peri Gondwanan Realm



Ganderia



Avalonia



Meguma

HLPVF - Hollins Line-Pleasant Valley fault system
CPSZ - Central Piedmont shear zone

BVBL - Baie Verte-Brompton Line
CBF - Chedabucto Fault

DHF - Dover-Hermitage Bay Fault
CF - Caledonia fault

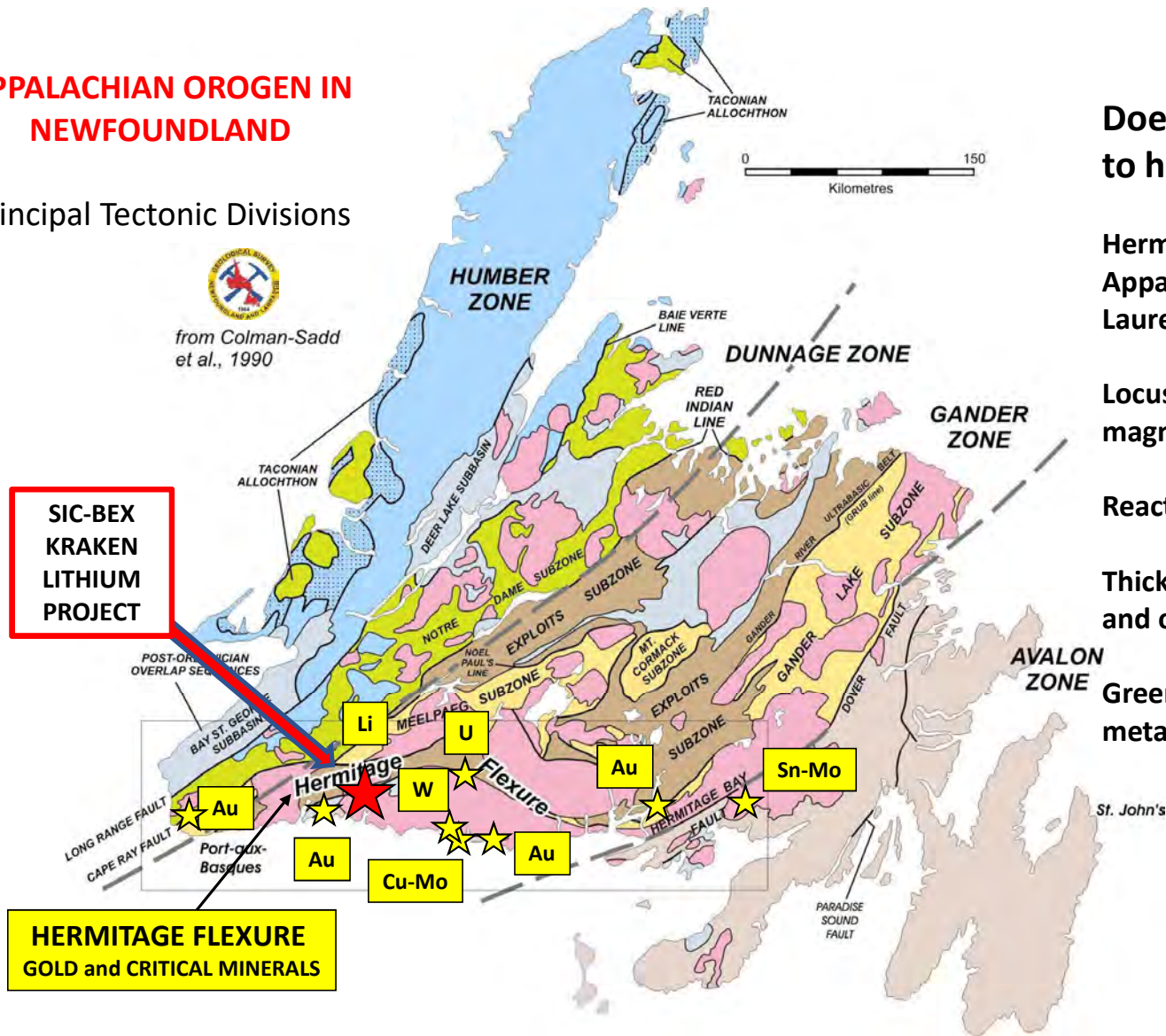
RIL - Red Indian Line
BBF - Bloody Bluff fault

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APPALACHIAN OROGEN IN NEWFOUNDLAND

Principal Tectonic Divisions



Does Newfoundland have potential to host significant lithium deposits?

Hermitage Flexure part of a major Appalachian collision zone between Laurentia and Gondwana

Locus of peak Appalachian Siluro-Devonian magmatism, deformation & metamorphism

Reactivated crustal-scale faults

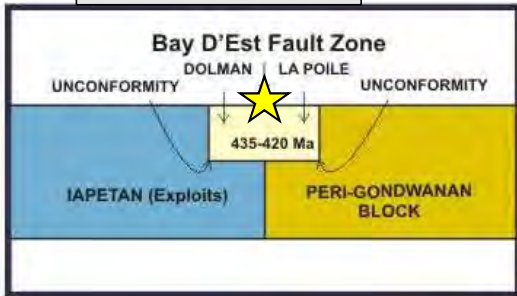
Thick widespread successions of Silurian and older metasedimentary country rocks

Greenschist to upper amphibolite metamorphic rocks

TECTONIC SETTING



Kraken LCT dykes

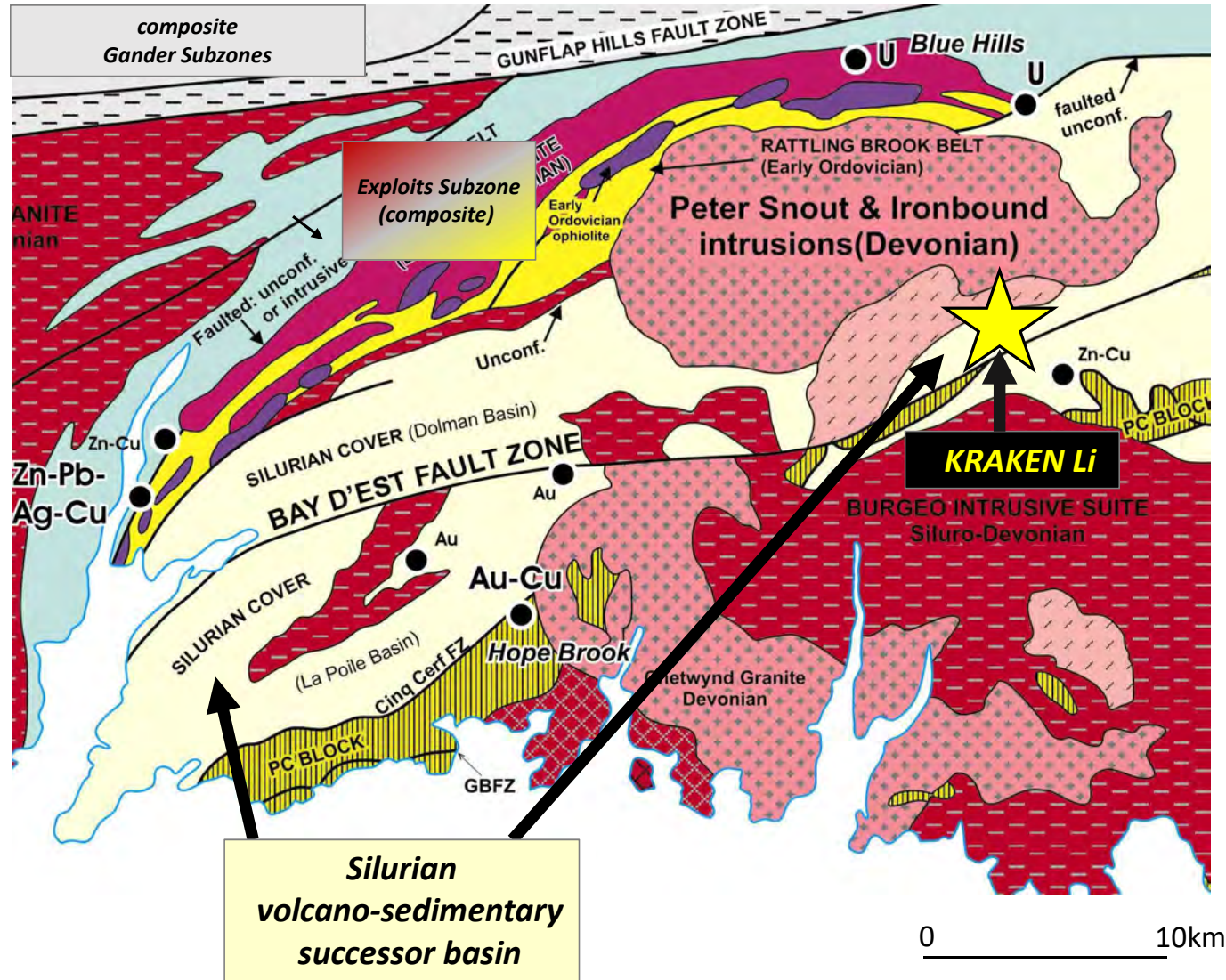


Local Geological Setting

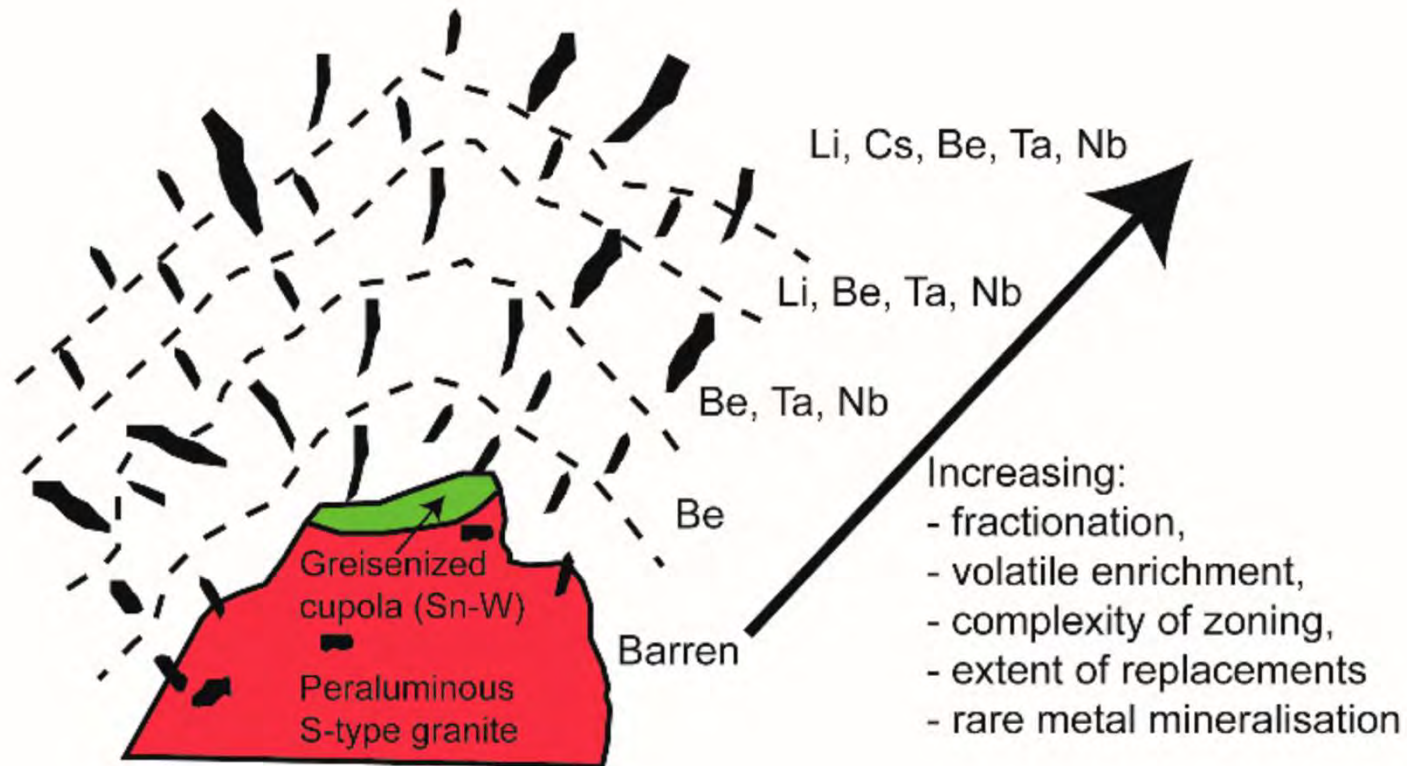
Long lived crustal structure – Bay d'Est Fault

Mica rich metasedimentary host rocks

Abundant granitoids



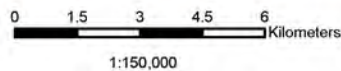
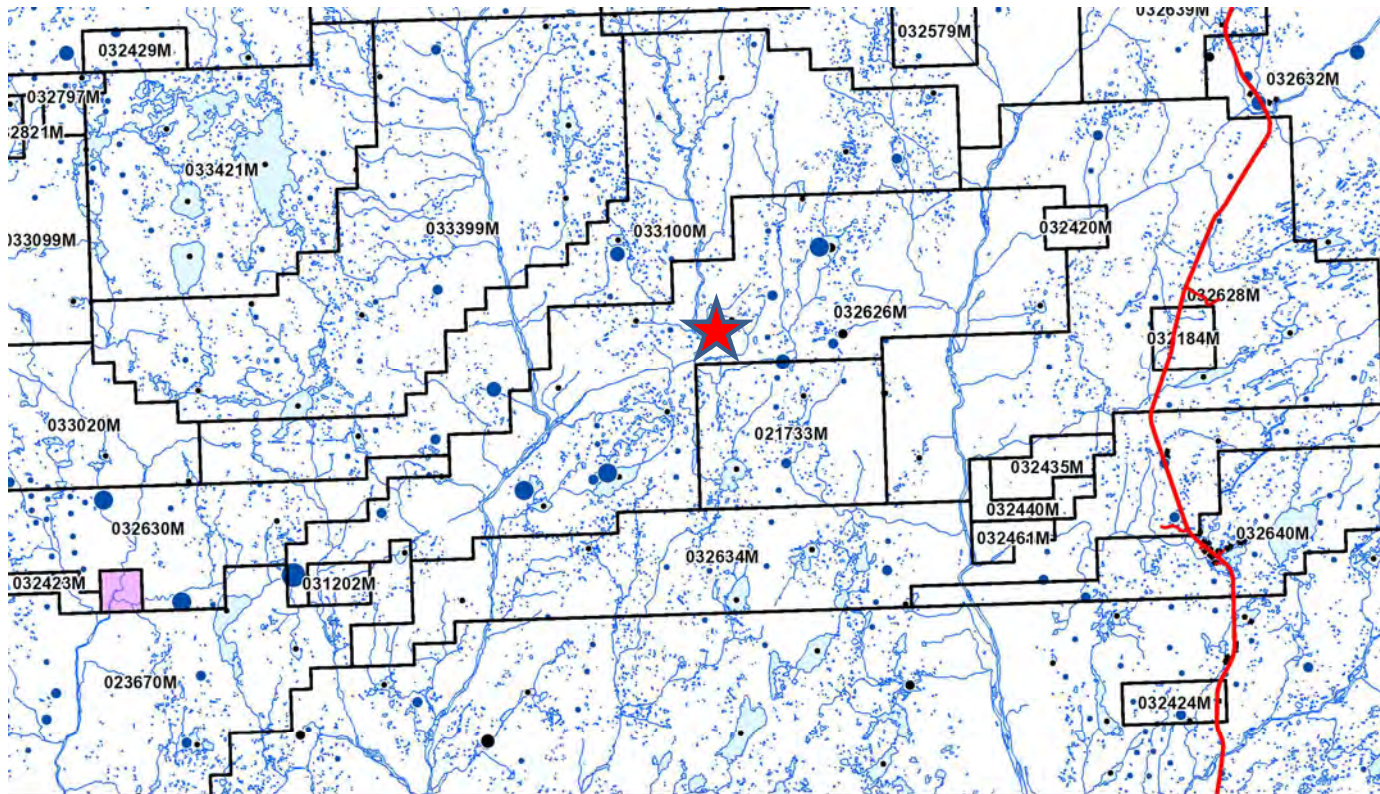
Model for LCT Pegmatites



Selway, J.B.; Breaks, F.W.; Tindle, A.G. 2005

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The tills are hinting at something – Lithium Till Geochemistry (Government)



Map Projection: Transverse Mercator
Central Meridian: 59.5° West
Scale Factor: 0.998
Datum: NAD 27

Date: 4/22/2022
Time: 12:32:26 PM





DDH GH-22-04
Rose Blanche Granite
(Garnet/Muscovite/Biotite)



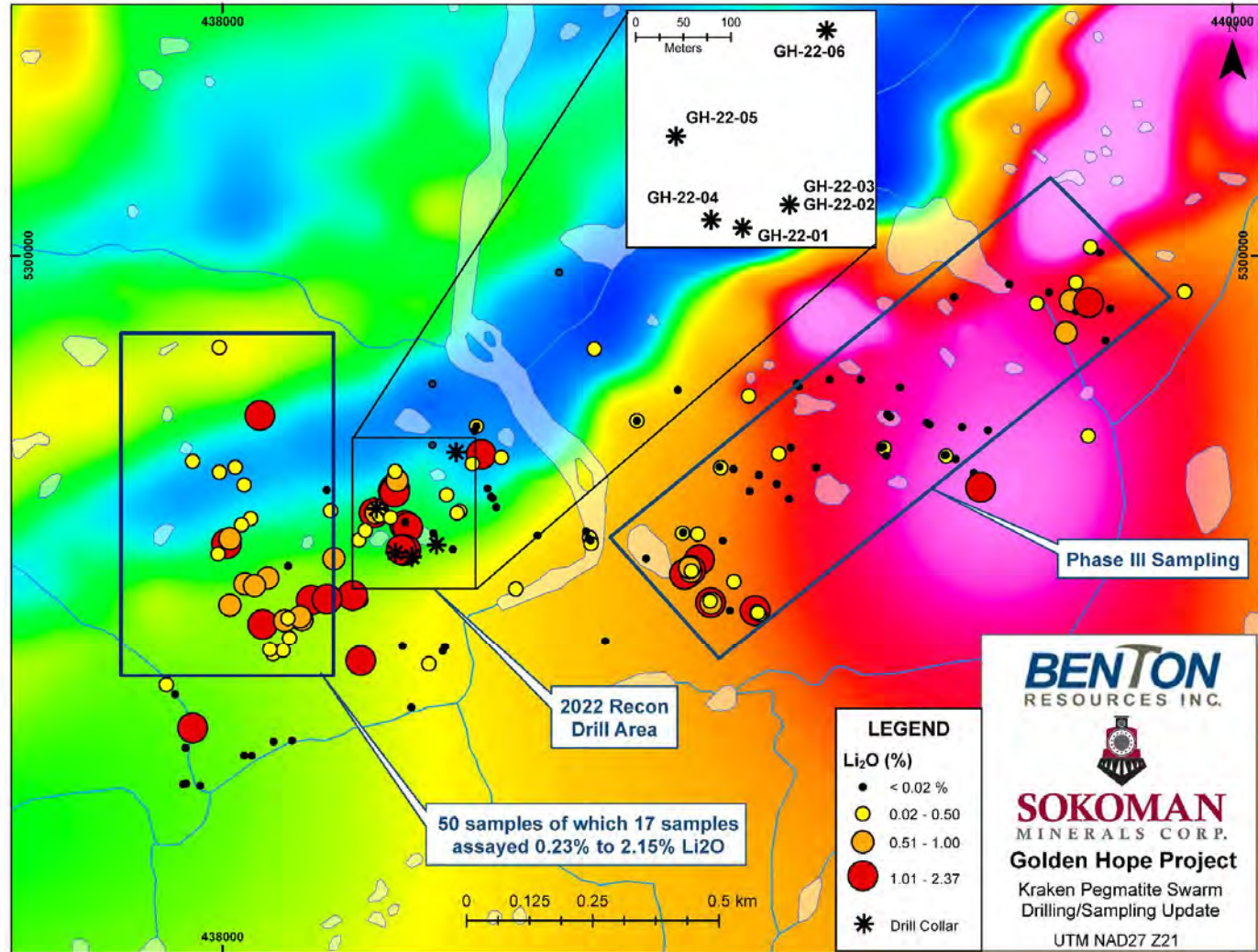


Kraken Lithium Discovery

Surface sampling up to 2.37% Li₂O



Rock Sampling and Phase 1 Diamond Drilling





Tourmaline (Boron) – important regional indicator - Kraken has lots!

Metasedimentary domain lots of mica - host rock for Kraken dikes

Numerous granitic plutons with correct chemistry – possible parent source of fluids?



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Holmquistite – a purple, fibrous, Li bearing mineral found in many Li deposits
(5 m uphole from 8.4 m dyke in GH-22-01)



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Close Spatial Association between tourmaline and Spodumene Dyke





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GH-22-01 drills 8.4m
spodumene rich
pegmatite dyke zone
with up to 1.76% Li₂O;
0.95% Li₂O over 8.4m



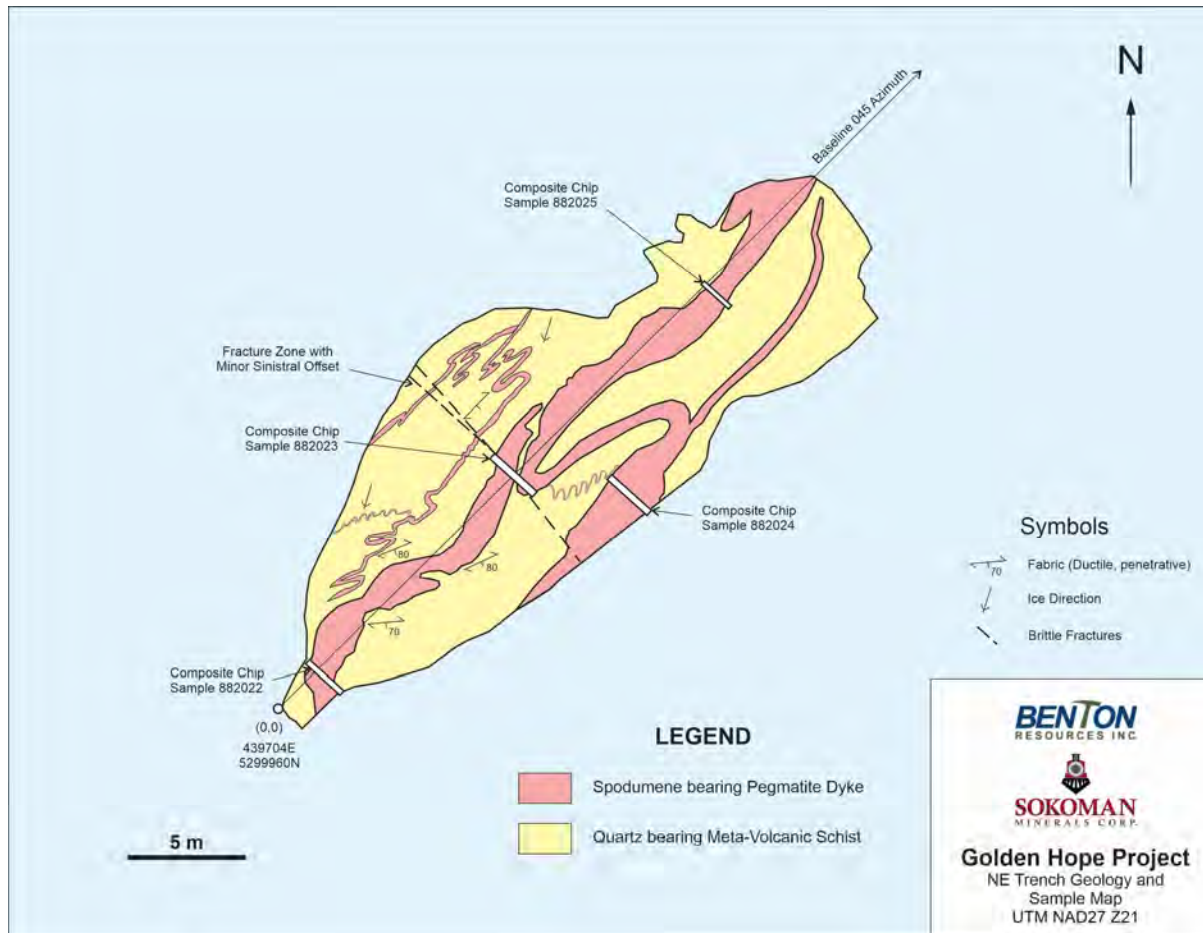
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Golden Hope Joint Venture – Kraken Lithium Discovery Spodumene Crystals – East Dyke



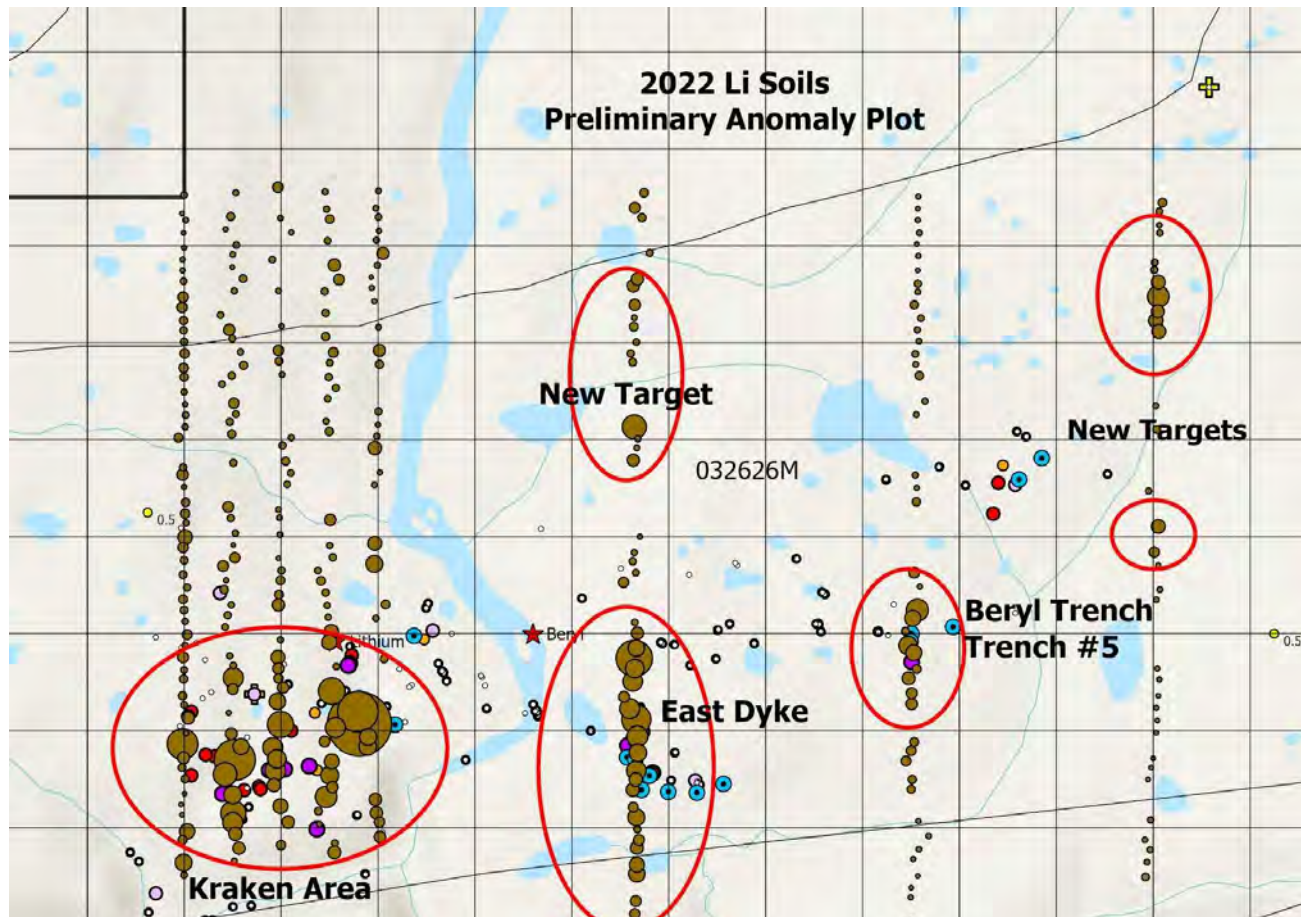
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The system can be complex – ie. folding



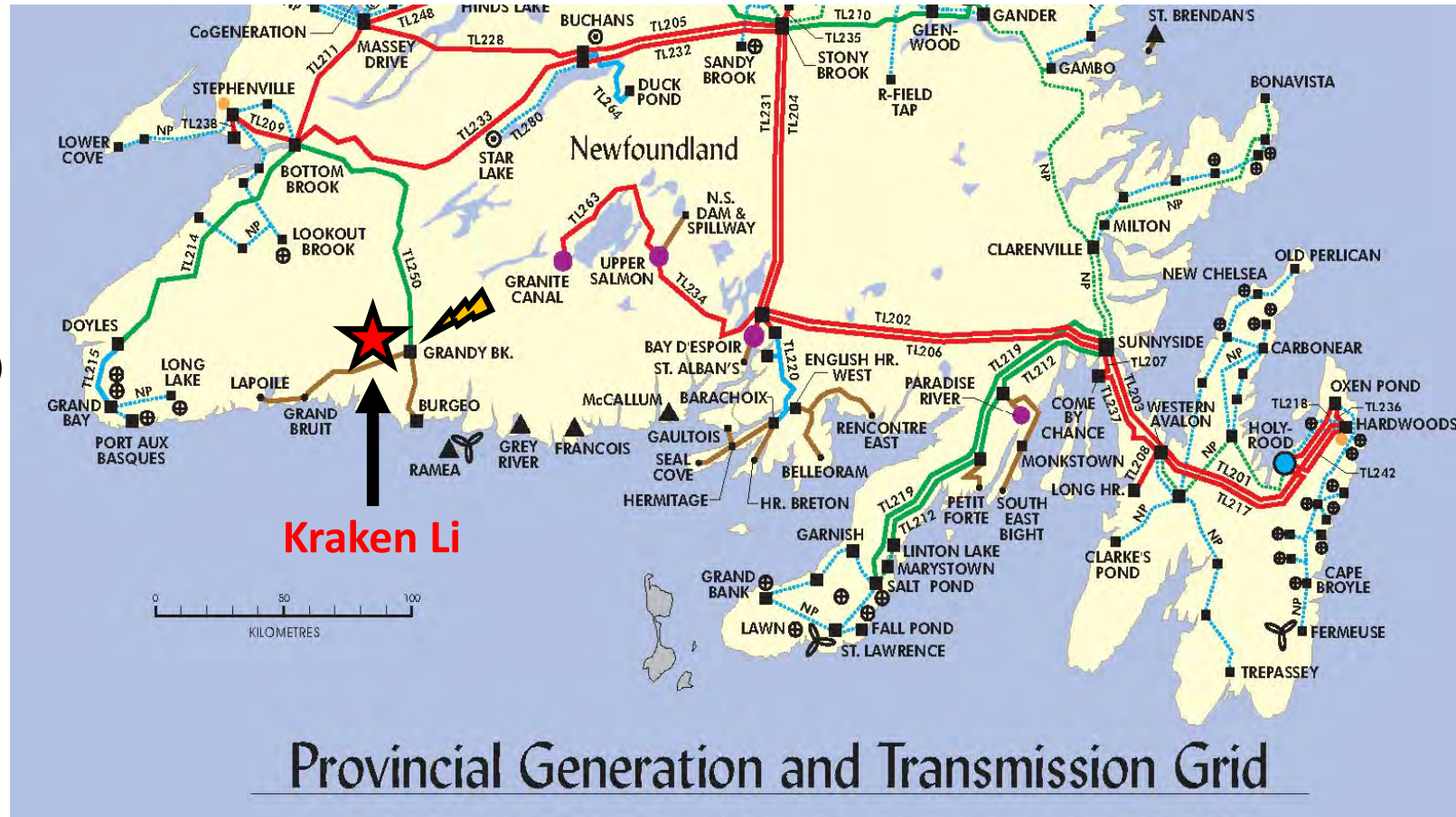
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B-Horizon Soils worked very well at Kraken. > 60 ppm Li is significant





Golden Hope Joint Venture – Kraken Lithium Discovery Infrastructure



Close to paved roads (14 kms)

High voltage substation at Grandy Brook (10 kms)

Ice-free deep water port (35 kms)

Supportive communities



Kraken Lithium Discovery – Key things to Remember



Rare-element pegmatites occur.....

- Along large regional-scale faults in greenschist and amphibolite facies metamorphic terranes;
- Typically hosted by mafic metavolcanic or metasedimentary rocks;
- Generally located near peraluminous granite plutons;
- Commonly contain blocky K-spar and green muscovite;
- Presence of tourmaline, beryl and ferrocolumbite;
- Pegmatite dykes with the most economic potential occur the greatest distance (up to 10 km) from the parent granite (but not always!)



Kraken Camp – Golden Hope Joint Venture





Acknowledgements

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THANK YOU!

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