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NEWS RELEASE 20 JULY 2022

# Field Program to Commence at ARC Project in Greenland

- **Field program to commence at ARC in the coming weeks with deployment of five geological field teams supported by customised All-Terrain-Vehicles**
- **Identified "walk-up" native copper and copper sulphide targets to be prioritised through a program of sampling, core drilling and geophysics**
- **ARC is a significant, large-scale project (5,774km$^2$ license area) with historical exploration results and recent analysis indicative of an extensive mineral system with potential to host world-class copper deposits**
- **ARC mineral system is prospective for basalt, fault, and sedimentary rock-hosted copper mineralisation; analogue of the economically significant Keweenaw Peninsula in Michigan, USA**
- **Strong news flow over the upcoming quarters from the field program and results from ongoing analysis of historical data**

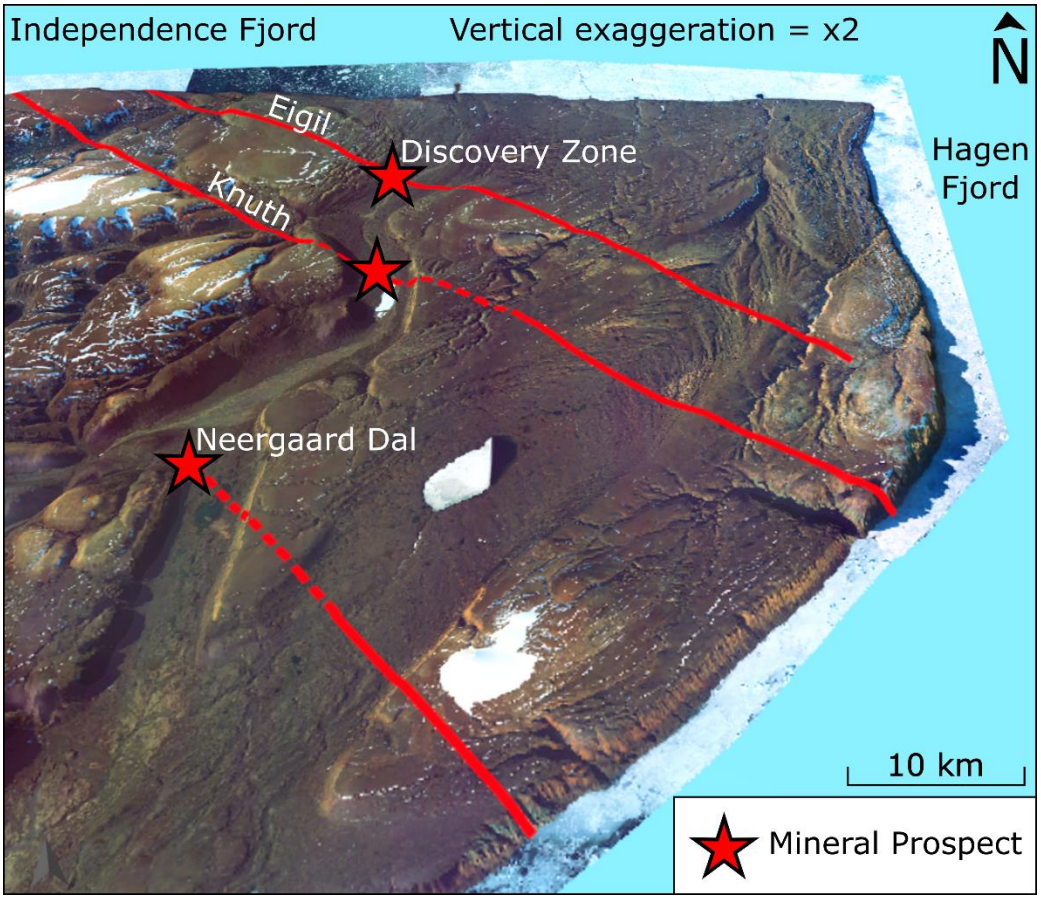


*Figure 1: Draped satellite imagery over digital terrain model. Orthogonal view is towards the north looking down Neergaard valley. New structural interpretations showing identified reverse faults and identified targets Discovery Zone, Neergaard Dal and the Knuth Fault.*

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GreenX Metals Limited (**GreenX** or **the Company**) is pleased announce the receipt of all the permits for the proposed 2022 field program at the Arctic Rift Copper Project (**ARC** or **ARC Project**), which will commence in the coming weeks. Five geological teams will be deployed in the field supported by All-Terrain-Vehicles (**ATV**). The field team and field equipment will be deployed by ship from Iceland and will access the ARC project via Independence Fjord (Figure 1).

Historical programs and latest analysis have identified a number "walk-up" native copper and copper sulphide targets that will be the priority for the upcoming field program including Discovery Zone, Neergaard Dal and the Knuth Fault (Figure 1). The field campaign is based on a program of sampling, mapping, portable core-drilling and geophysics including seismic, electro-magnetic (**EM**) and radiometrics. Portable XRF will be used in the field and the field team will have access to satellite internet for real time uploading of field results. The field program will be led in the field by Dr Jonathan Bell.

GreenX expects strong news flow over the upcoming quarters from the field program and results from ongoing analysis of historical data.

## ARC PROJECT SUMMARY

GreenX consider the observed geological setting and features of ARC to be indicative of an extensive mineral system capable of hosting copper deposits.

The large scale of the mineral system, widespread copper anomalism, combined with multiple mineralising events are analogous to some of the most significant copper systems known worldwide. Accordingly, GreenX considers that ARC has the potential to be a globally significant metallogenic province.

Historical field programs identified widespread copper-silver occurrences at surface:

- geochemical sampling found that 80% of stream sediment samples contain native copper
- native copper is found in situ or as float, with individual clasts of native copper weighing up to 1 kg+
- high grade copper sulphides, grading up to 2.15% Cu and 35.5g/t Ag over 4.5m true width, are known from trench sampling of fault zones within sediments (see GreenX announcement dated 20 January 2022 entitled "New Copper Targets Identified at ARC")
- assay results from individual samples are much higher grade, including:
    - 53.8% Cu and 2,480g/t Ag
    - 20.7% Cu and 488g/t Ag
    - 12.5% Cu and 385g/t Ag
    - 9.0% Cu and 112 g/t Ag
    - 7.9% Cu and 53 g/t Ag
    - 5.3% Cu and 112 g/t Ag
    - 5.0% Cu and 304 g/t Ag
    - 4.0% Cu and 82 g/t Ag

Very high-grade copper mineralisation identified at ARC is associated with the Minik Anomaly (Figure 2), a coincident magnetic-electromagnetic-gravity feature in an area where there is a change in oxidation state and widespread native copper in stream sediments. These features are presented as the footprint of a large-scale hydrothermal system. The frequency and size of the native copper clasts, and the high grade of the copper-silver sulphides that are exposed at the surface, bode well for the prospectivity of copper deposits and will be a will be a key focus of the first field campaign.

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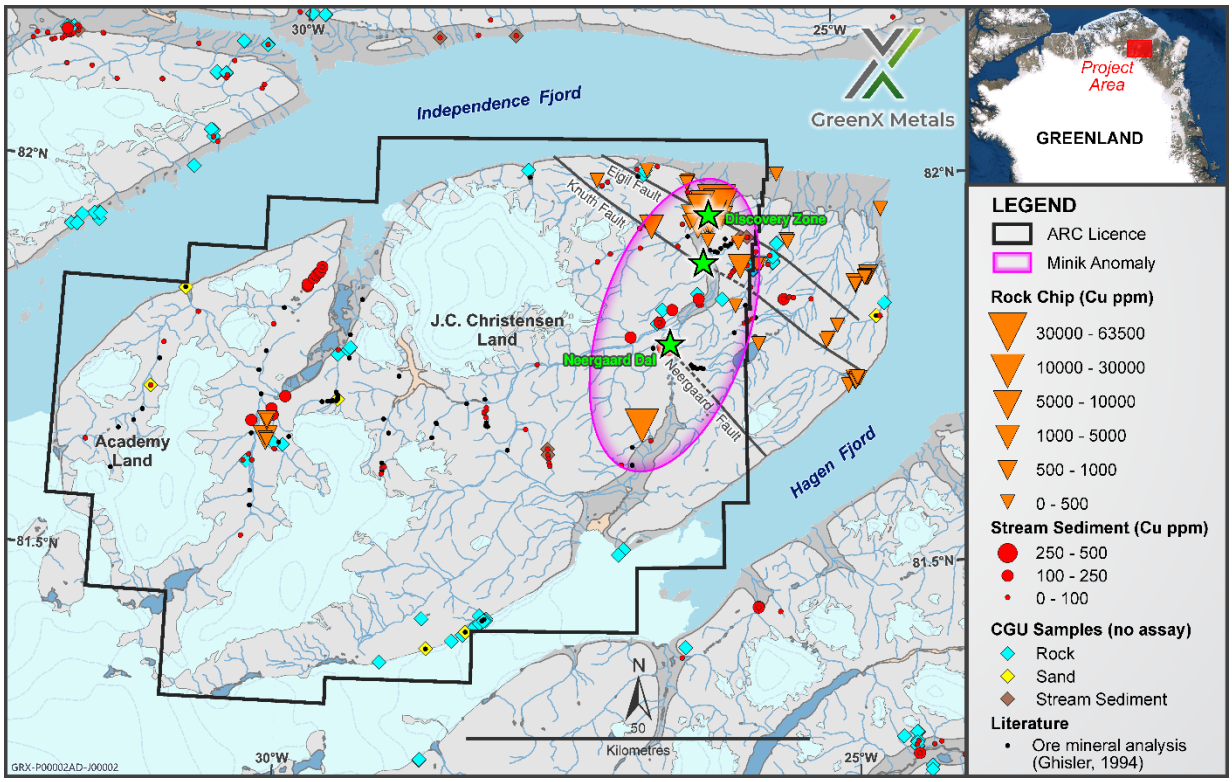


*Figure 2: ARC licence area showing historical geochemistry, the Minik Anomaly and identified faults*

There are multiple targets and favourable geological settings considered to be prospective within the ARC project area, including the following.

- The highly anomalous basalt is a high priority target that has not previously been the focus of commercial exploration. These basalts are the source of the native copper.
- The sulphide mineralised faults passing through these basalts into the overlying sediments have been subject to first pass exploration and shown to be rich in copper and silver. The high-grade sulphides in these faults will be the focus of further exploration.
- The permeable coarse-grained sandstone within the Jyske Ås Fm has high grade copper that is effectively unexplored. This stratiform mineralisation adds the potential for significant lateral extension of the known mineralisation exposed in the faults of the Discovery Zone.

As such, the extensive ARC mineral system is known to be prospective for basalt, fault, and sedimentary rock-hosted ('sediment-hosted') mineralisation that despite the attractive grades, is virtually unexplored.

## STRUCTURAL GEOLOGY REVIEW

A structural review of the currently available datasets regarding ARC's geology was recently conducted by specialist consultant Dr Mark Munro[1] (see GreenX announcement dated 20 January 2022 entitled "New Copper Targets Identified at ARC"). It was confirmed that the known copper mineralisation (Figure 2), including the native copper and Discovery Zone copper sulphides, is associated with reverse faults. Reverse faults are an important structural control on mineralisation at ARC, with the recent study both

[1] Munro, Mark (2021). "*Structural Review of the Arctic Rift Copper Project, Greenland*", Munro Geoscience Pty Ltd

extending the known reverse faults (Eigil Fault) with associated mineralisation and identifying new reverse faults (Knuth Fault and Neergaard Valley Fault) (Figure 3).

This demonstrates known mineralised structures intersecting the Zig-Zag flood basalts (Figure 4), and further strengthens the ARC's analogy with the prolific and economically significant Keweenaw Peninsula. At this analogy in Michigan, the mineralised reverse faults are the fluid transport conduits for the strata bound native copper deposition in flood basalts, and copper sulphides in the overlying sediments. The Keweenaw Peninsula contained a pre-mining endowment of +7 Mt of copper contained in sulphides and 8.9 Mt of native copper.

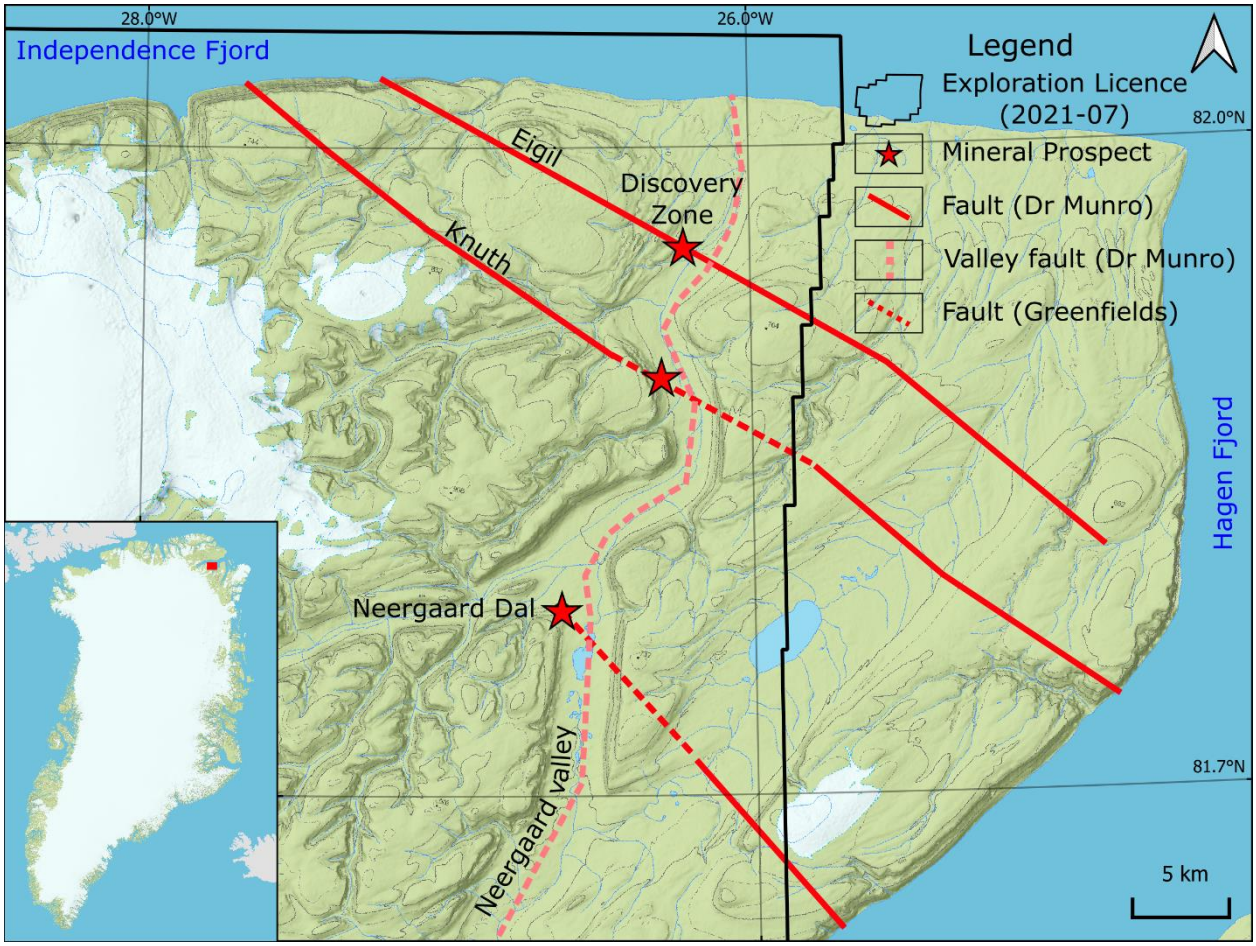


*Figure 3: Significant reverse faults identified within ARC*

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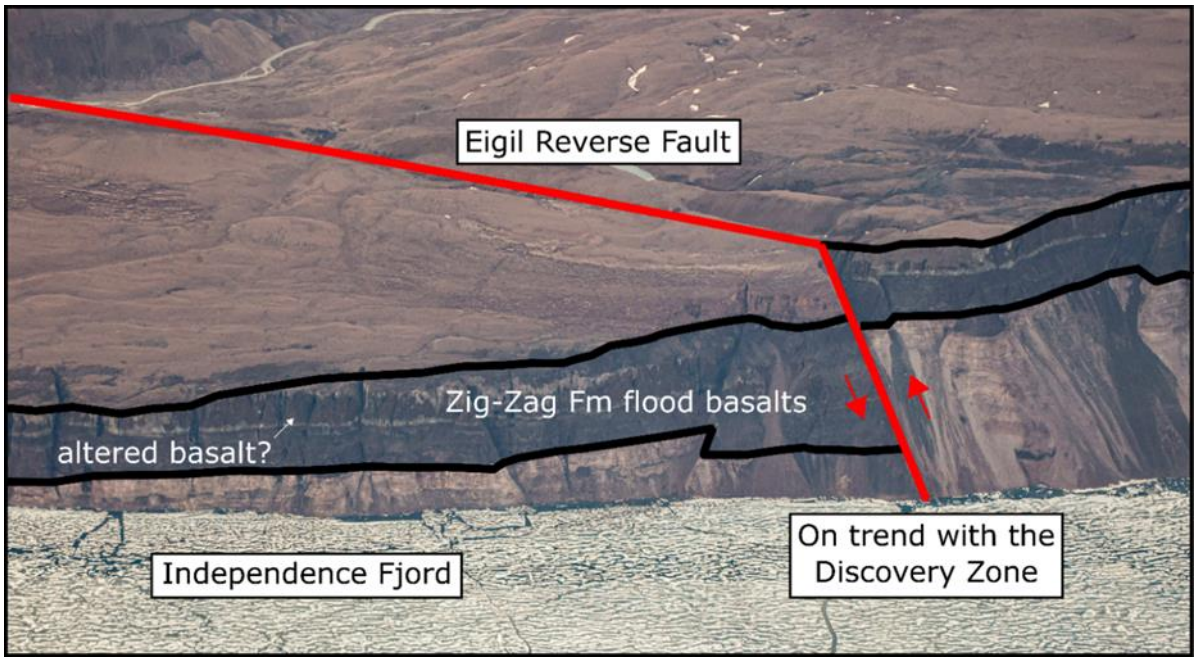


*Figure 4: Extension of the Discovery Zone Fault ('Eigel')*
*(Note: This fault is in Independence Fjord, at approximately (82.03046, -27.17269), and the cliff height at the top of the fault is approximately 450m. The fault displays a southwest side-up (reverse) displacement)*
*Source: Photo taken in August 2021 and kindly supplied by Arctic Capacity Aps*

## IDENTIFIED TARGETS AND PROSPECTS

### Discovery Zone

The most advanced prospect within ARC is the copper-silver bearing Discovery Zone, located at the northern end of Neergaard Dal (Figure 3). The Discovery Zone was identified in 2010 as a follow up to a geochemical anomaly identified by the government geologists in 1994.

The Discovery Zone is comprised of at least three parallel breccia faults trending northwest-southeast. The faults are traced for a minimum of 2km along strike before they disappear underneath moraine. The Discovery Zone is open in both directions.

The width of the fault breccias is variable, ranging from 1m to 25m thick. The host lithology is red sandstones of the lower Jyske Ås Fm, and they are proximal to outcrops of Zig-Zag Fm. The breccias have copper sulphide and copper oxide mineralisation. The copper-bearing species include chalcocite, brochantite, bornite, chalcopyrite, and malachite. The mineralisation is expressed in two main forms, within which there are two sub-forms:

1. Breccia bound. Mineralisation occurs in thin quartz-dominated veining within the fault breccia and contains disseminated copper sulphides (Figure 5). Assays from this material grades up to 53.8% Cu and 2,480g/t Ag (Figure 6).

   Within the breccia-bound mineralisation are intensely potassic, unconsolidated materials known as 'Black Earth' (Figure 7). The multiple but discontinuous 0.7m to 3m horizons have lengths between 2m to 50m. The Black Earth material contains high grades of copper and silver, with reported true widths of 4.5m grading 2.15% Cu and 35.5g/t Ag (Chip Line #7, sampled interval 5.25m, estimated true width 4.5m).

2. Stratiform. Mineralisation occurs immediately adjacent to the faults and comprises lenses and blebs of chalcocite and bornite measuring from mm-scale to 15cm long (Figure 8).

   Within the stratiform mineralisation is a poorly consolidated sandstone that is identified as a potentially vast target horizon within the Jyske Ås Fm. The outcrop shows pervasive interstitial chalcocite, bornite and chalcopyrite (Figure 9).

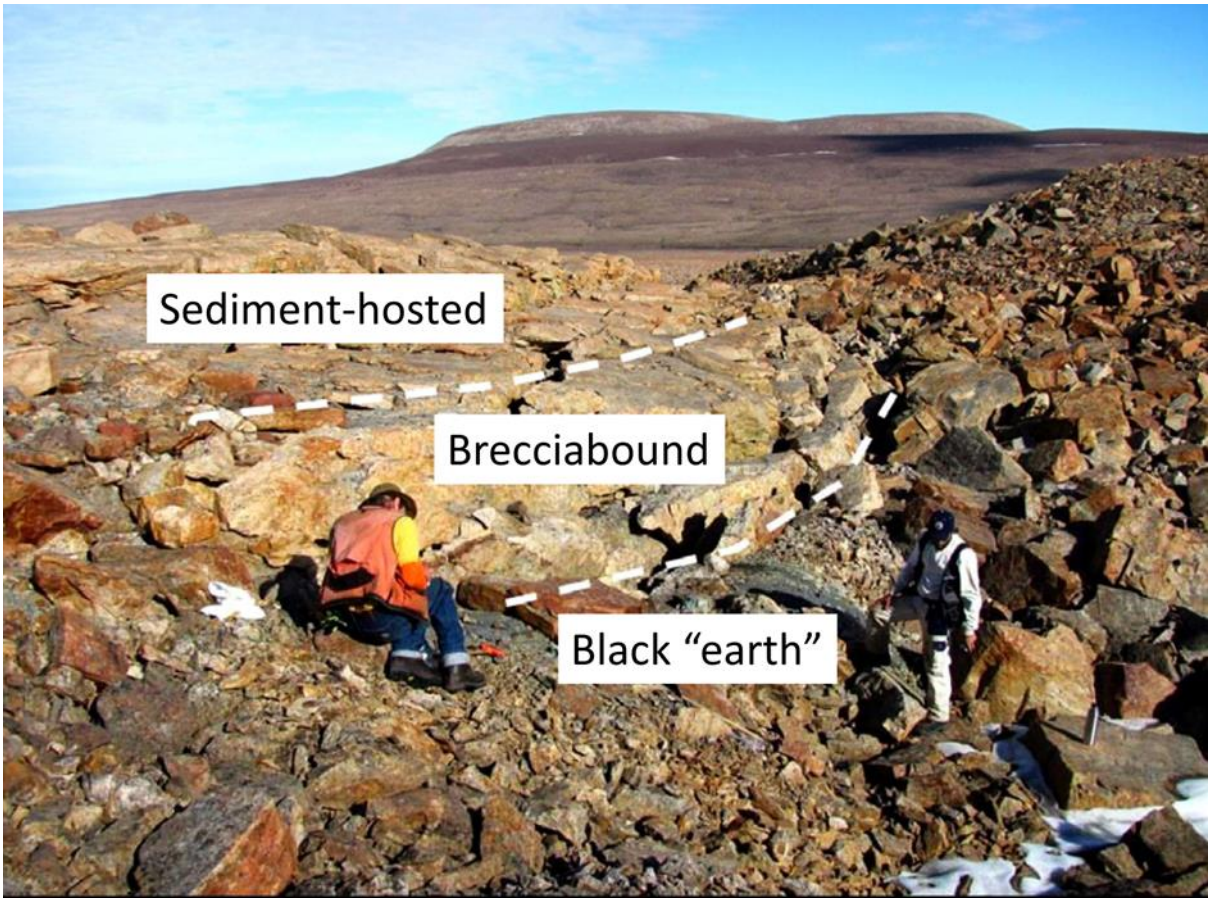


*Figure 5: Mineralisation types of the Discovery Zone*
*Note: The photo is of the 2010 field campaign.*

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*Figure 6: Breccia bound copper mineralisation*

*Figure 7: 'Black Earth' copper mineralisation*

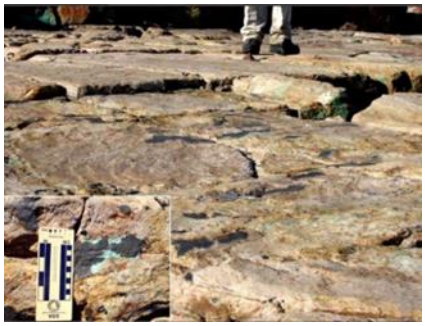

*Figure 8: Stratiform copper mineralisation in the Jyske Ås Fm*

*Note: Dark minerals are mostly chalcocite, although bornite is present as well.*

*Figure 9: Stratiform copper mineralisation in the poorly consolidated Jyske Ås layer.*

*Note: The white arrows denote chalcopyrite, and the red arrows show bornite with chalcocite rims.*

**Zig-Zag Formation**

Native copper float frequently occurs near the Zig-Zag Fm in the area around the Discovery Zone and Neergaard Valley (Figure 10). Outside of ARC a 1.5m long chip sample returned a significant grade of 1.97% Cu, and a grab sample returned 3.17% Cu from chalcocite filled vesicles (Figure 11). The Company and Greenfields Exploration Limited (**GEX**) consider the widespread occurrence of low-grade copper mineralisation, the frequent presence of sizeable native copper, and the sampled grades within the licence to be very significant.

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*Figure 10: Large native copper specimens from ARC. Sample on the right weighs ~1 kg*

*Note: Samples come from immediately east of licence (81.87° N, 24.79° W). They were found as float that originated from the basalt within ARC.*

*Figure 11: Chalcocite filled vesicles of Zig-Zag Fm*

*Note: Chalcocite appears light grey in colour due to metallic reflections. The sample is ~4cm in width and comes from outside of the licence (~80.64°N, 24.59°W).*

Valuable new information about sites of native copper was gained from recently obtained field notebooks from the Government's reconnaissance field work that was performed in the area in 1979 and 1980 (see GreenX announcement dated 20 January 2022 entitled "New Copper Targets Identified at ARC"). The field work identified numerous examples of native copper in association with the basalt rocks in Neergaard Valley, the main north-south oriented feature of the Minik Anomaly (Figure 3).

What is particularly striking is that in the centre of this anomaly there is a historical description of native copper occurring in both breccias (fissures) and gas-cavities occurring near one another. At the Keweenaw Peninsula, native copper specimens weighing over 500 tonnes were mined from fissures and underpinned the original 'gold'-rush. However, it was the copper found in gas-cavities within the flood basalts that underpinned much of the 99-year mining history of the district. The historical description of fissure copper next to cavity-hosted copper within ARC adds support to the Keweenaw analogy as well as evidence of a vigorous (favourable), breccia inducing mineralisation event. The JV partners will investigate this site as a matter of priority during the 2022 field program.

## ARC - GEOLOGICAL ANALOGUES

In terms of exploration targeting at ARC, the known mineralisation is ascribed to two distinct deposit types:

- **Sediment-hosted stratiform copper** - within this family of deposit types, ARC is analogous to the super-giant Katangan Basin ('Copperbelt'), the Zechstein ('European Kupferschiefer') and the White Pine-Presque Isle ('White Pine') deposit models. Such deposit models account for a large proportion of the world's highest quality mineral deposits due to their potential favourable size and grade combinations.

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- **Basaltic native copper** - which is a comparatively poorly understood deposit type. Such deposits occur around the world however, documentation of the American and Canadian deposits is most readily available (e.g., Keweenaw, Michigan; Kennecott, Alaska; Sustut, British Columbia). Of the historical native copper districts, the Keweenaw Peninsula dominates the literature and production statistics are available. The Keweenaw Peninsula had a pre-mining endowment of 8.9Mt of native copper, of which 6.5Mt was mined for ~100 years from the 1840's. Most of the commercial production of native copper was from stratiform deposits, which facilitated high production rates and early introduction of mechanisation. Notably, mining from 'fissures' produced masses of native copper weighing hundreds of tonnes.

The closest geological analogue to ARC based on present understanding is the Keweenaw Peninsula which had a known pre-mining copper endowment including both native and sulphidic copper of over 16Mt and was a prolific mining district as noted above. Whilst the Keweenaw Peninsula is notable for its native copper, the sulphidic sediment-hosted mineralisation is also significant (Figure 12). The endowment of the copper sulphide mineralisation contained in two well-known deposits is around 4.5Mt Cu. The copper sulphide deposits also contain substantial amounts of silver, with the White Pine deposit having yielded 50Moz of silver, as part of the 2.0Mt of copper that was mined with average grades of 1% Cu and 12g/t Ag. The White Pine mine was in production between 1953 and 1996. The other known deposit is the Copperwood copper sulphide deposit which is subject to current economic evaluation.

In addition to copper mining, the Michigan mineral province also contains a high-grade magmatic nickel-copper sulphide-bearing deposit, Eagle Mine, discovered by Rio Tinto and now operated by Lundin Mining. Commercial production commenced from Eagle Mine in 2014. The mine is expected to produce 163Kt of nickel, 134Kt of copper and accessory platinum, palladium, and cobalt over its estimated nine-year mine life.

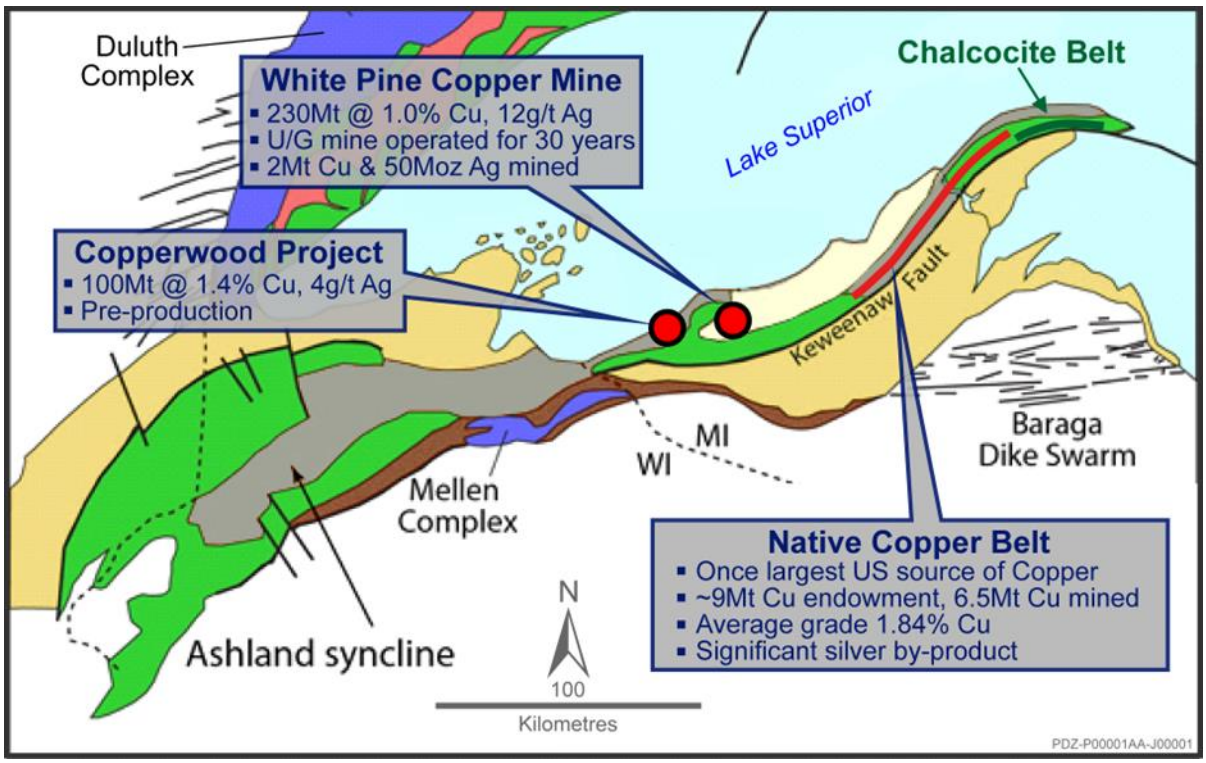


*Figure 12: Copper endowment of the historic White Pine & Keweenaw mining districts - Michigan, USA*

## ABOUT THE ARCTIC RIFT COPPER PROJECT

ARC is an exploration joint venture between GreenX and GEX. GreenX can earn 80% of ARC by spending A$10 M by October 2026. The ARC Project is targeting large scale copper in multiple settings across a 5,774 km$^2$ Special Exploration Licence in eastern North Greenland (Figure 13). The area has been historically underexplored yet is prospective for copper, forming part of the newly identified Kiffaanngissuseq metallogenic province. This province is thought to be analogous to the Keweenaw Peninsula of Michigan, USA, which contained a pre-mining endowment of +7 Mt of copper contained in sulphides and 8.9 Mt of native copper. Like Keweenaw, ARC is known to contain at surface, high-grade copper sulphides, 'fissure' native copper, and native copper contained in what were formerly gas bubbles and layers between lava flows.

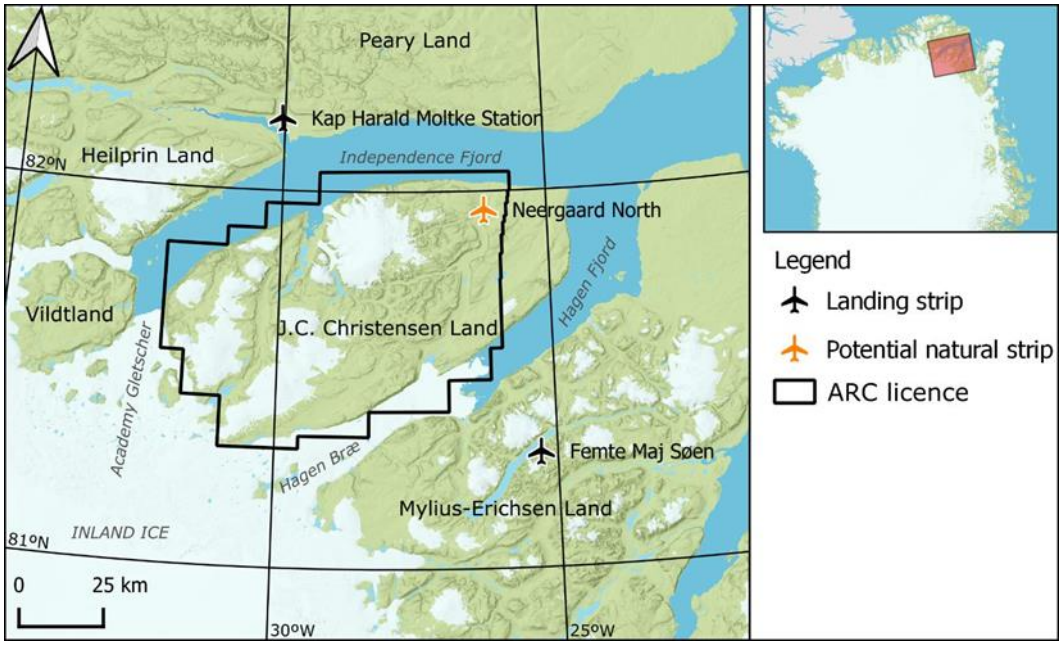


*Figure 13: ARC license area*

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***Competent Persons Statement***

*The information in this announcement that relates to the Exploration Results is extracted from the announcements dated 6 October 2021 and 20 January 2022. The announcements are available to view on the Company's website at www.greenxmetals.com. GreenX confirms that a) it is not aware of any new information or data that materially affects the information included in the announcements; b) all material assumptions included in the announcements continue to apply and have not materially changed; and c) the form and context in which the relevant Competent Persons' findings are presented in this report have not been materially changed from the announcements.*

***Forward Looking Statement***

*This release may include forward-looking statements, which may be identified by words such as "expects", "anticipates", "believes", "projects", "plans", and similar expressions. These forward-looking statements are based on GreenX's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of GreenX, which could cause actual results to differ materially from such statements. There can be no assurance that forward-looking statements will prove to be correct. GreenX makes no undertaking to subsequently update or revise the forward-looking statements made in this release, to reflect the circumstances or events after the date of that release.*

This announcement has been authorised for release by Mr Ben Stoikovich, CEO