

# Geological Characteristics of the E&L Intrusion and the Ni-Cu-Co-Precious Metal Sulfide Mineralization

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OCTOBER 2020



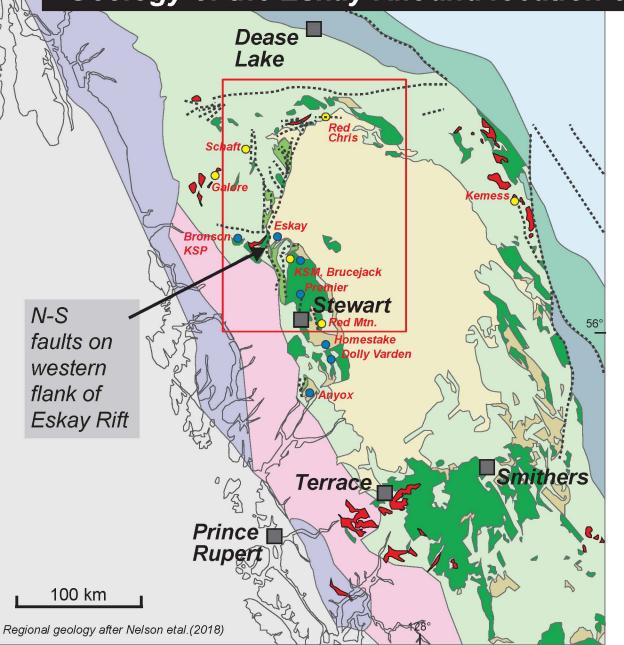
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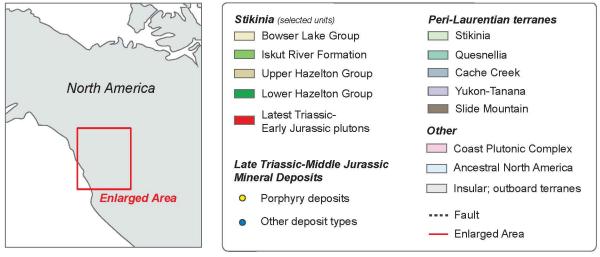
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## Geology of the Eskay Rift and location of the principal ore deposits

128°



132°



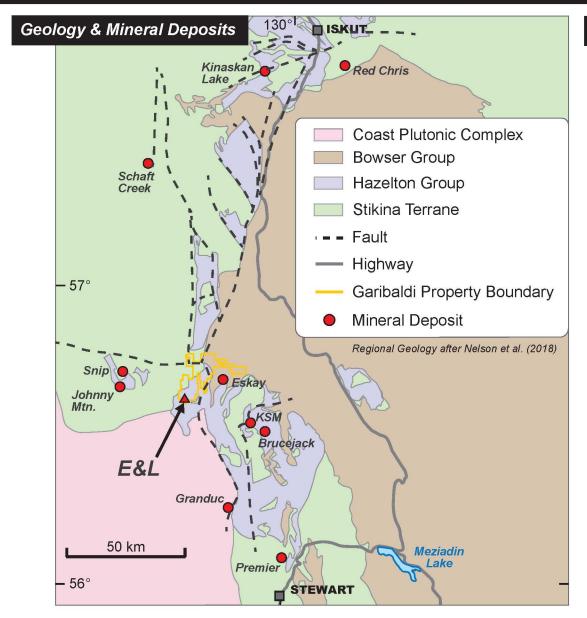
The Eskay Rift Zone in NW British Columbia is a classic example of an orogenic rift produced during strike-slip motion between two plates

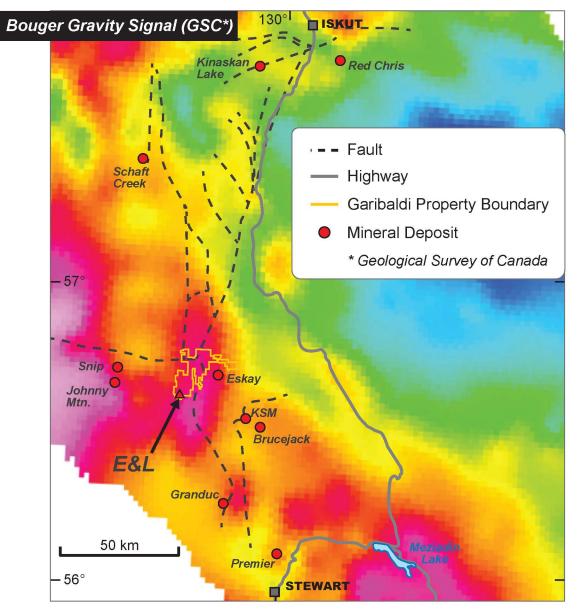
The Hazelton Formation sulfidic sediments and volcanic rocks together with Jurassic-aged gabbroic intrusions provide a classic setting for the development of magmatic sulfide mineralization



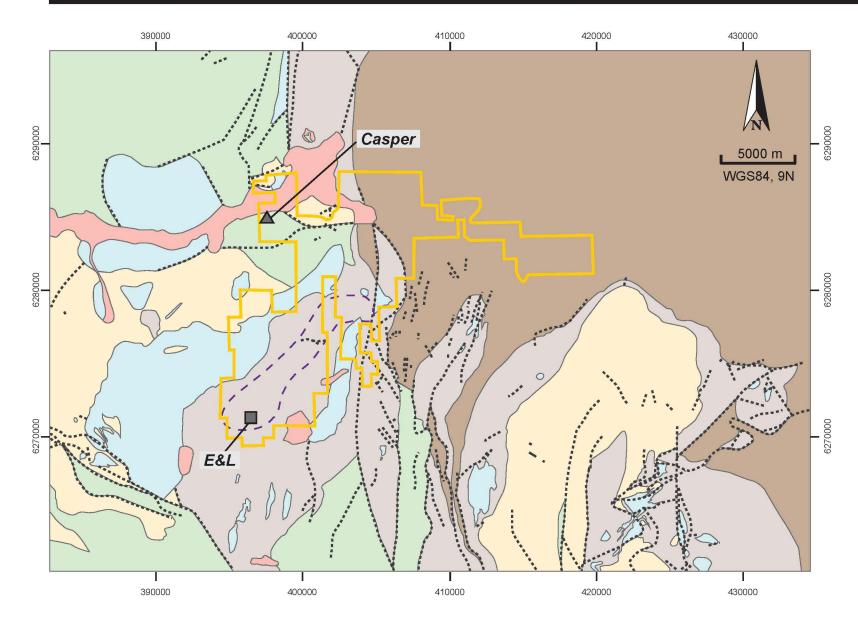
The red rectangle shows the area enlarged on page 3

## Geological and geophysical regional setting of the Nickel Mountain Property





## Geology of the Nickel Mountain Property and location of E&L



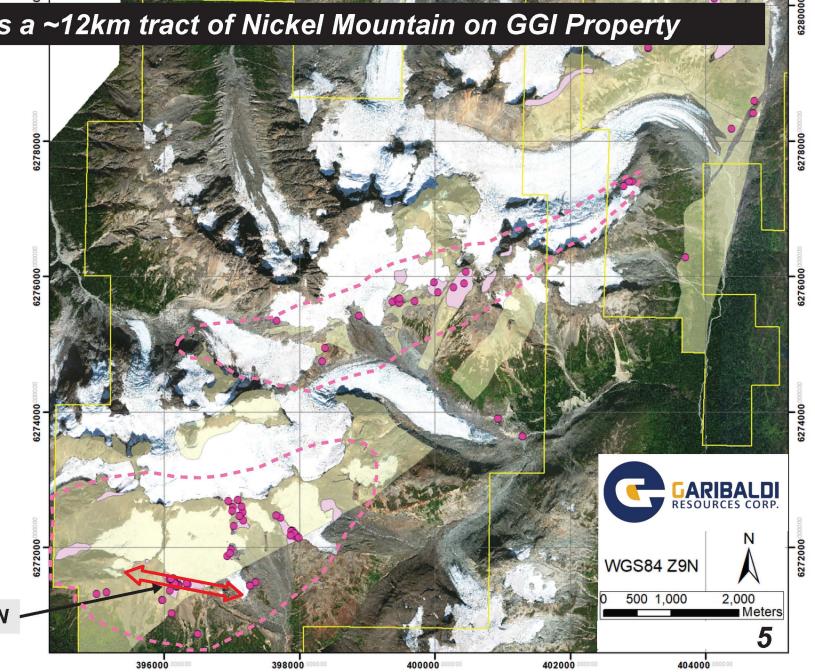
- Extensive footprint of the Nickel Mountain gabbro complex extends over 12km of strike length
- Prospective gabbroic intrusions are hosted by sedimentary rocks of the Hazelton Formation (see page 5)
  - Paleocene
    Bowser Lake Group
    Hazelton Group
    Stikine Assemblage
    Stuhini Group
    Granodioritic Texas Creek
    Plutonic Suite
    Extent of gabbros of Nickel
    Mountain Intrusive Series
    Fault
    Garibaldi property boundary



## Gabbroic rocks extend across a ~12km tract of Nickel Mountain on GGI Property

Nickel Mountain: distribution of mapped gabbroic rocks in outcrop and in-situ samples with MgO>7.5wt% showing the extent of highly prospective Nickel Mountain gabbro suite rocks in shales of the Spatsizi Formation

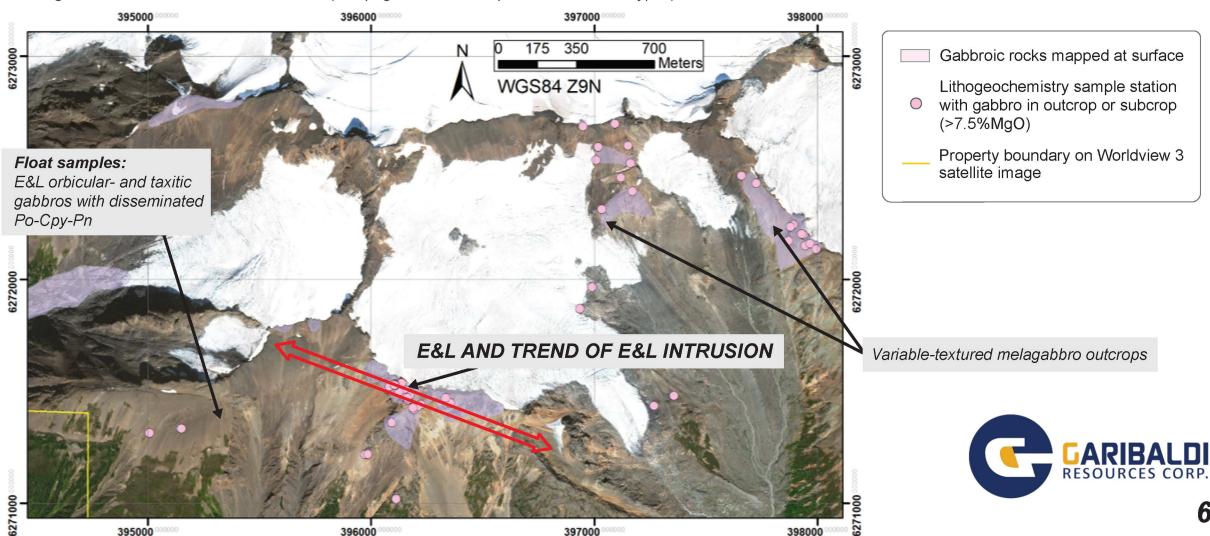
- Upper Hazelton Group Spatsizi Formation host rocks (shales)
- Gabbroic rocks mapped at surface
- Footprint of prospective Nickel Mountain gabbro system
  - Lithogeochemistry sample station
- with gabbro in outcrop or subcrop (>7.5%MgO)
- Property boundary on Worldview 3 satellite image



E&L AND TREND OF E&L INTRUSION

## Tracing the extension of E&L along the prospective corridor defined by drilling

- Field work designed to identify new segments of mafic intrusions utilizing results of 2018-2019 lithogeochemistry and spectral interpretation of Worldview 3 satellite images
- Boulders with mineralization and textures similar to E&L were located ~900m west of E&L with strong similarities to the E&L rocks and variable-textured gabbros ~700 and 1500m to northeast (see page 7 for a description of these rock types)



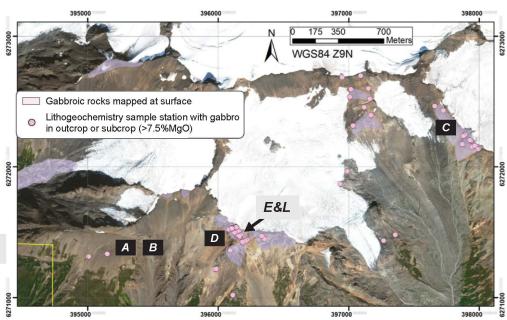
397000

396000

## Tracing the extension of E&L along the prospective corridor

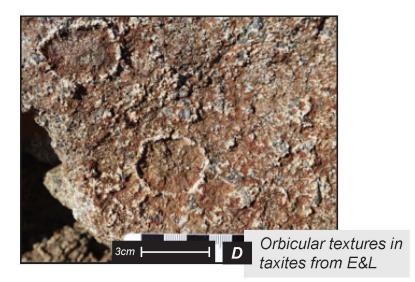
Float and outcrop samples located west and east of E&L





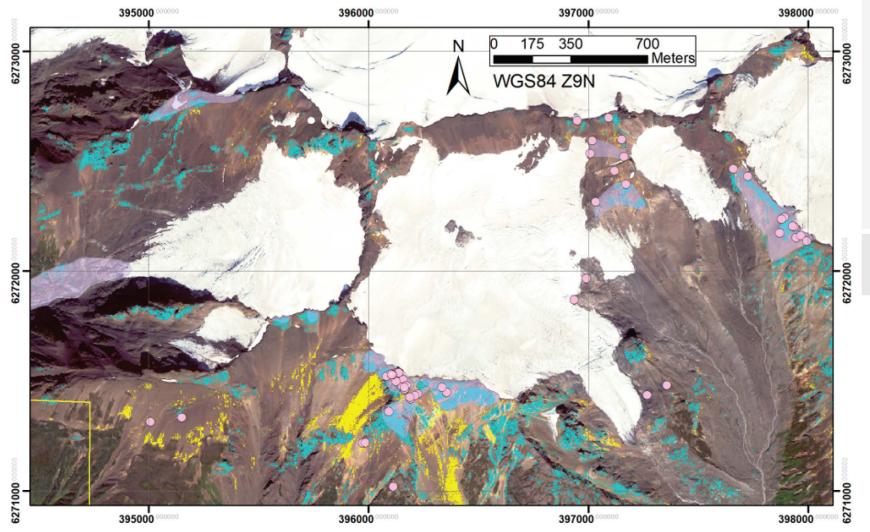








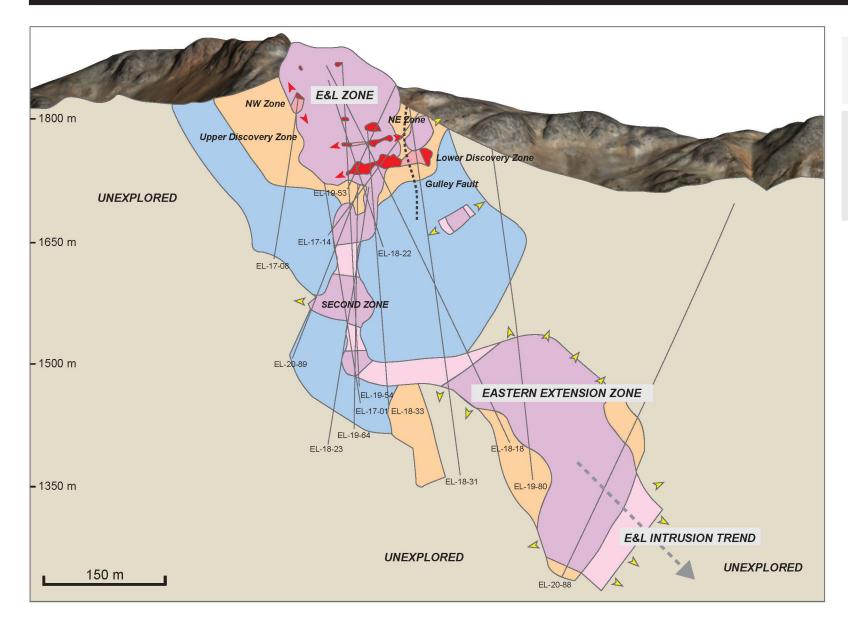
## Modelled distribution of gabbro and jarosite distribution based on Worldview 3 satellite data with superimposed location of gabbroic intrusions and samples with >=7.5%MgO



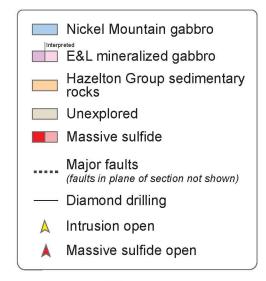
- SIGNIFICANCE OF JAROSITE: Jarosite is a hydrous sulfate of potassium and iron with a chemical formula of KFe<sup>3+</sup><sub>3</sub>(OH)<sub>6</sub>(SO<sub>4</sub>)<sub>2</sub>. This sulfate mineral is formed in ore deposits by the oxidation of iron sulfide. The spectral response relates directly to the position of E&L upslope of the color anomaly. Other jarosite anomalies related to gabbro are targets for follow-up.
- Gabbro spectral response is processed to match known outcrops of gabbro
  - Jarosite spectral response
  - Gabbro spectral response
    - Gabbroic rocks mapped at surface
    - Lithogeochemistry sample station with gabbro in outcrop or subcrop (>7.5%MgO)

Worldview 3 data processed by Joe Zamudio

### Long section view towards north showing the distribution of E&L gabbro and mineralization

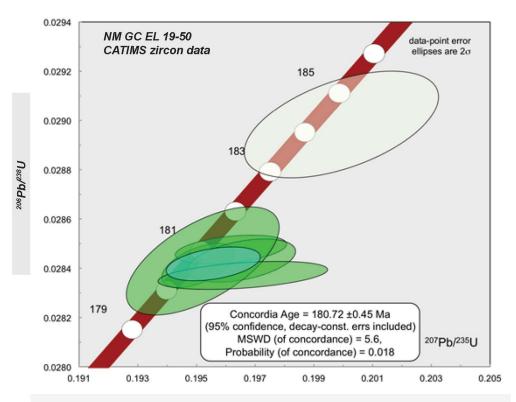


- Exploration potential at E&L exists along the plunge extent of the intrusion towards the east
- High-grade massive sulfides tend to be hosted by Hazelton Group sedimentary rocks adjacent to olivine gabbros with disseminated sulfide mineralization





### Sequence of events in the formation of the E&L and Nickel Mountain mafic intrusions



Zircon from the barren Nickel Mountain gabbro from borehole EL-19-50 (15-20m) adjacent to the E&L Intrusion has yielded a U-Pb age date of 180.72+/-0.45Ma (Data provided by Kevin Chamberlain).

 A reliable age date for the mineralized E&L Intrusion is not yet available because it has been difficult to locate grains of zircon or baddeleyite.



EL-17-01 168-181m: Transitional gabbro (TG) between Nickel Mountain Gabbro and E&L-type olivine gabbro at ~174-175m.

 The gradational relationship indicates that the two intrusions were emplaced in a short-lived multi-phase magmatic event.

### E&L Intrusion: texture and sulfide content of rock

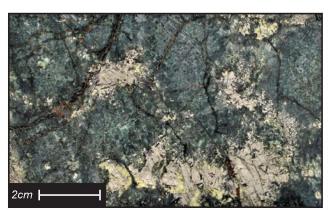


Hole EL-18-19 @ 96.25m

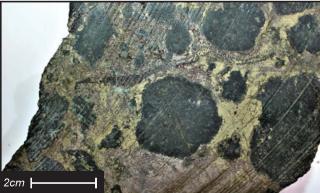
Disseminated sulfide in orbicular to taxitic-textured olivine gabbro



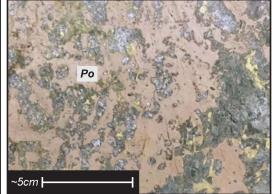
Hole EL-20-88 @ 525m
Disseminated sulfide in olivine pyroxenite



Hole EL-19-47 @ 89.7m
Orbicular-textured olivine gabbro

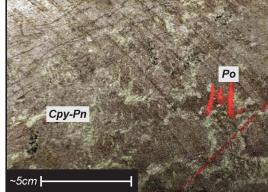


Hole EL-19-53 @ 124.0m Semi-massive sulfide with orbicular-textured gabbro



Hole EL-18-33 @76.6m

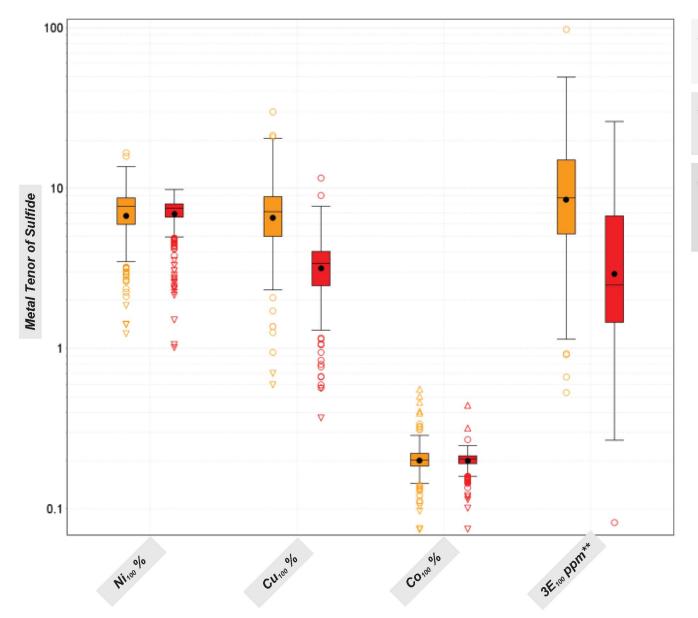
Net-textured to semi-massive contact sulfide at margin of E&L Intrusion



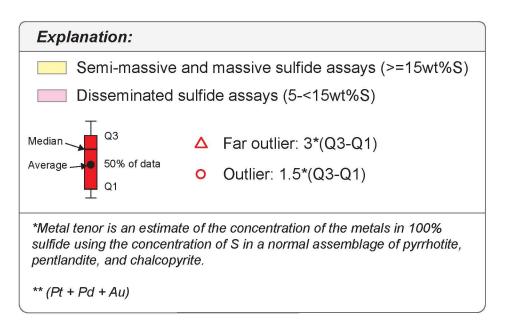
Hole EL-18-23 @ 73.8m

Loop-textured massive sulfide in Hazelton Group

## Quality of mineralization at E&L and variations in Ni, Cu, Co, and precious metal tenor\*



- Massive and disseminated sulfides contain an average of 7-8wt%Ni in 100% sulfide
- Massive sulfides have lower Cu and total precious metal tenor than disseminated sulfide
- If the disseminated and massive sulfides were produced from the same sulfide melt, then there are significant amounts of Cu and precious metals missing from the known E&L semi-massive-massive sulfide zones



## Quality of massive and semi-massive sulfide mineralization at E&L: low concentrations of deleterious elements

	UNITS	n	MEAN	MEDIAN	ST.DEV. (1 sigma)
TYPE	UNITS	MASU*-SMASU**	MASU-SMASU	MASU-SMASU	MASU-SMASU
Ni	wt%	479	6.6	7.3	1.9
Cu	wt%	479	3.2	3.3	1.3
Co	wt%	479	0.2	0.2	0.0
3E	ppm	479	4.0	2.3	3.7
S	wt%	479	33.7	35.9	5.7
Ni <sub>100</sub>	wt%	479	7.1	7.5	1.4
Cu <sub>100</sub>	wt%	479	3.5	3.4	1.4
Cu <sub>100</sub>	wt%	479	0.2	0.2	0.0
3E <sub>100</sub>	ppm	479	4.4	2.5	4.1
MgO	wt%	479	0.4	0.0	1.0
As	ppm	479	22.3	11.0	109.9
Bi	ppm	479	0.5	0.4	0.4
Cd	ppm	479	2.4	2.2	1.6
Cr	ppm	479	869	312	1623
Pb	ppm	479	10.6	8.0	24.2
Sb	ppm	461	0.9	0.5	1.5
Sn	ppm	479	1.7	0.5	4.0
Te	ppm	460	5.6	5.0	4.3
Zn	ррт	479	101.2	85.0	79.3

Massive and semi-massive sulfides (>=15 wt% S)

#### Highlights:

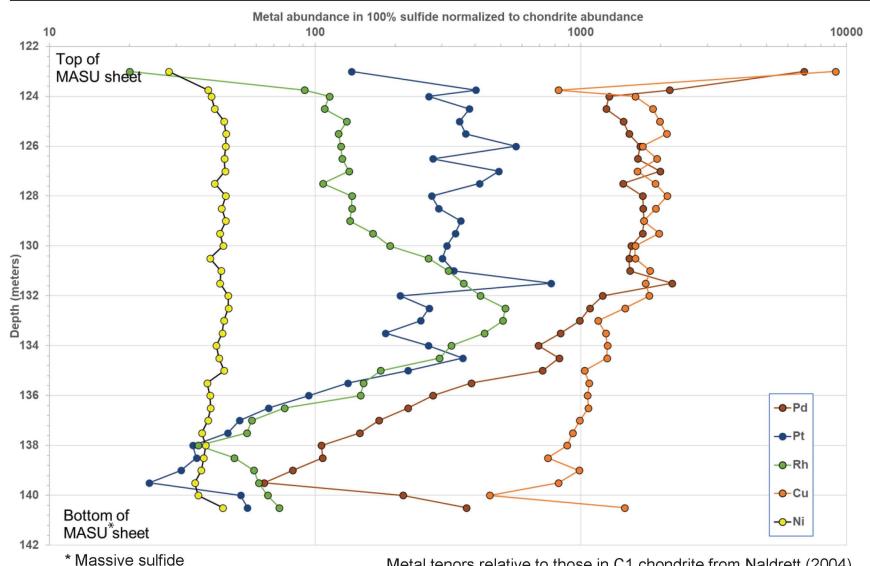
- Elevated metal concentrations in sulfide (Ni<sub>100</sub>, Cu<sub>100</sub>, Co<sub>100</sub>, 3E<sub>100</sub>)
- Low abundances of deleterious elements like MgO, As, Bi, Cd, Pb, Sb, Sn, Te, and Zn
- Local development of Cr spinel within footwall sulfide mineralization

For values at limit of determination (LoD), 1/2 of the LoD value is used for the calculation

- \* MASU: Massive sulfide
- \*\* SMASU: Semi-massive sulfide



## Systematic variations in base and precious metals through massive sulfides of Lower Discovery Zone in hole EL-17-14

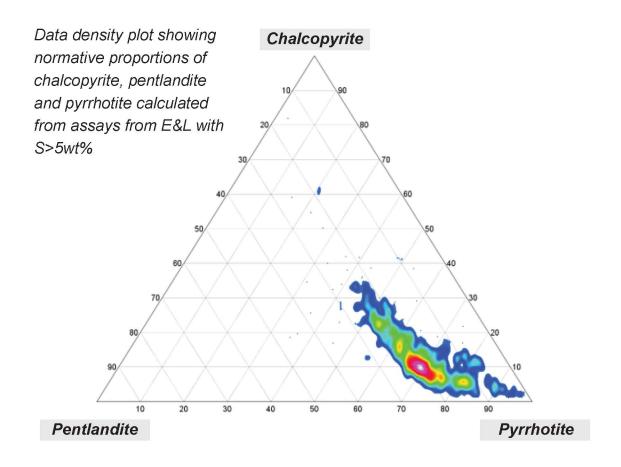


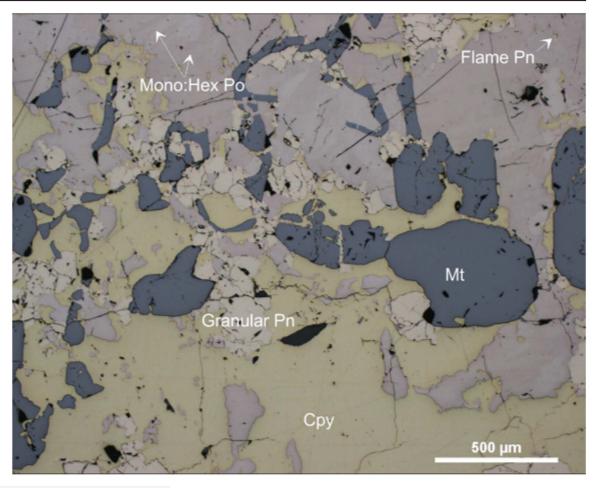
#### Average concentrations in rock from hole EL-17-14:

- 1.7g/t Pt
- 4.0g/t Pd
- 0.89 g/t Au
- 0.16g/t Rh
- 0.11g/t Ru
- 0.19g/t Ag



## Mineralogy of massive and disseminated sulfide mineralization

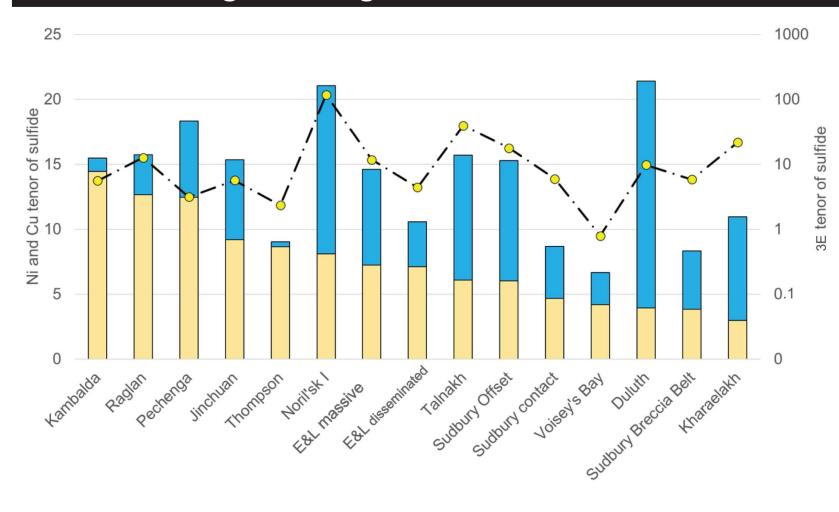




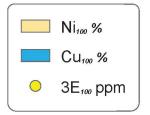
- Hexagonal:monoclinic pyrrhotite ratio 0.5 (X-ray diffraction on 13 samples from the Discovery Zone)
- Granular:flame pentlandite ratio >0.95 (petrographic observations on polished samples)
- Ni concentration in solid solution in pyrrhotite: 0.65% (determined by electron microprobe on 191 grains)
- Dominant control of telluride minerals on Ag, Pt, and Pd

Massive sulfide from Discovery Zone in reflected light showing granular pentlandite, hexagonal and monoclinic pyrrhotite, chalcopyrite, and magnetite (sample EL14@130.6m)

## Comparison of the metal tenor in 100% sulfide of E&L massive and disseminated sulfides with global magmatic sulfides



- Ni and Cu tenor of the massive and disseminated sulfide at E&L compare with world-class magmatic sulfide ore deposits
- Precious metal tenors (3E)\* are amongst the highest of the deposits shown
  - \* (Pt+Pd+Au) ppm



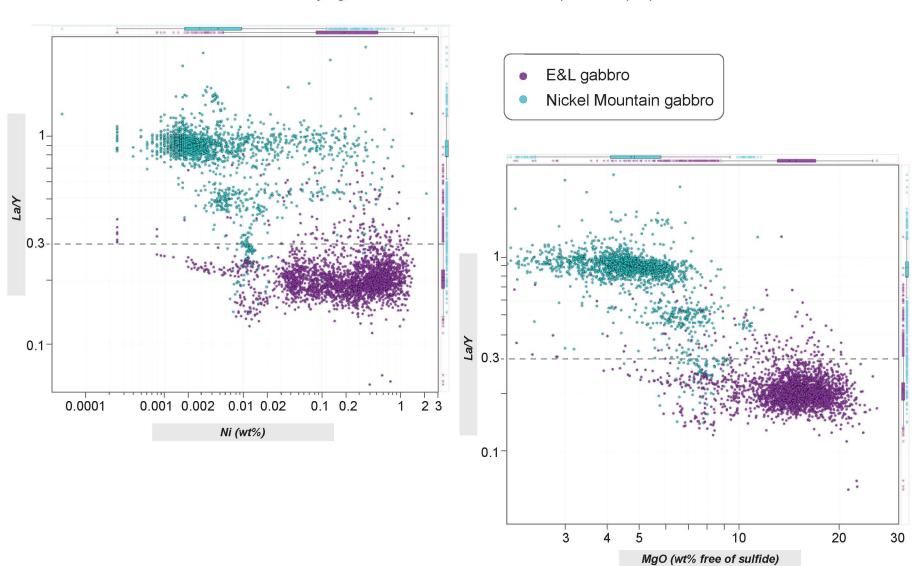
Data source: deposit data are averages by deposit and/or mineralization style from Naldrett (2004) and Lightfoot (2016).

Analyses from E&L are averages based on assays with >15wt%S (semi-massive and massive) and 5-15wt%S (disseminated)



## Tracing the extension of E&L along the prospective corridor

· Thanks to consistent careful assaying, value can be extracted for exploration purposes from the database



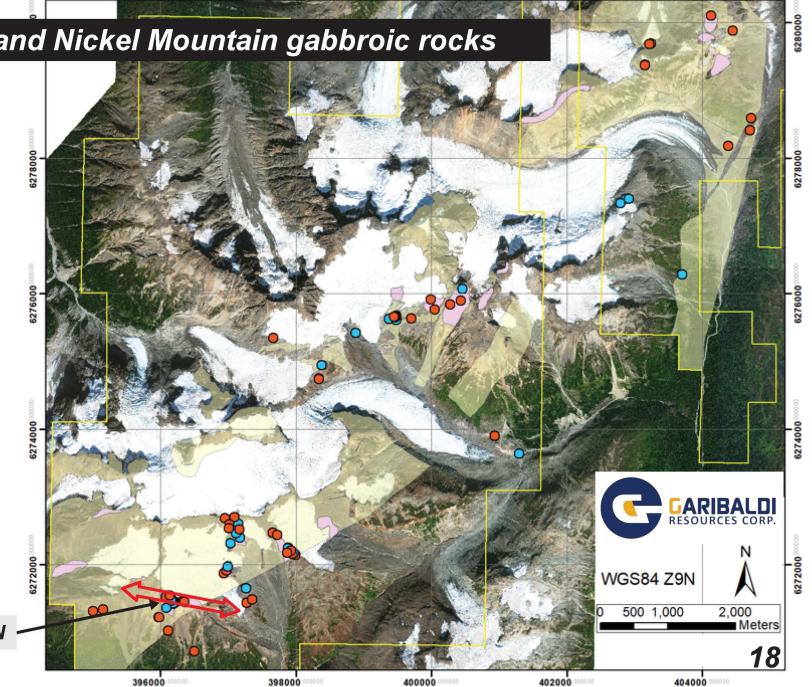
- The whole-rock geochemical signal of the barren and weakly mineralized gabbros from the E&L Intrusion differ from most samples from the barren equigranular Nickel Mountain Gabbro
- The La/Y and MgO concentrations offer a way to identify rocks that belong to intrusions that have a greater chance of being mineralized



Geochemical signal of E&L and Nickel Mountain gabbroic rocks Regional Exploration Signal: as shown on page 17,

the geochemical signals from E&L type gabbro contrast with those of the Nickel Mountain type gabbro: variations in MgO and La/Y help target gabbro which belongs to the mineralizing event. Cr variations are also an important discriminant. This map indicates that E&L type gabbros extend far beyond the known extent of the E&L Intrusion.

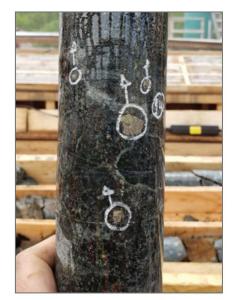
- Spatsizi Formation host rocks (shales)
- Gabbroic rocks mapped at surface
- E&L type gabbro signal (La/Y<0.3)
- Nickel Mountain gabbro signal (La/Y>=0.3)
- Property boundary on Worldview 3 satellite image



E&L AND TREND OF E&L INTRUSION

### Morphology of the E&L Intrusion and localization of sulfide mineralization

- In 2019, Vektore was engaged by GGI to provide technical expertise to the Nickel Mountain Project.
- Vektore's world class structural experts support the project by collecting, processing, and interpreting structural data from oriented and non-oriented core to understand the controls on mineralization and the morphology of the intrusions.
- At the core of Vektore's best practices is the Ore.node® software and the application of the vSET™ and vSI™ methods to log the structures in oriented core and invert the results to that they can be incorporated into 3D models of the mineral zones.
- The geometry of mineral zones is understood by using the Structural Vectoring® parameters such as ore contacts, sulphide foliation/lineation, way-up lineations, and stretched loop structure.
- Vektore's work helped to establish the plunge of the E&L Intrusion

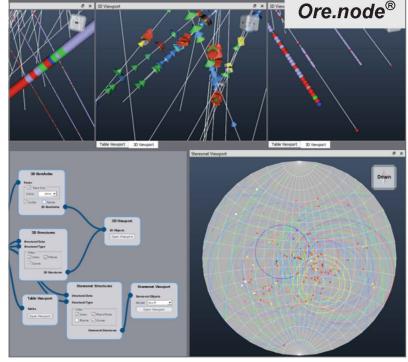


Hole EL-19-48 ~97m
Blebby pyrrhotite
-pentlandyte-chalcopyrite
(Way-up lineation) Orbicular
texured taxite



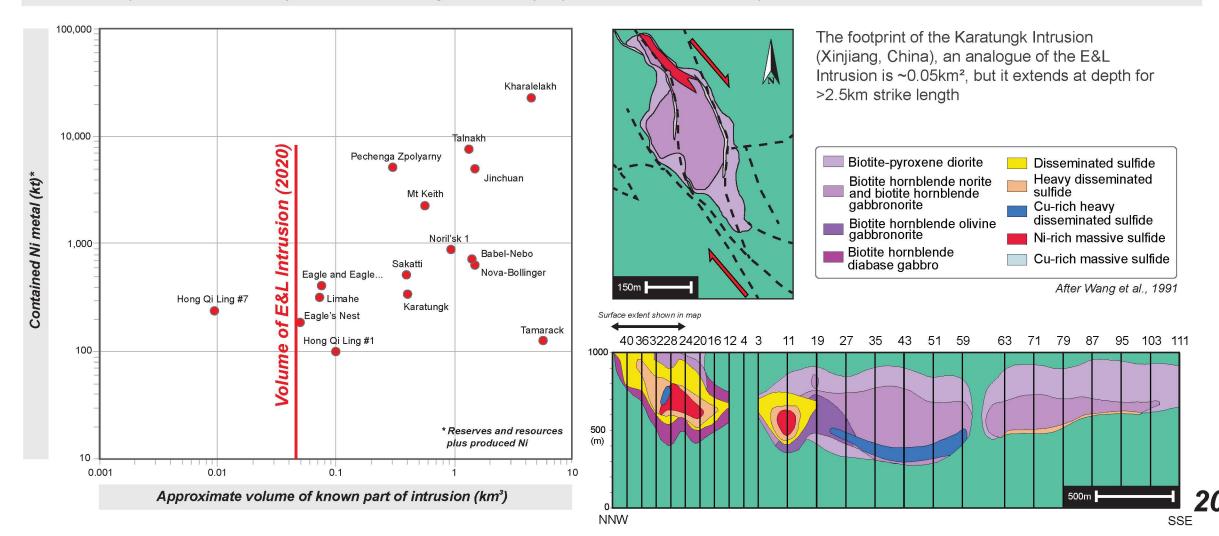
Hole EL-17-14 @ 136.1m

Stretched loop textured pyrrhotite-pentlandite-chalcopyrite massive sulphide. Lineation indicates flow directions (red line)



## Small differentiated intrusions represent open system magma conduits (chonoliths) which are excellent targets for magmatic sulfide exploration

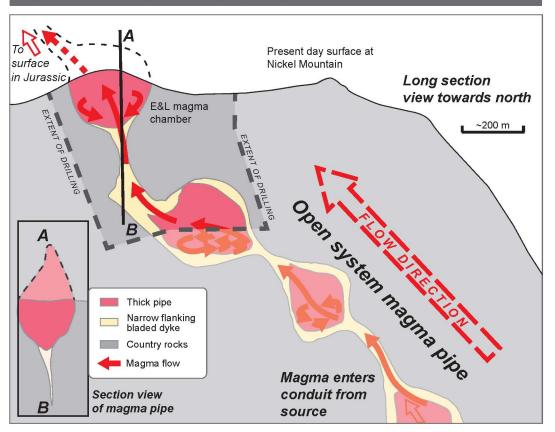
- The E&L intrusion is growing in volume with exploration along the WNW-ESE trend
- E&L is comparable in size to many intrusions containing economically important nickel sulfide ore deposits



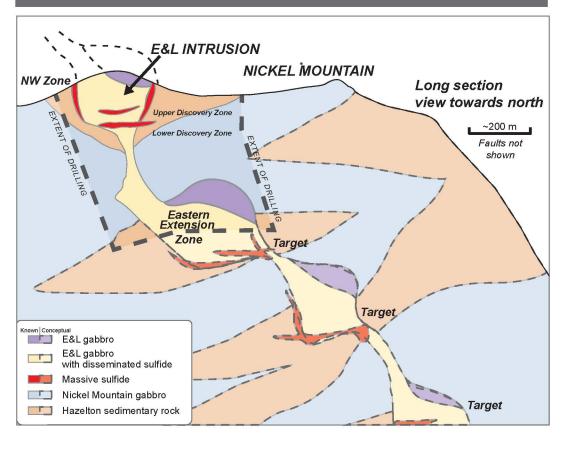
## Open system magma conduits (chonoliths) typically have a small volume and footprint; exploration must follow their strike extent to find new mineral zones

- · Morphology of E&L Intrusion is a bladed pipe
- Originally an open system magma conduit plunging at ~45 degrees towards the east
- Mineralization occurs within the pipe, along the flanks, and within footwall lenses in the Hazelton Group

#### Emplacement of magma through open system pipe to form E&L Intrusion

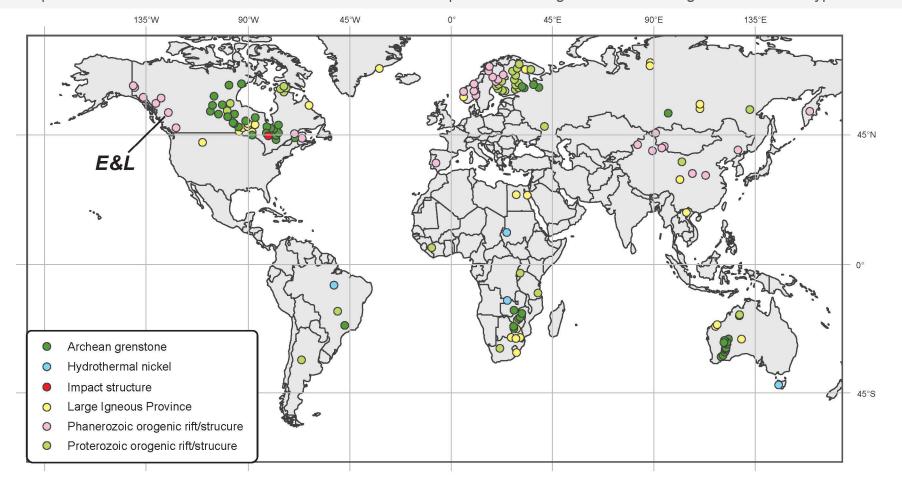


Schematic geological model showing expected relationships between E&L Intrusion and mineralization



## Global distribution of Nickel Sulfide ore deposits associated with orogenic settings like the Eskay Rift

- · Magmatic nickel sulfide tends to be found in association with mafic-ultramafic intrusions in rifted craton margins
- Far-field stress and collisional tectonic events often transform the primary setting into an orogen with multiphase deformation and variable degrees of sulfide remobilization
- Global examples of deposits once associated with rifts and now in the erosional products of orogens are shown together with other types of nickel deposits



### Acknowledgements:

Technical information in the summary has been assembled by the Garibaldi exploration team and special thanks go to Jeremy Hanson, Tom Baechler, Russ Ashton, Joe Zamudio, Mitchell Patitucci, Steve Regoci and Ray Goldie. Vektore supported the structural geology study. Drafting support was provided by Alex Gagnon.

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Jeremy Hanson, VP Exploration, Garibaldi Resources Corp., a Qualified Person as defined by NI-43-101, has supervised the preparation of, and has reviewed and approved of the disclosure of information in this presentation.

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