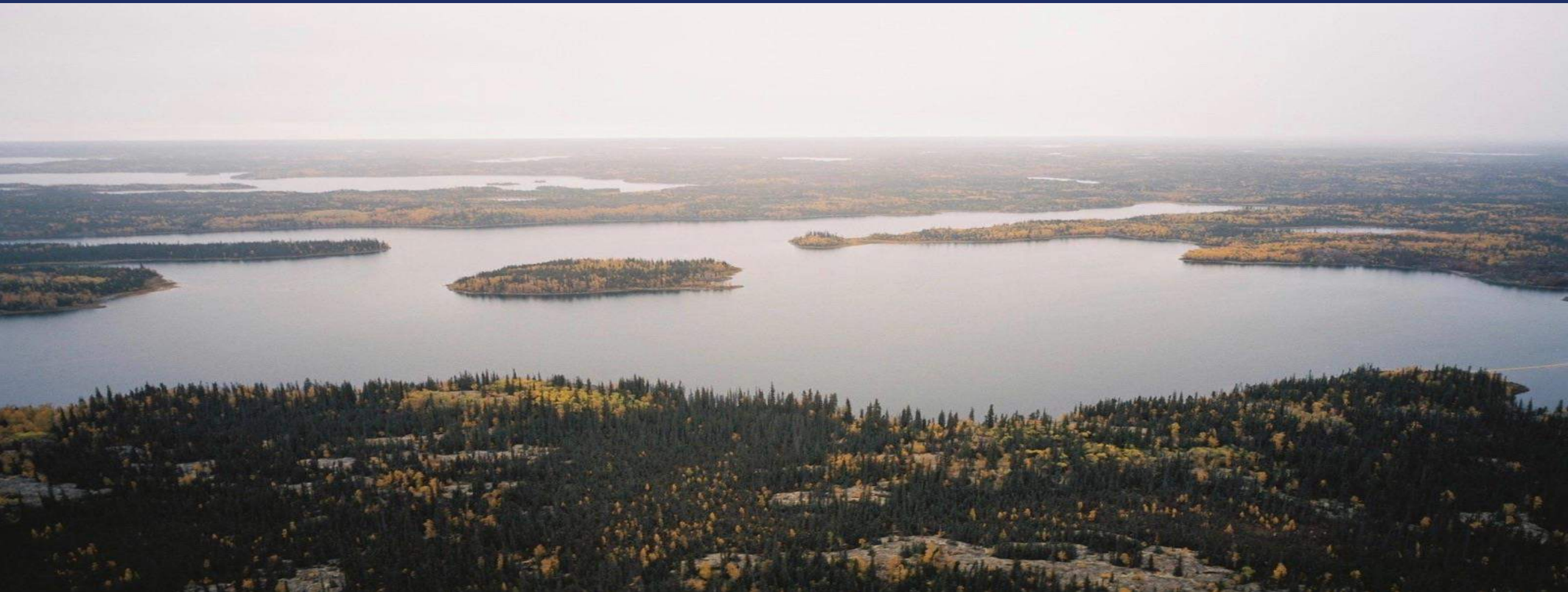
KENORLAND MINERALS

Xplor – Frotet-Regnault project



Introduction

- The Frotet Project is located in the Frotet-Evans Greenstone Belt ~100km north of Chibougamau in the Opatica geological sub-province

- Kenorland Minerals Ltd. and Sumitomo Metal Mining Canada Ltd. (SMMCL) have been exploring the Frotet project since 2018

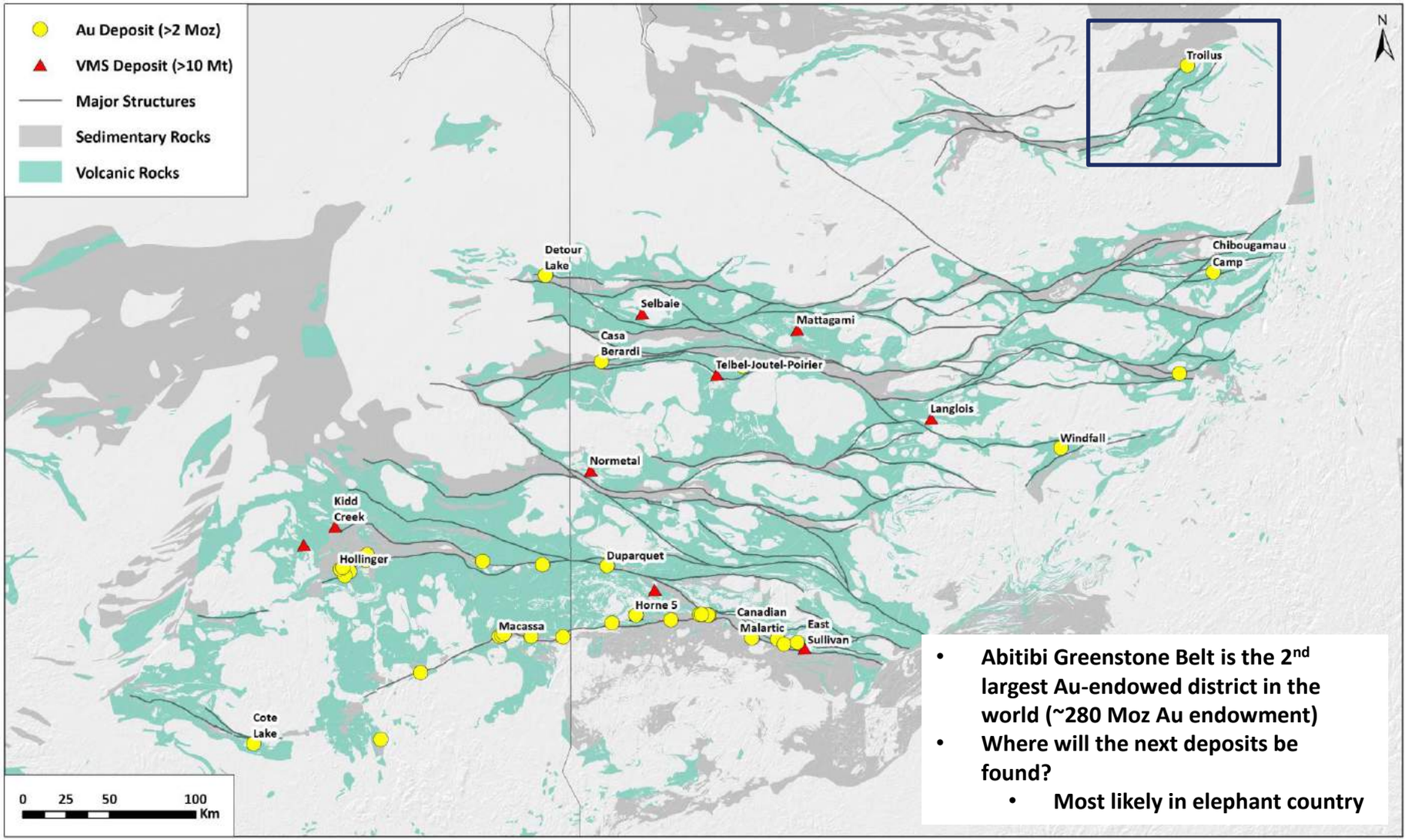
- Two seasons of systematic grassroots exploration lead to an initial 6,000m drill program in March, 2020

- Significant gold mineralization was intersected in 8 out of 15 holes, with highlights of:
  - 20RDD007 – 29.08m at 8.47 g/t Au
  - 20RDD002 – 3.75m at 16.06 g/t Au
  - 20RDD015 – 4.93m at 9.59 g/t Au
  - 20RDD012 – 5.44m at 5.94 g/t Au
  - 20RDD004 – 2.59m at 9.89 g/t Au

- A follow-up 1,800m drill program was completed in summer of 2020, which intersected a new structure:
  - 20RDD021A – 2.66m at 33.69 g/t Au

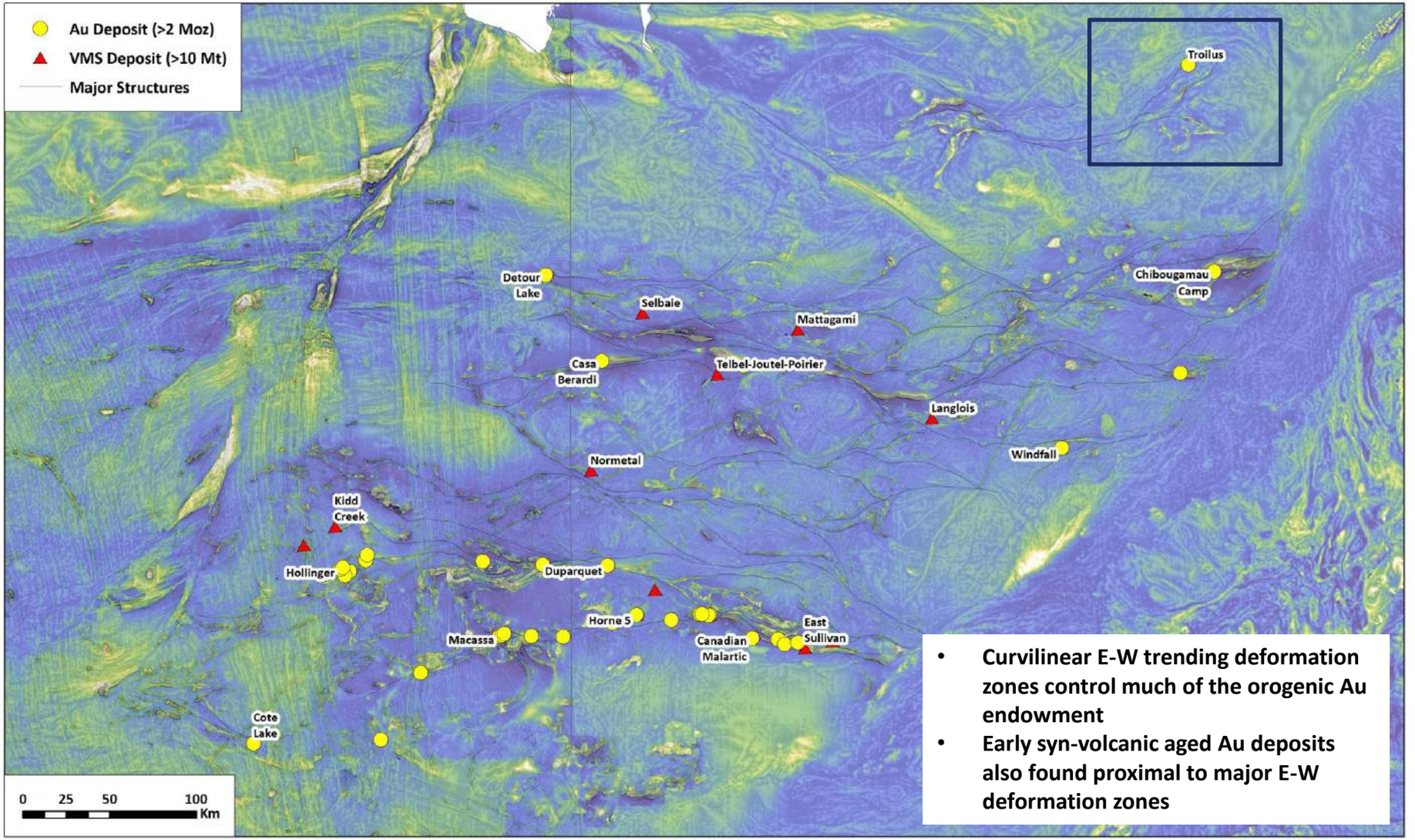
- This presentation will explore the following aspects:
  - Initial land selections
  - Exploration programs
  - Drill targeting
  - Results & controls
  - Potential metallogenic models

Regional geology



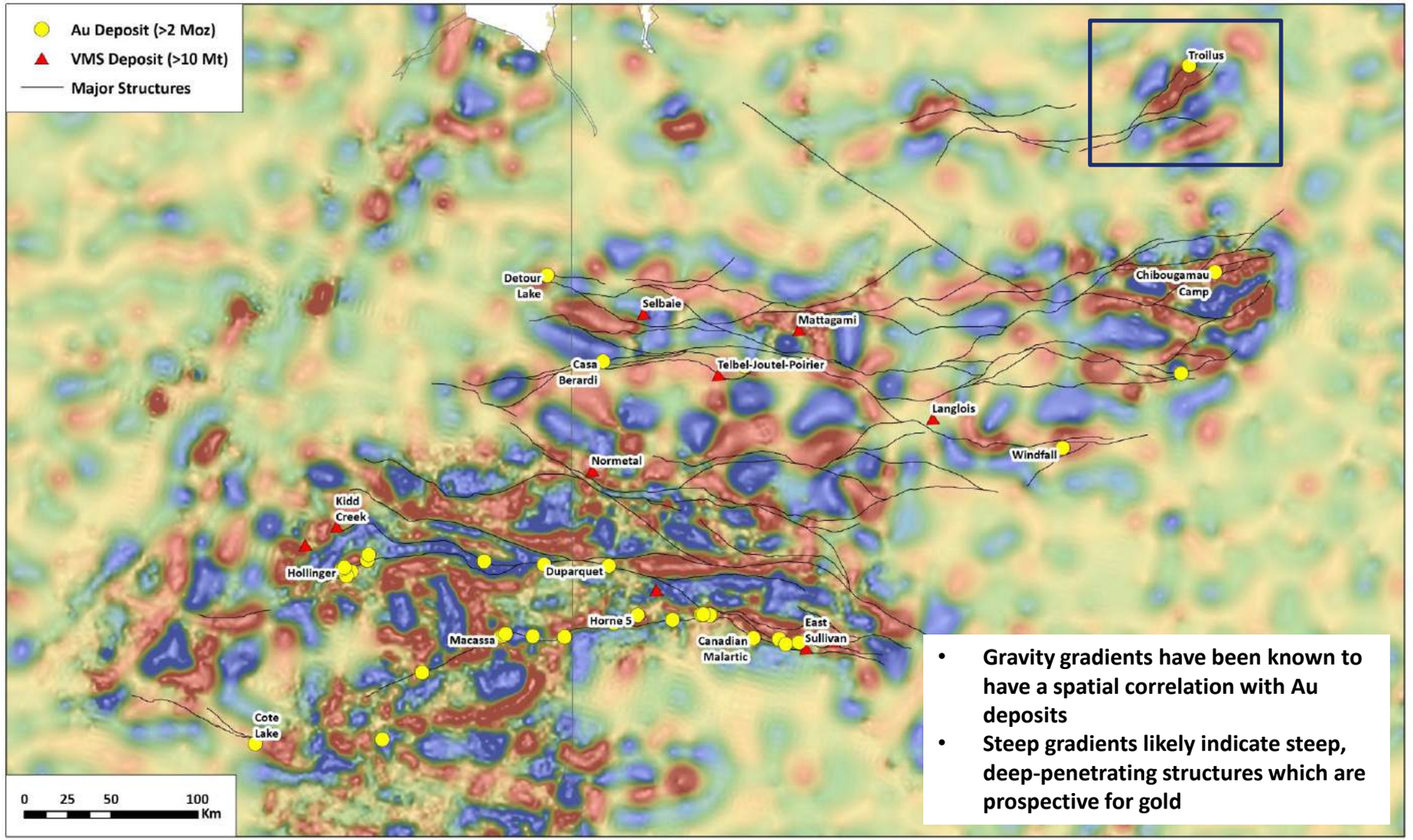
- Abitibi Greenstone Belt is the 2nd largest Au-endowed district in the world (~280 Moz Au endowment)
- Where will the next deposits be found?
  - Most likely in elephant country

Magnetics



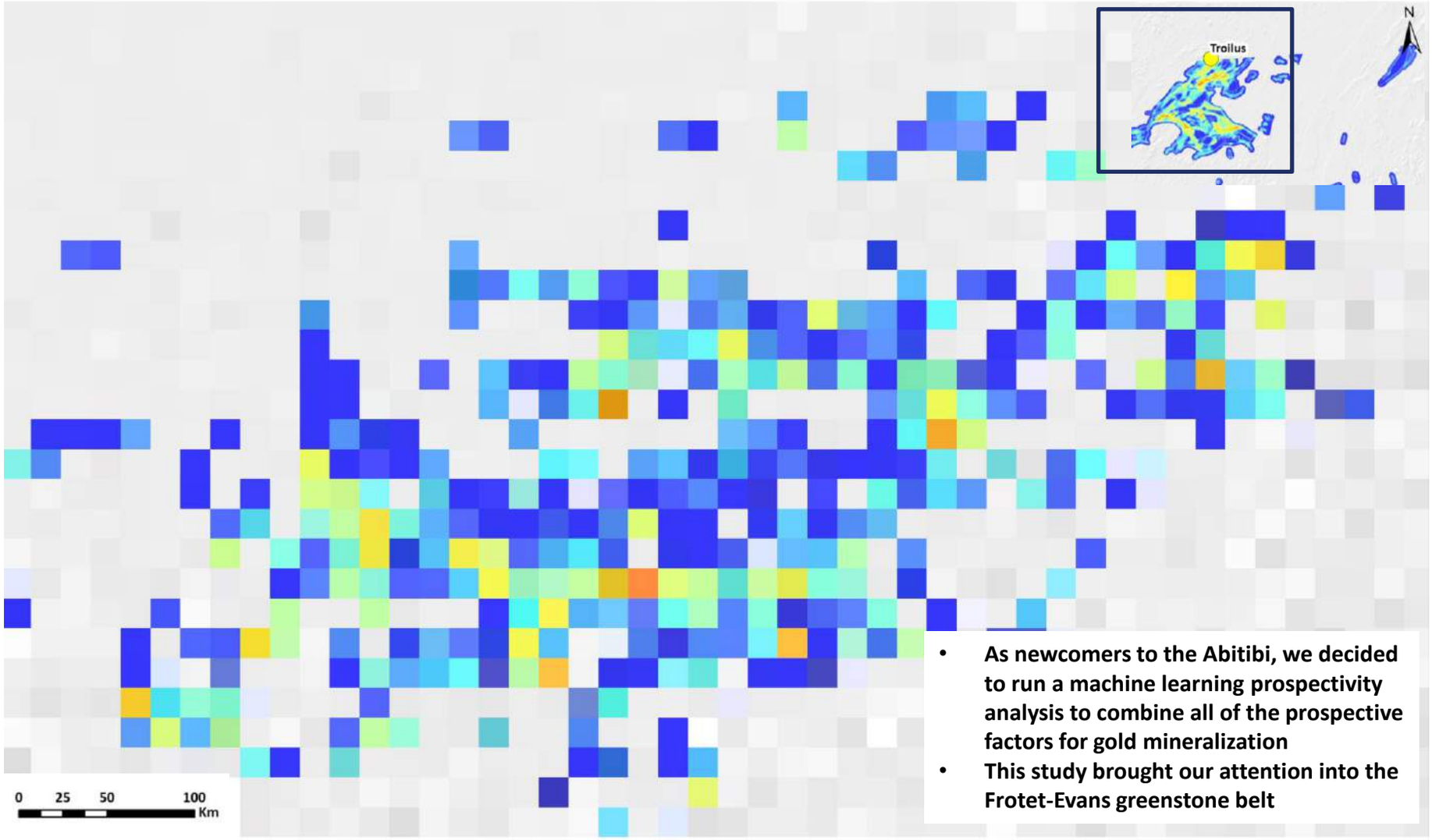
- Curvilinear E-W trending deformation zones control much of the orogenic Au endowment
- Early syn-volcanic aged Au deposits also found proximal to major E-W deformation zones

Gravity 50km high-pass Bouger



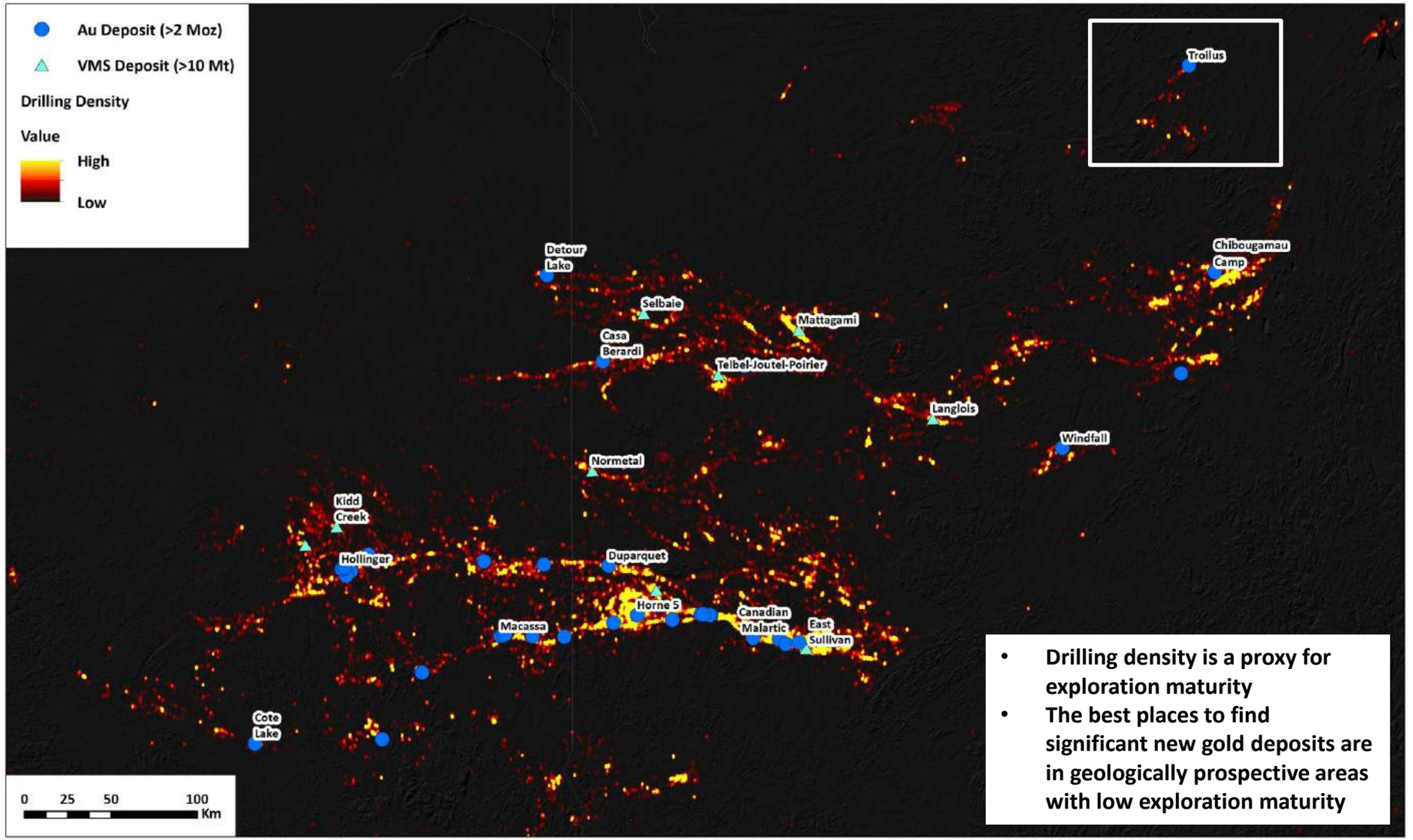
- **Gravity gradients have been known to have a spatial correlation with Au deposits**
- **Steep gradients likely indicate steep, deep-penetrating structures which are prospective for gold**

Prospectivity



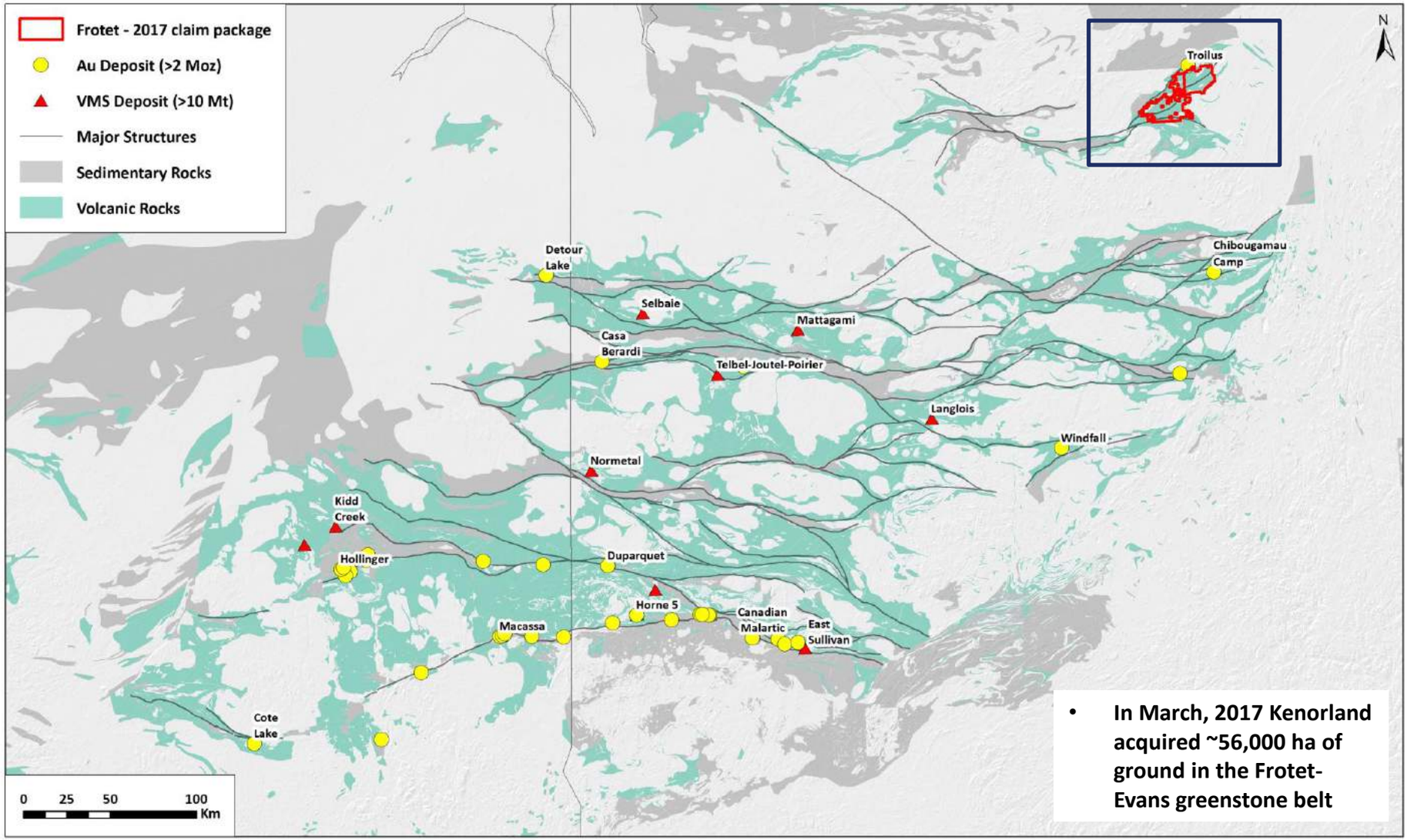
- As newcomers to the Abitibi, we decided to run a machine learning prospectivity analysis to combine all of the prospective factors for gold mineralization
- This study brought our attention into the Frotet-Evans greenstone belt

Drilling density



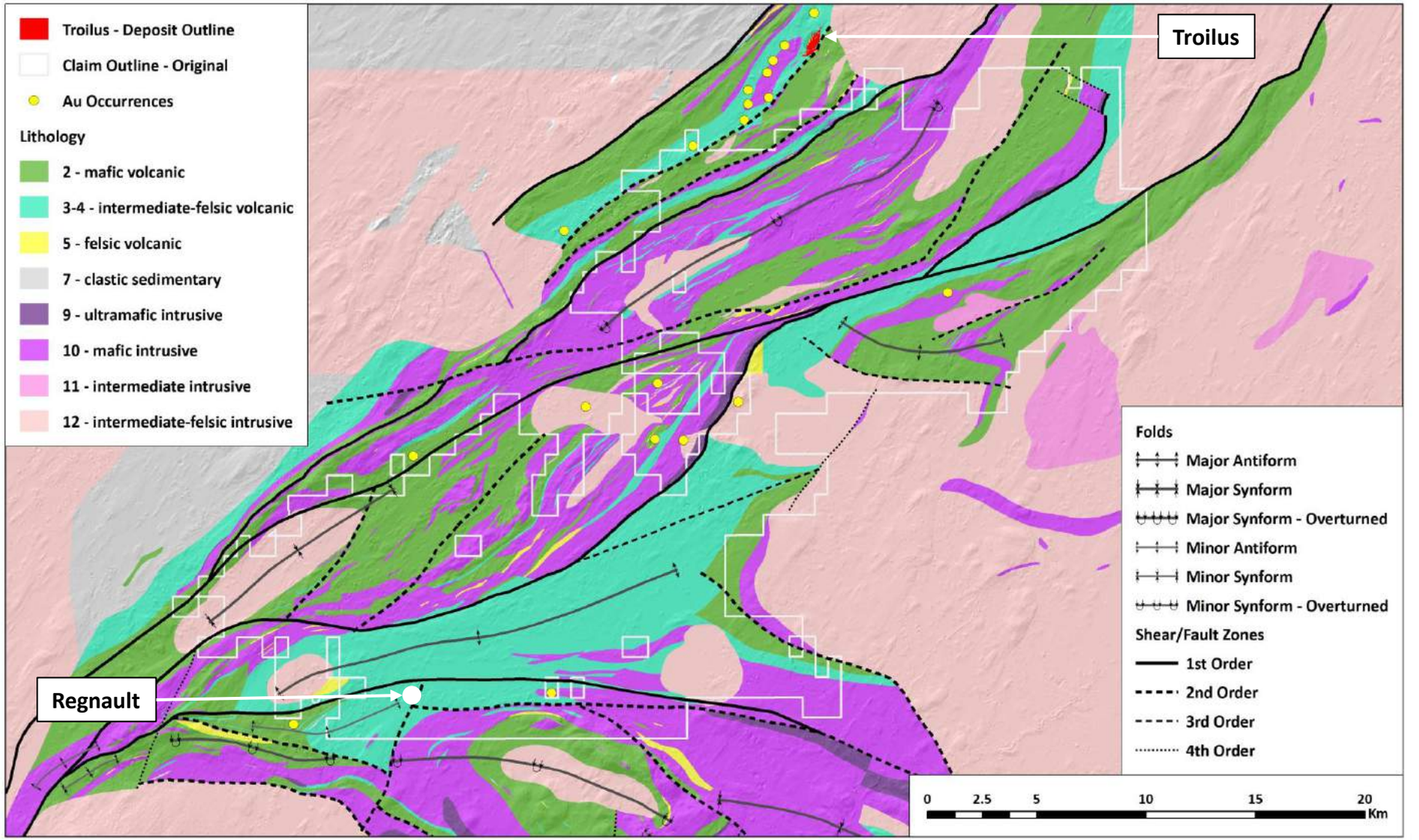
- Drilling density is a proxy for exploration maturity
- The best places to find significant new gold deposits are in geologically prospective areas with low exploration maturity

Claim acquisition

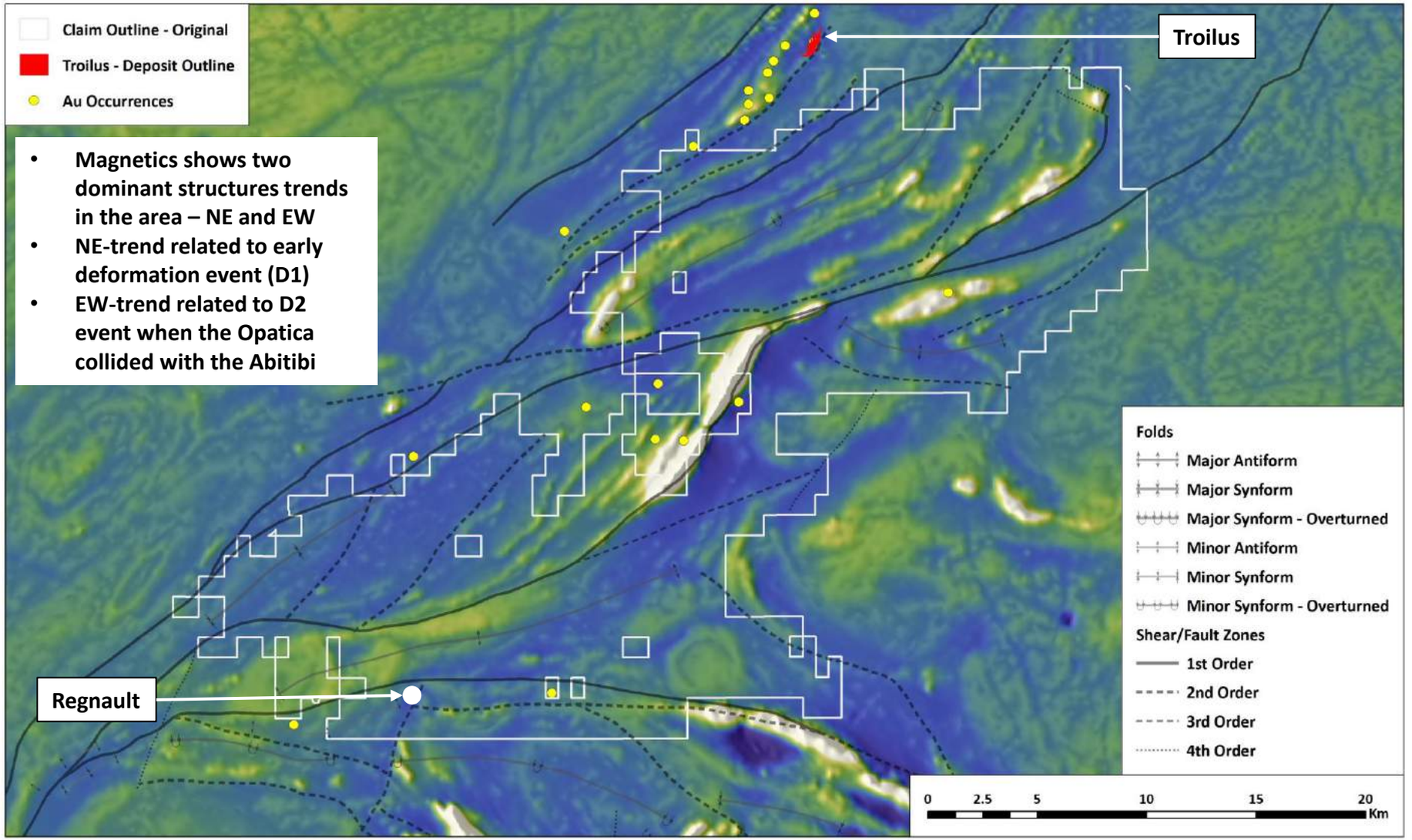


- In March, 2017 Kenorland acquired ~56,000 ha of ground in the Frotet-Evans greenstone belt

Regional geology Frotet-Evans greenstone belt

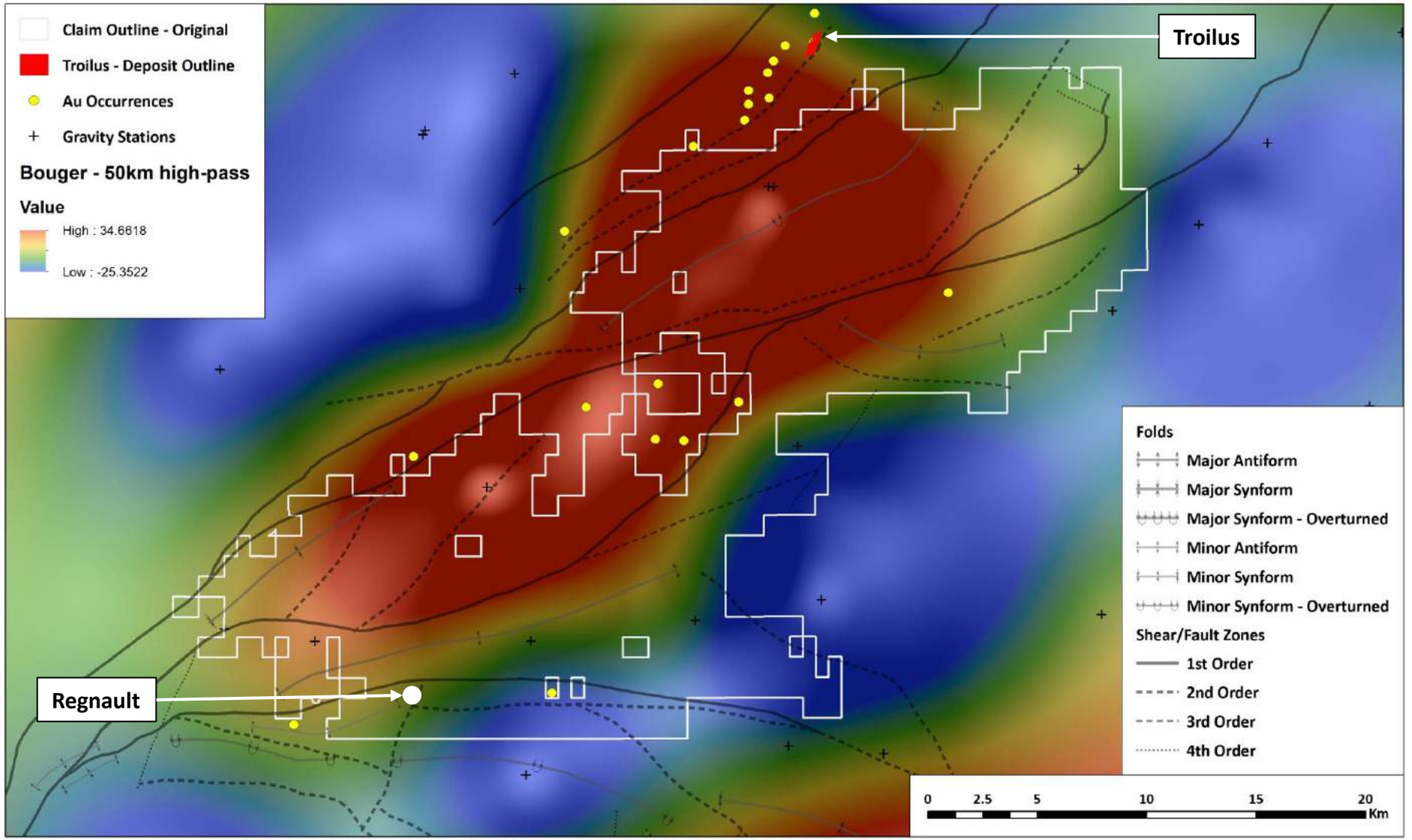


Magnetics

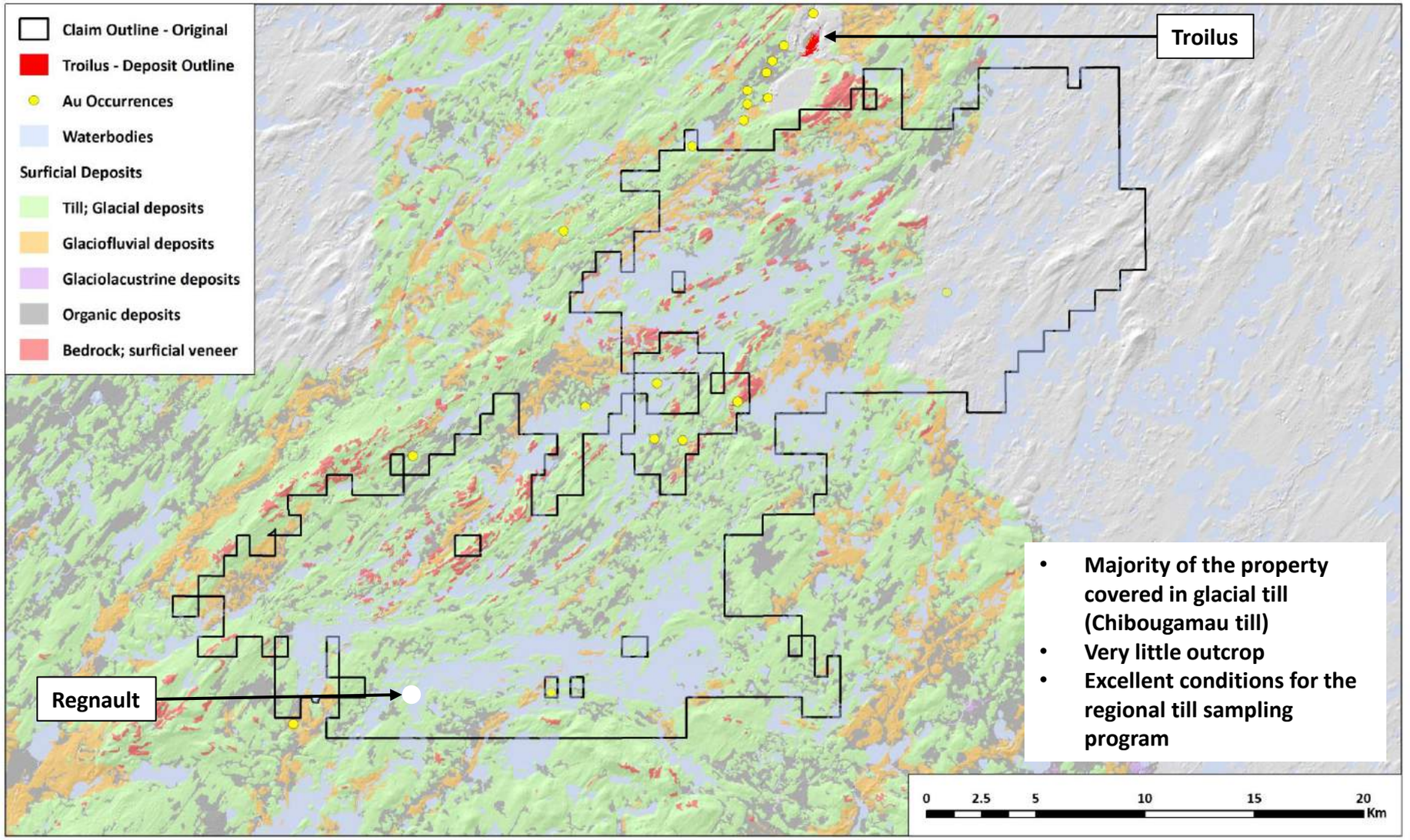


- Magnetics shows two dominant structures trends in the area – NE and EW
- NE-trend related to early deformation event (D1)
- EW-trend related to D2 event when the Opatica collided with the Abitibi

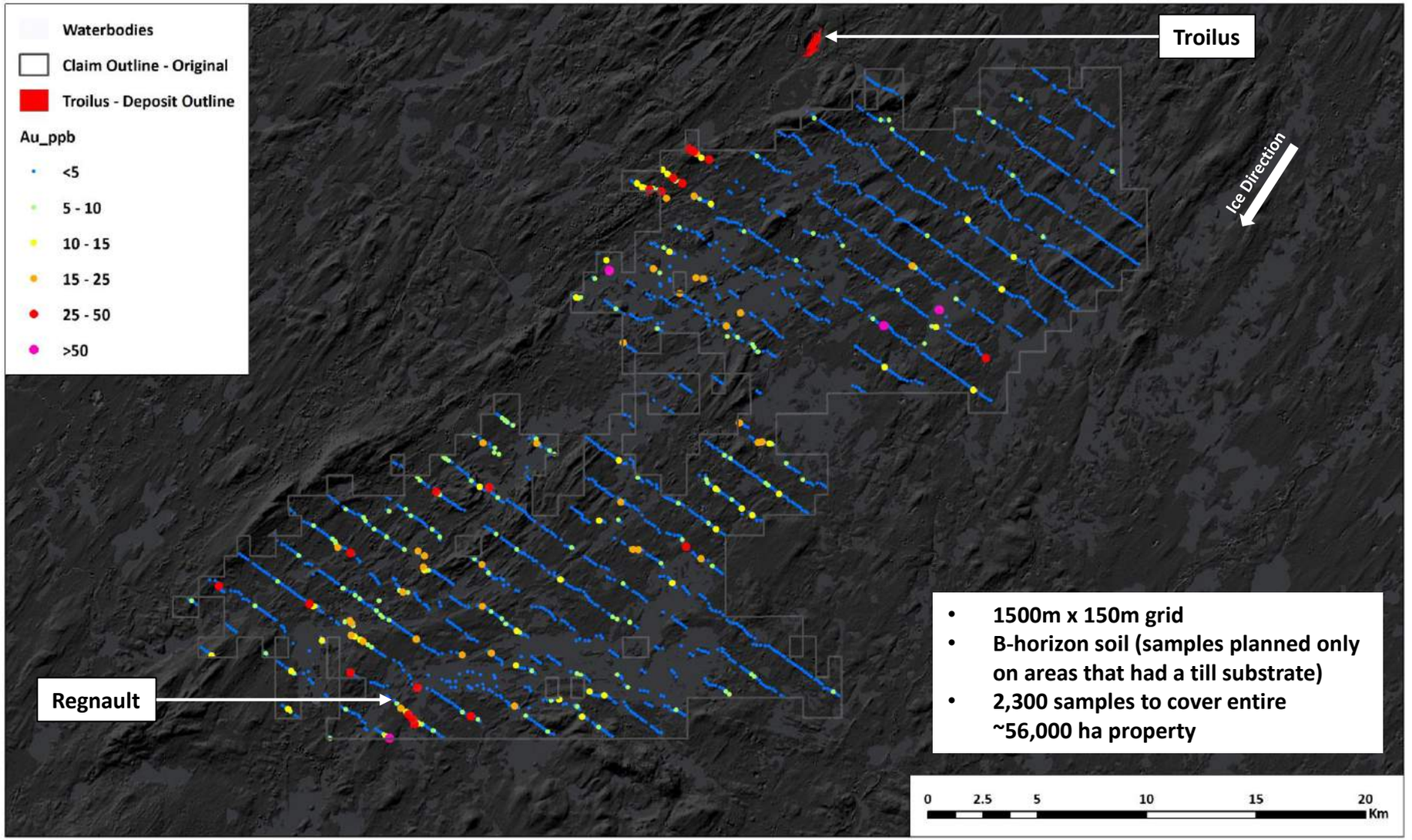
Gravity


Claim Outline - Original
Troilus - Deposit Outline
Au Occurrences
Gravity Stations
Bouger - 50km high-pass
Value
High : 34.6618
Low : -25.3522
Troilus
Regnault
Folds
Major Antiform
Major Synform
Major Synform - Overturned
Minor Antiform
Minor Synform
Minor Synform - Overturned
Shear/Fault Zones
1st Order
2nd Order
3rd Order
4th Order
0
2.5
5
10
15
20
Km

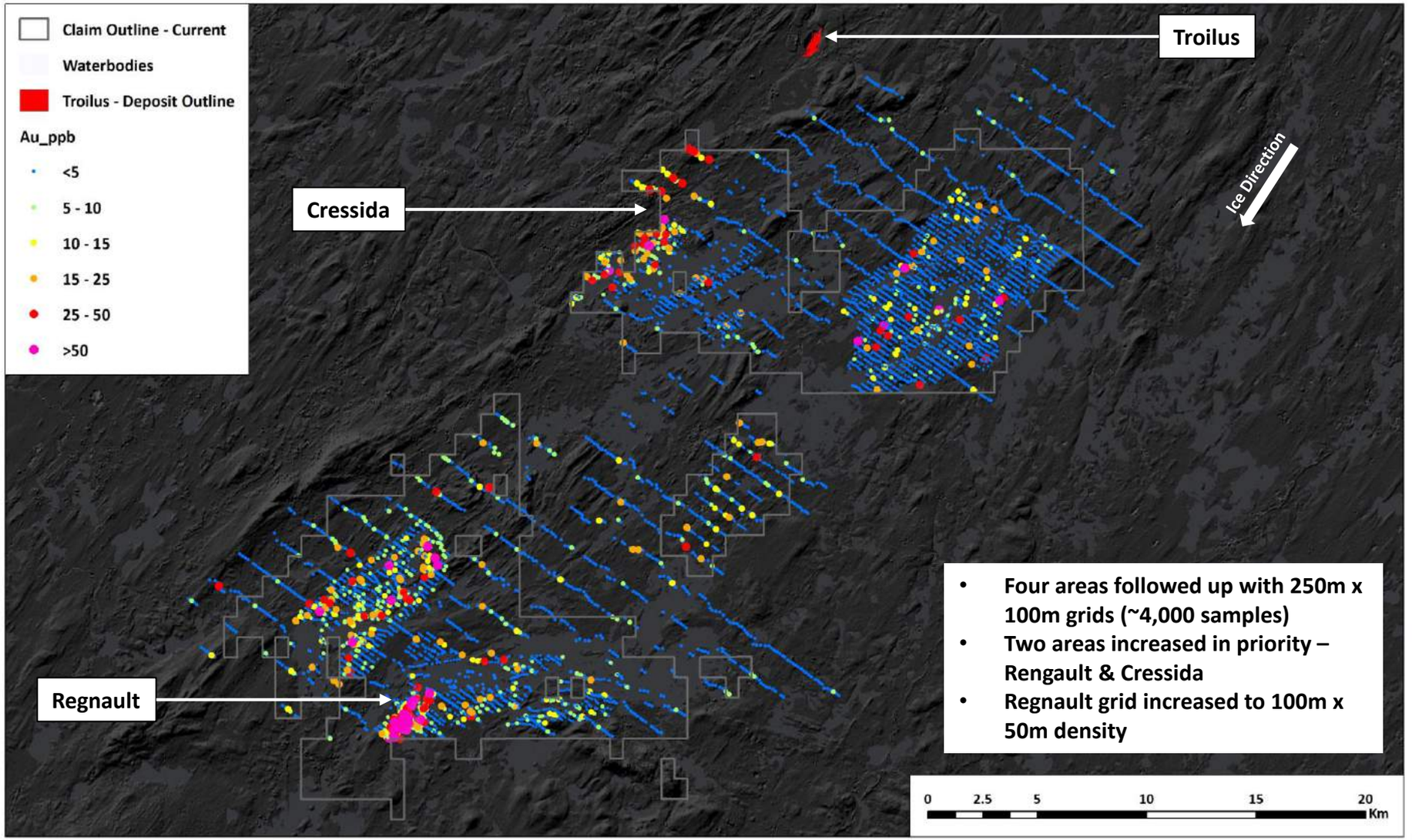
Surficial geology



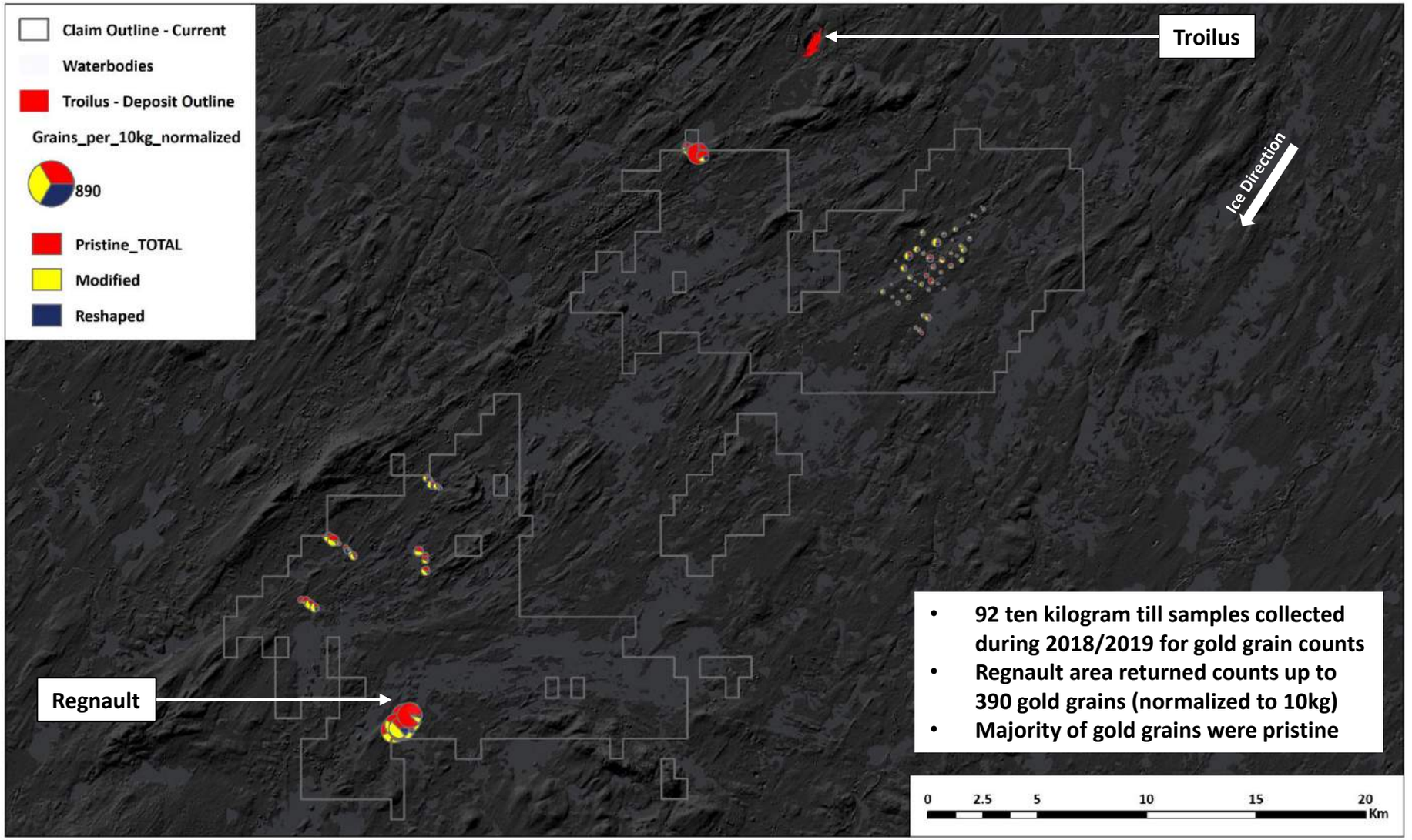
B-horizon soil sampling (till substrate) 2018



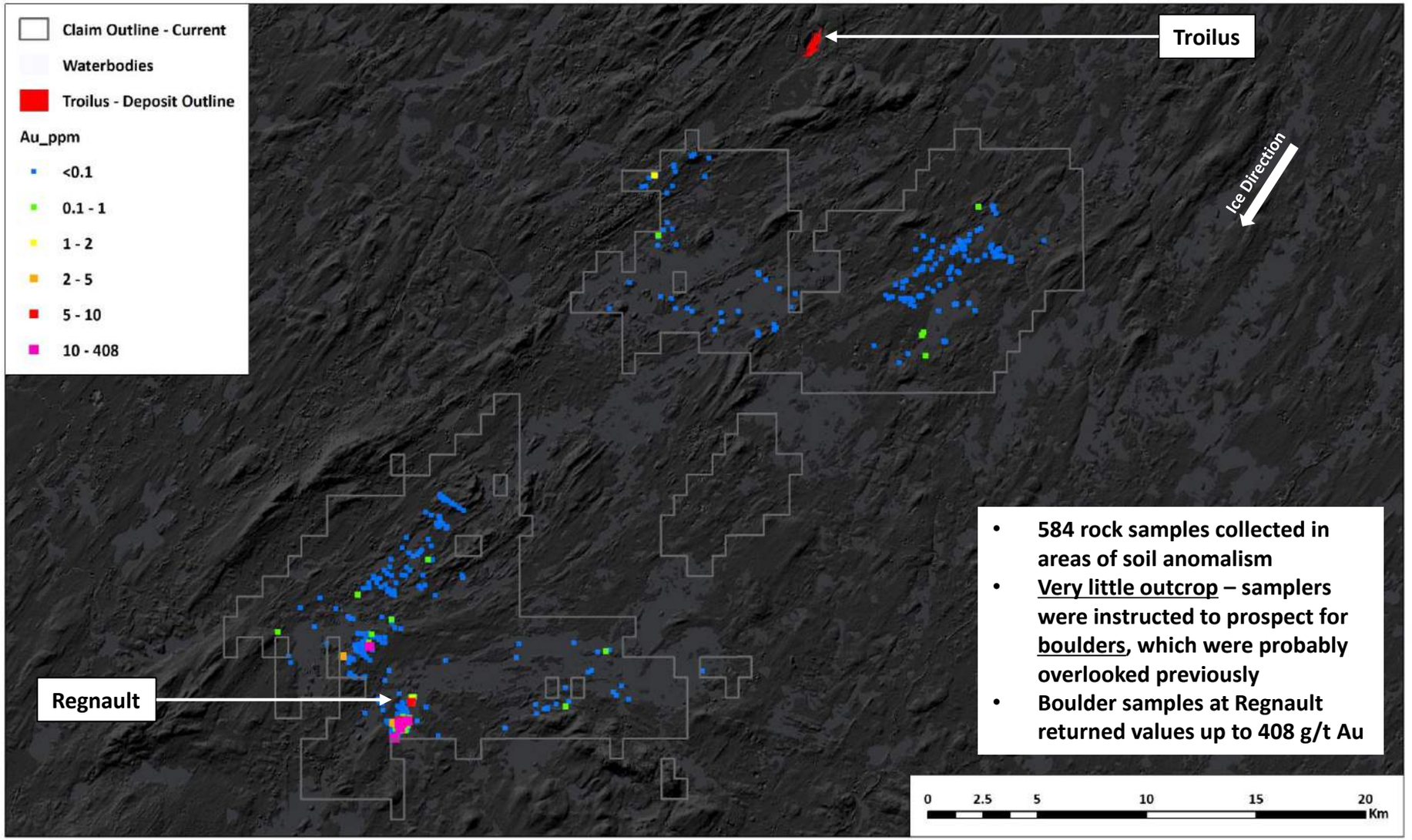
B-horizon soil sampling (till substrate) 2019



Till sampling 10kg samples for gold grain counts



Prospecting



- 584 rock samples collected in areas of soil anomalism
- Very little outcrop – samplers were instructed to prospect for boulders, which were probably overlooked previously
- Boulder samples at Regnault returned values up to 408 g/t Au

Prospecting

Vein – 408 g/t Au

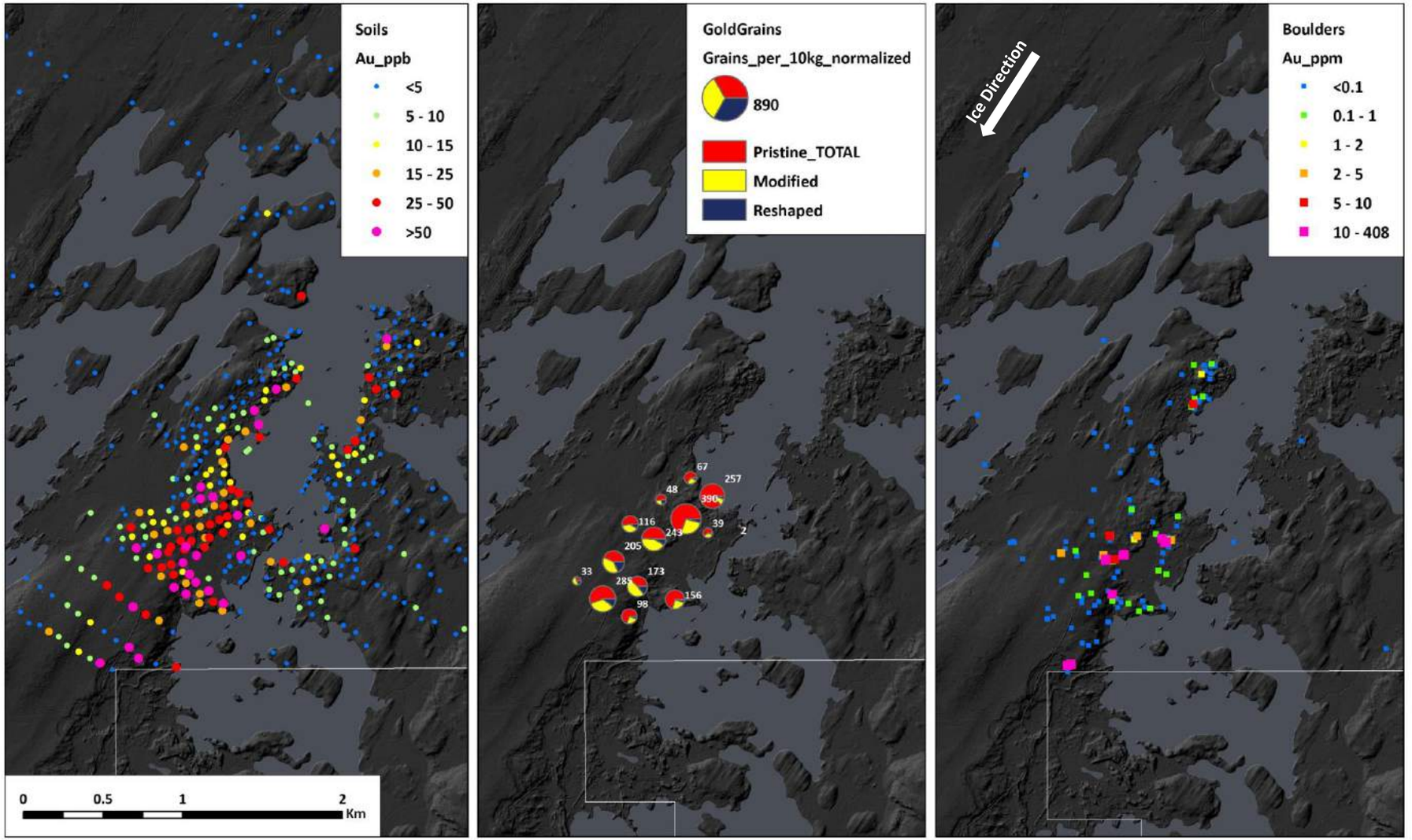
Vein + Wallrock – 25.7 g/t Au

Wallrock – 2.69 g/t Au

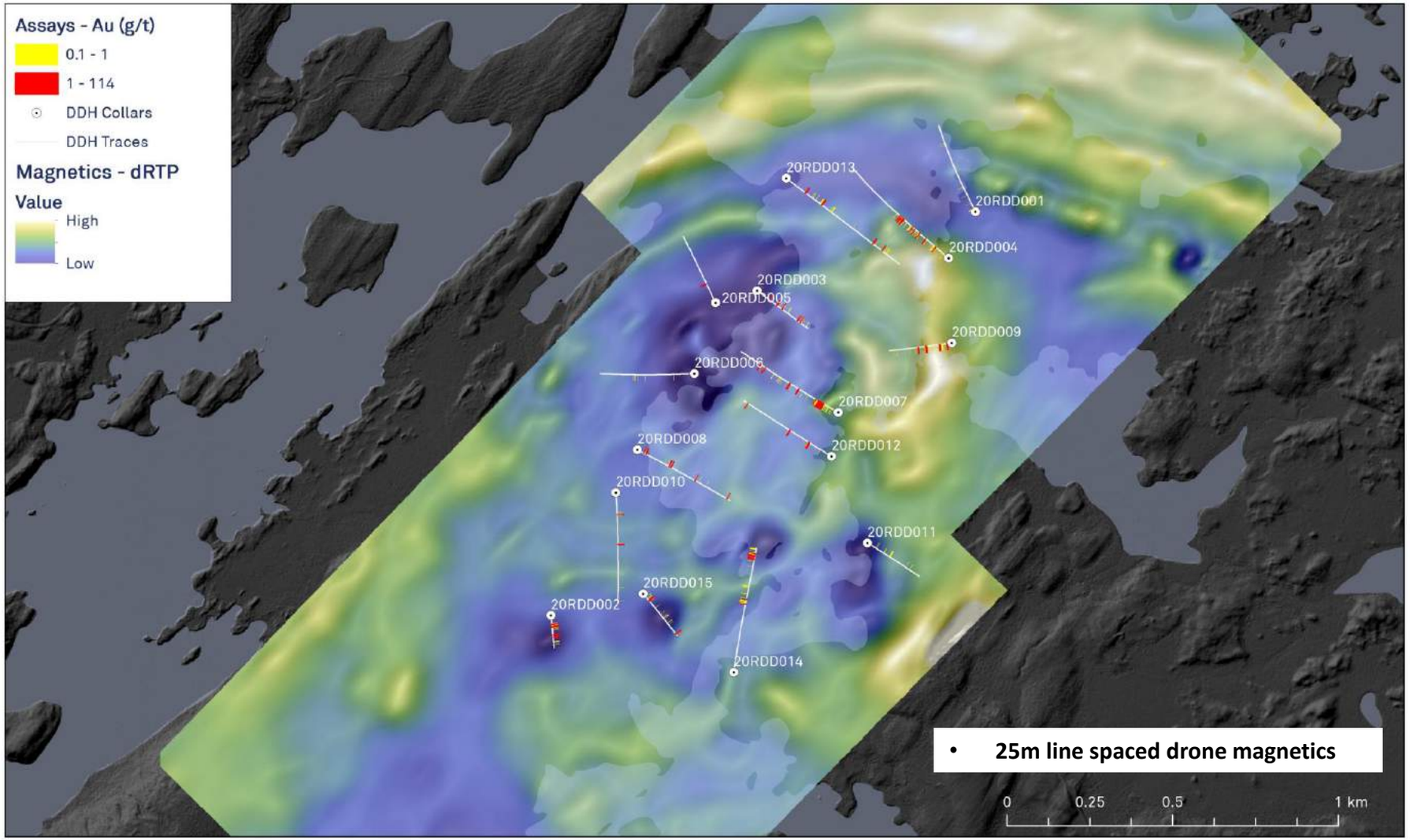
Prospecting

- Au mineralization hosted in quartz veins within a strongly biotite-silica - altered diorite with ~2-5% disseminated pyrite
- High grade mineralization also hosted in silicified intermediate volcanics
- Troilus is hosted in a biotite-altered diorite similar to the Regnault target

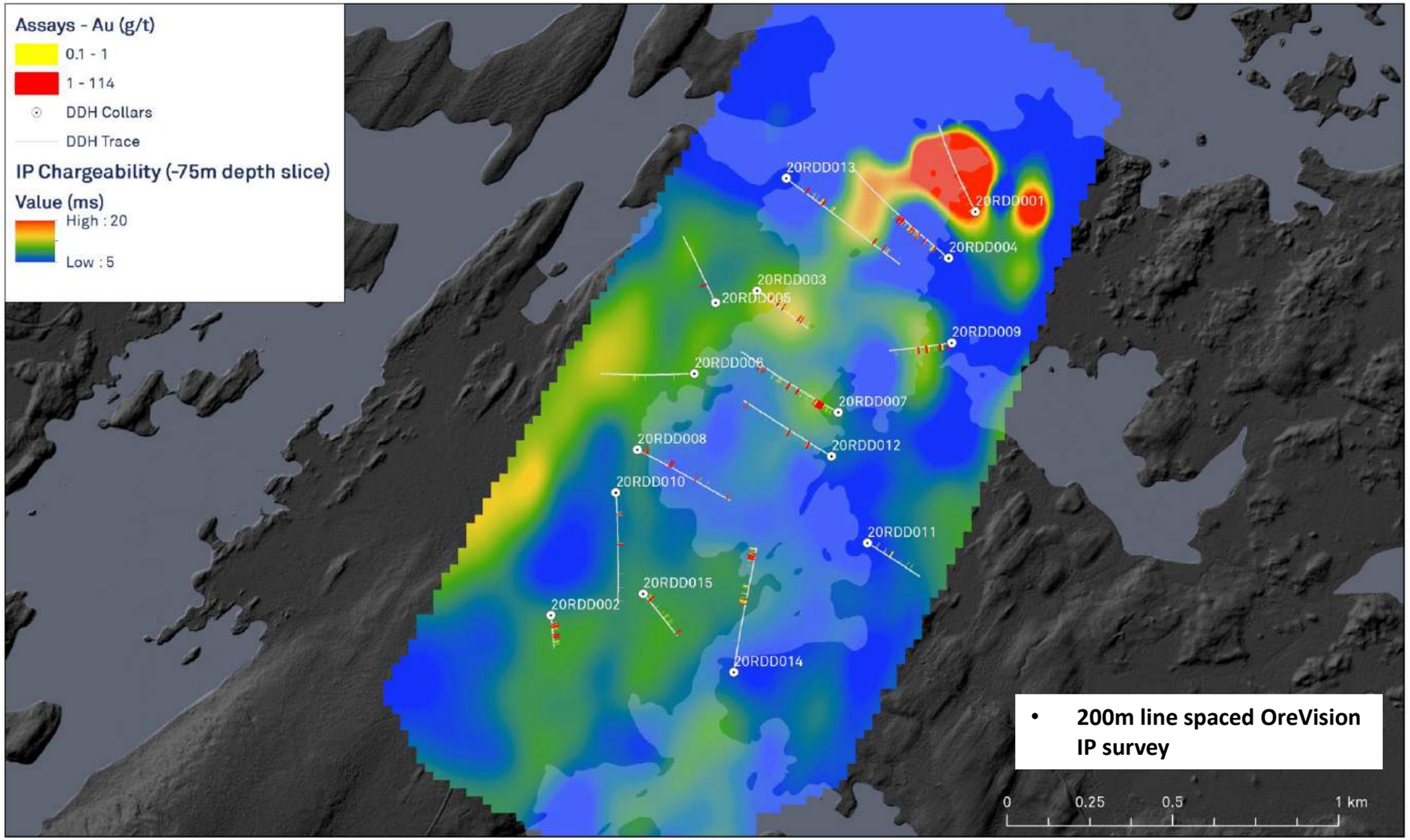
Regnault Geochemistry comparison



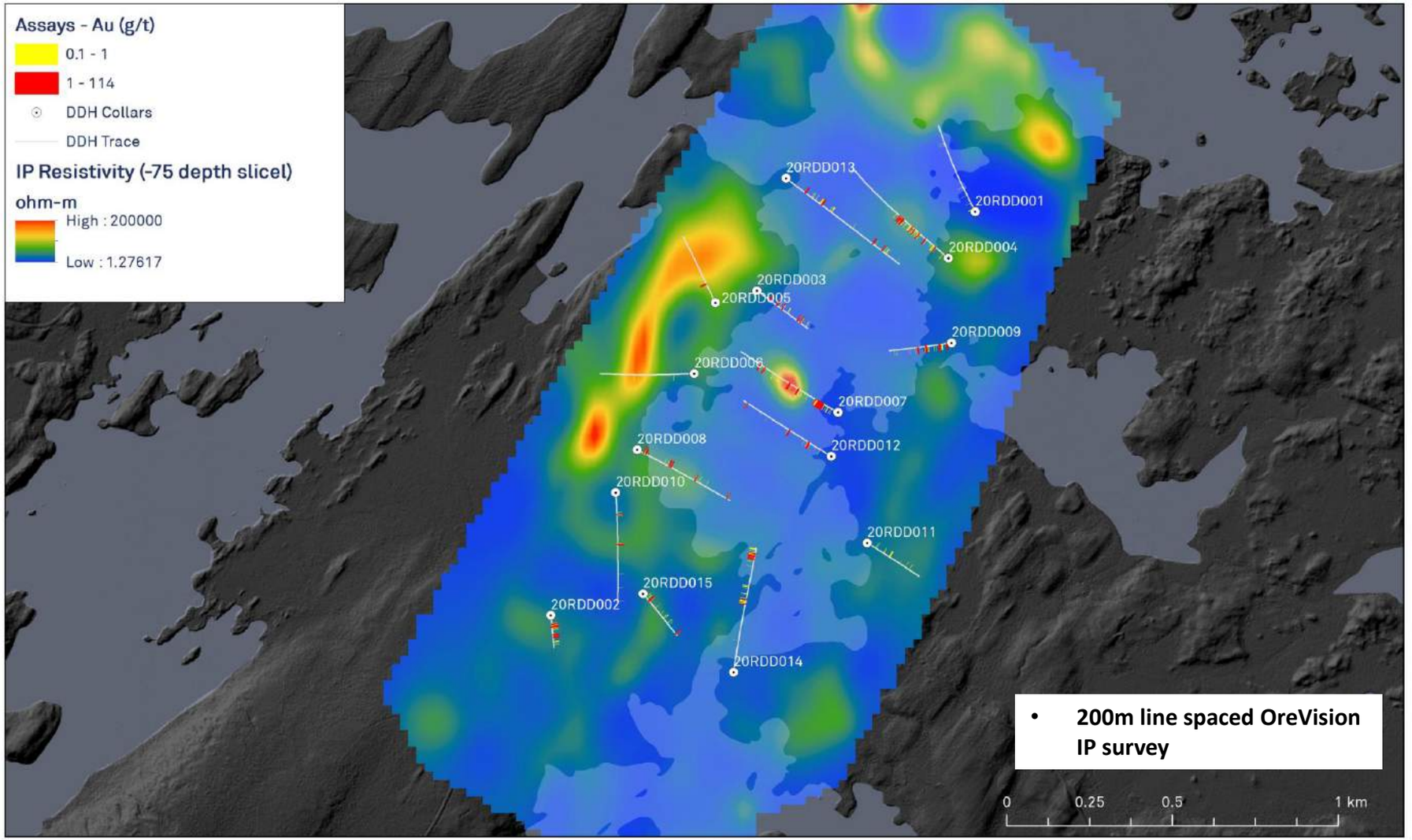
Magnetics dRTP on horizontal derivative



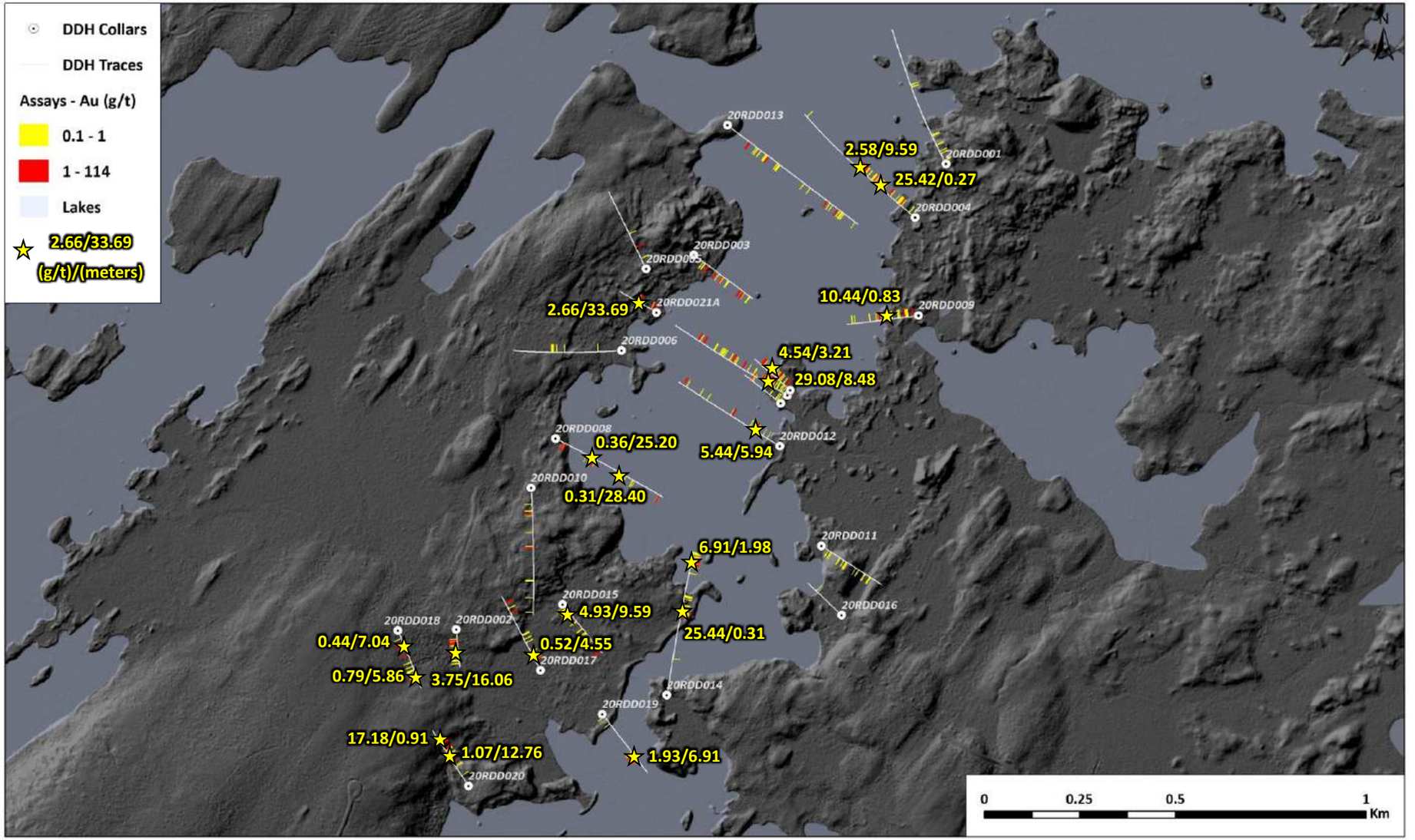
Chargeability 75m below surface



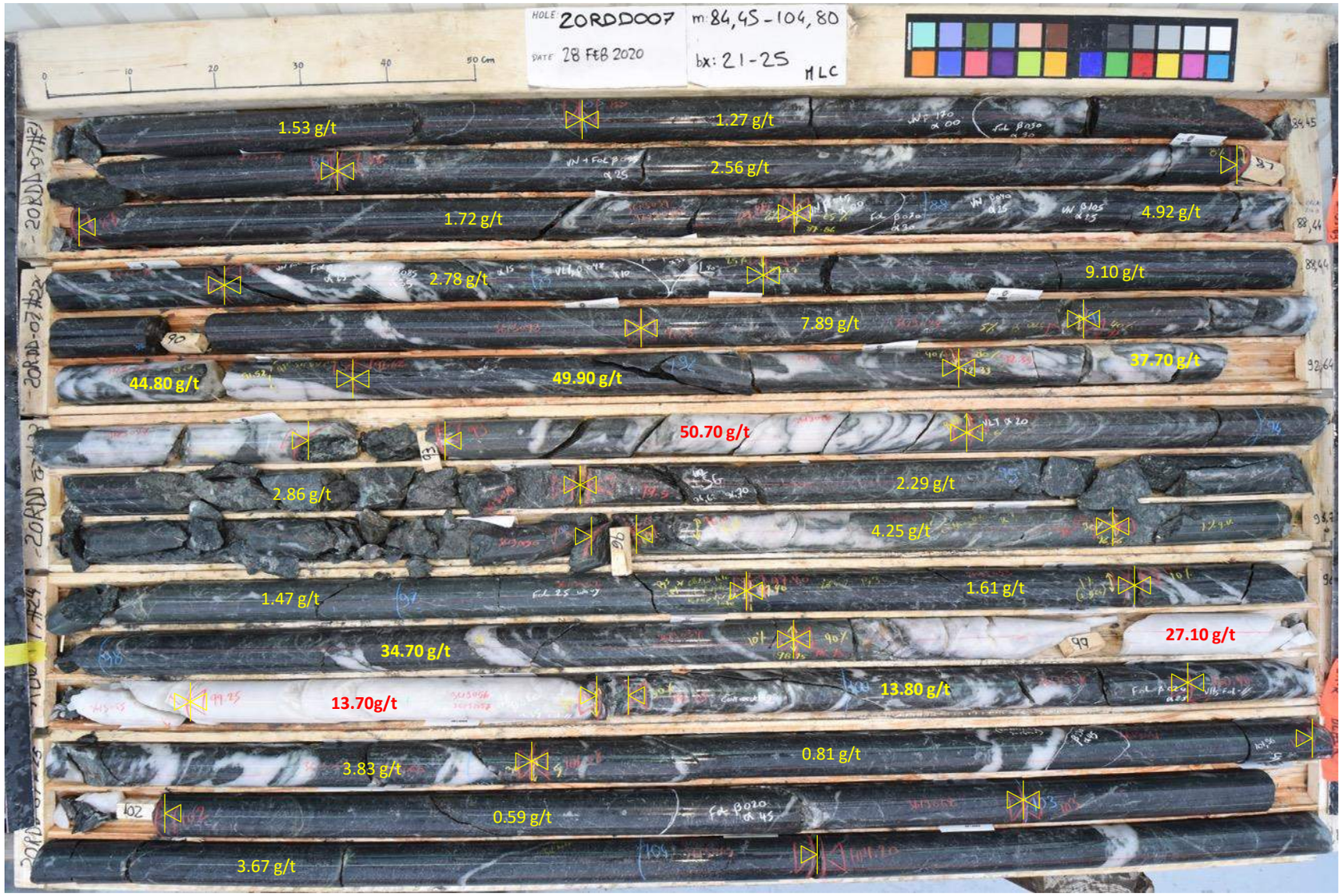
Resistivity 75m below surface



Regnault Drill intersect highlights



20RDD007 29m @ 8.48 g/t Au including 11m @ 18 g/t Au

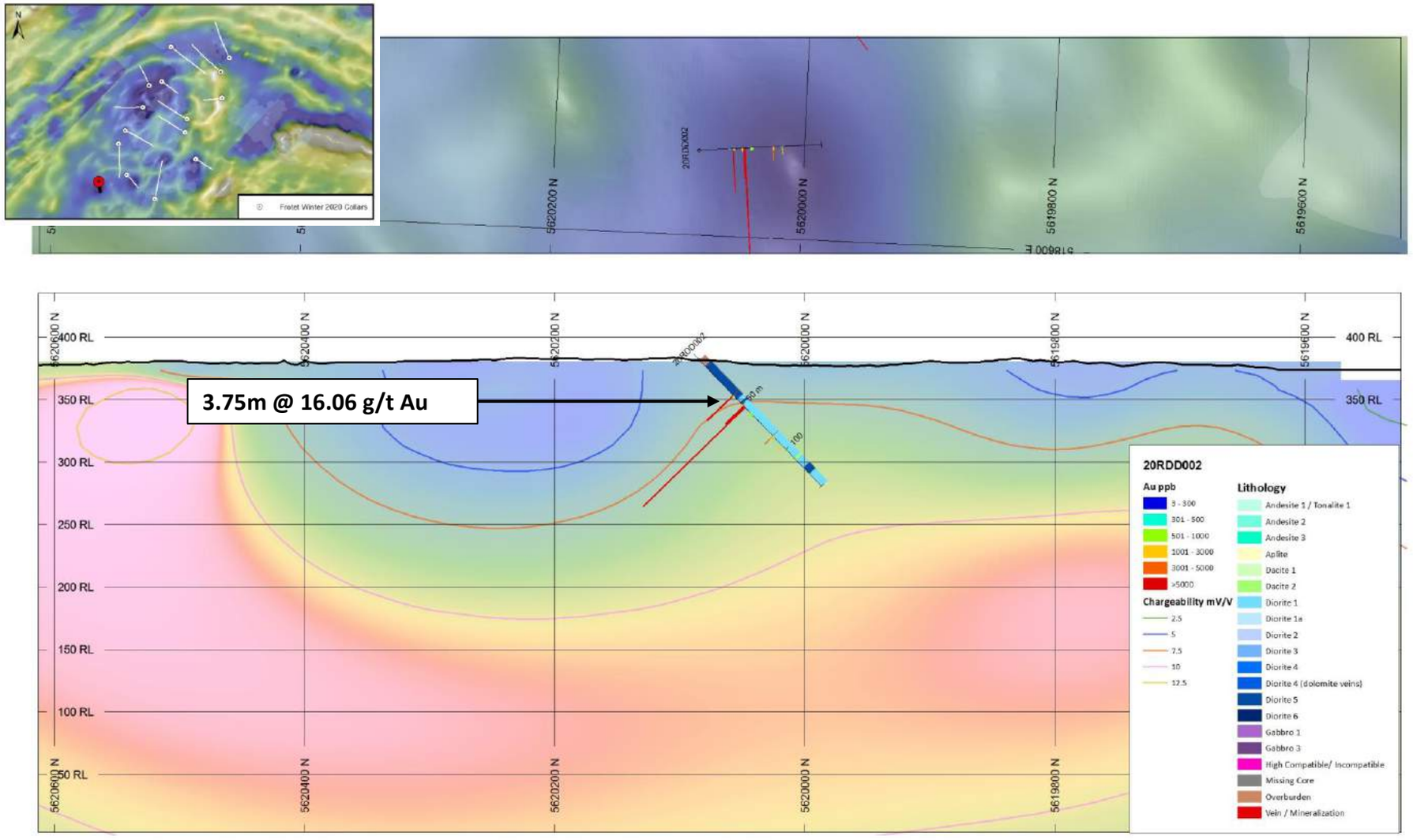


20RDD015 4.93m @ 9.59 g/t Au

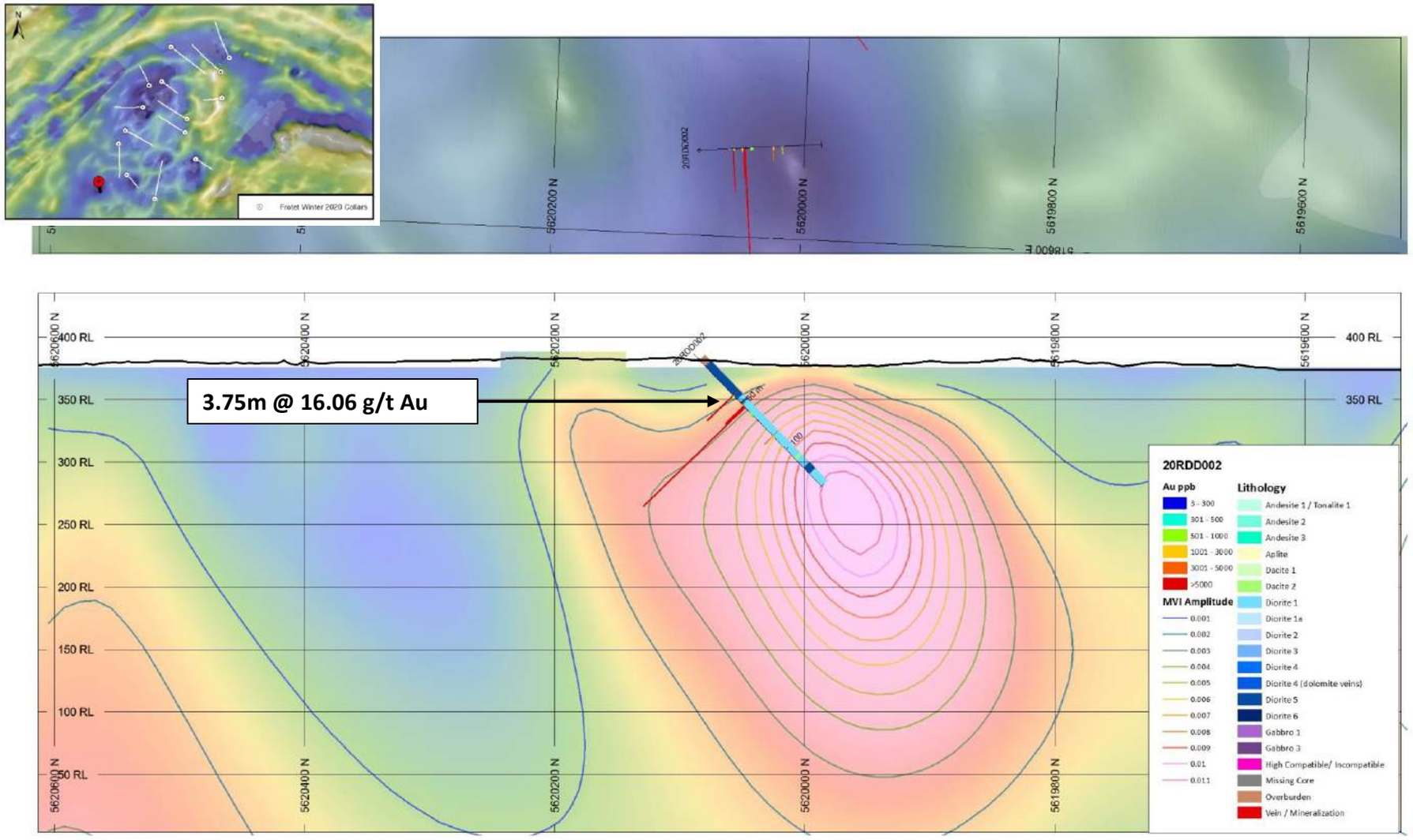
20RDD002 3.75m @ 16.06 g/t Au

20RDD021A 2.66m @ 33.69 g/t Au

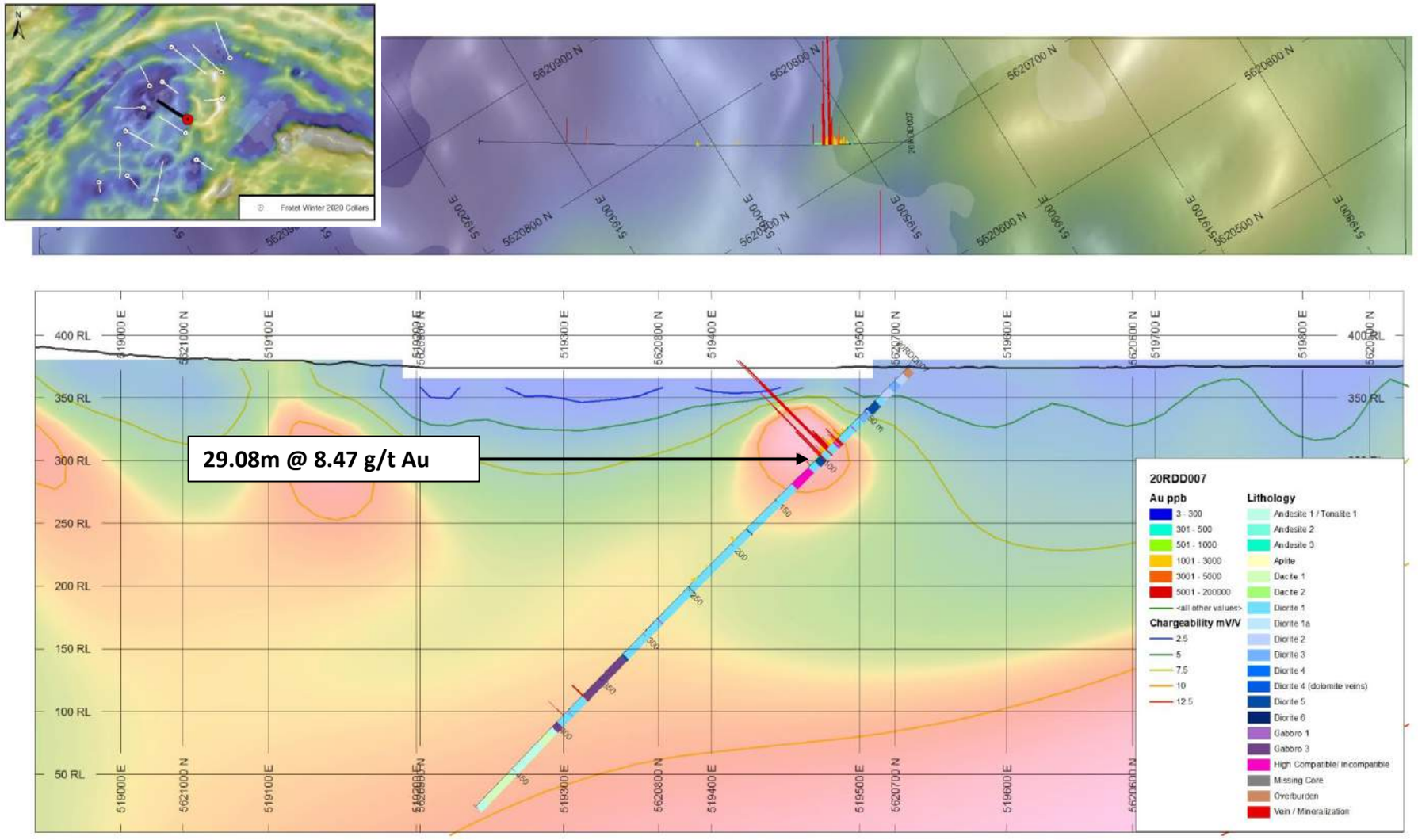
20RDD002 Chargeability



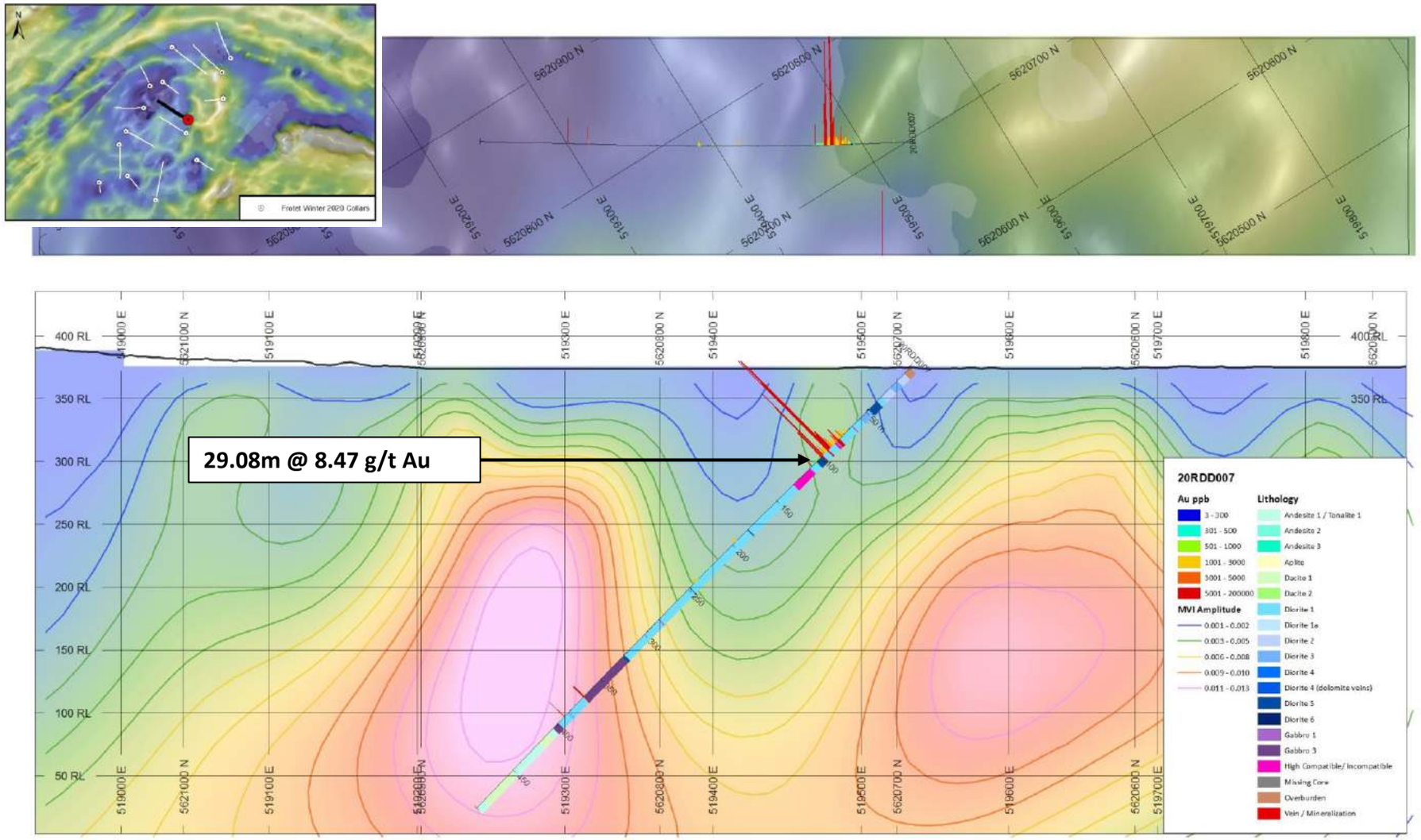
20RDD002 Magnetic inversion



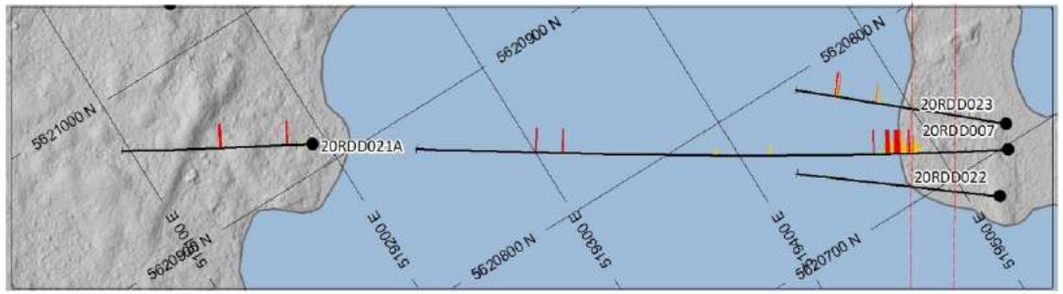
20RDD007 Chargeability

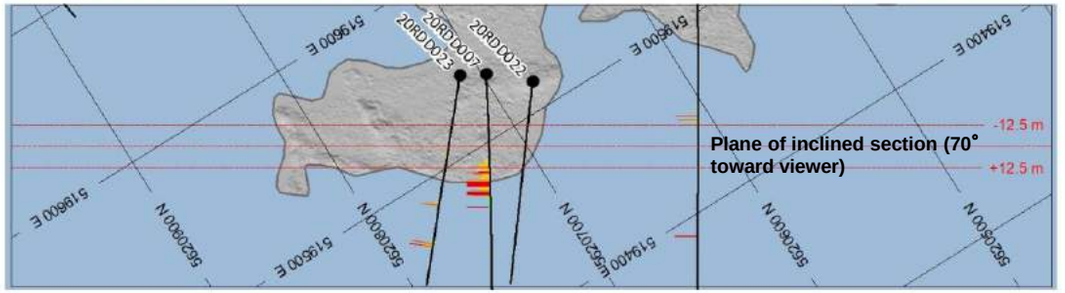


20RDD007 Magnetic inversion

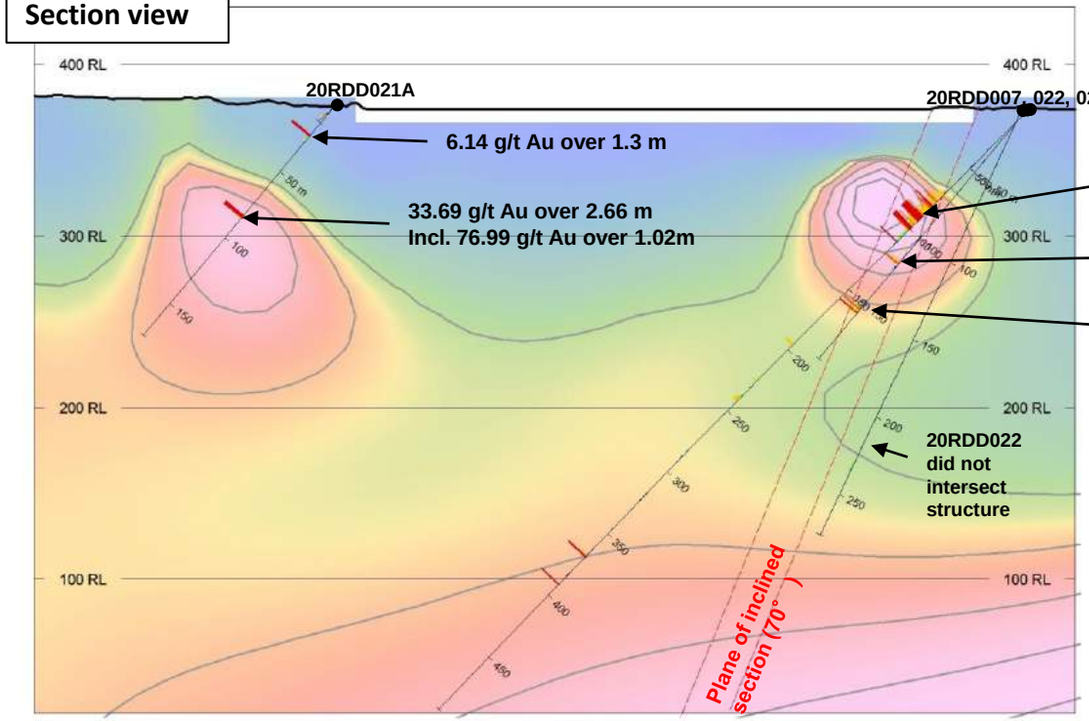


20RDD007 – 20RDD021A Chargeability

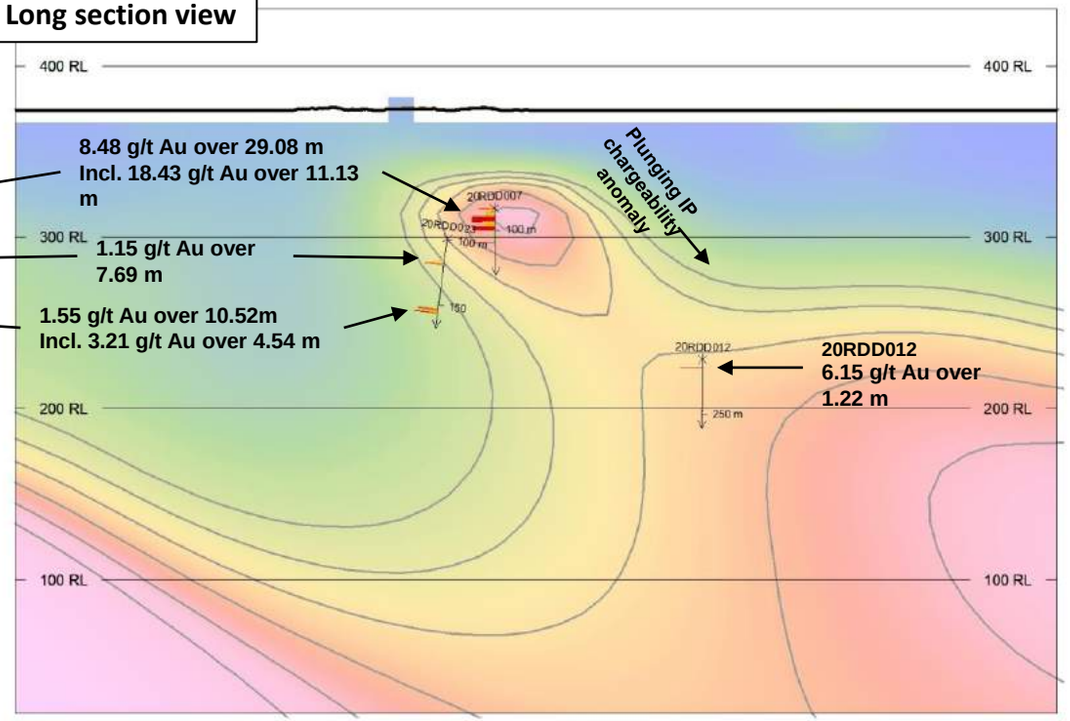




Section view



Long section view



Geological attributes

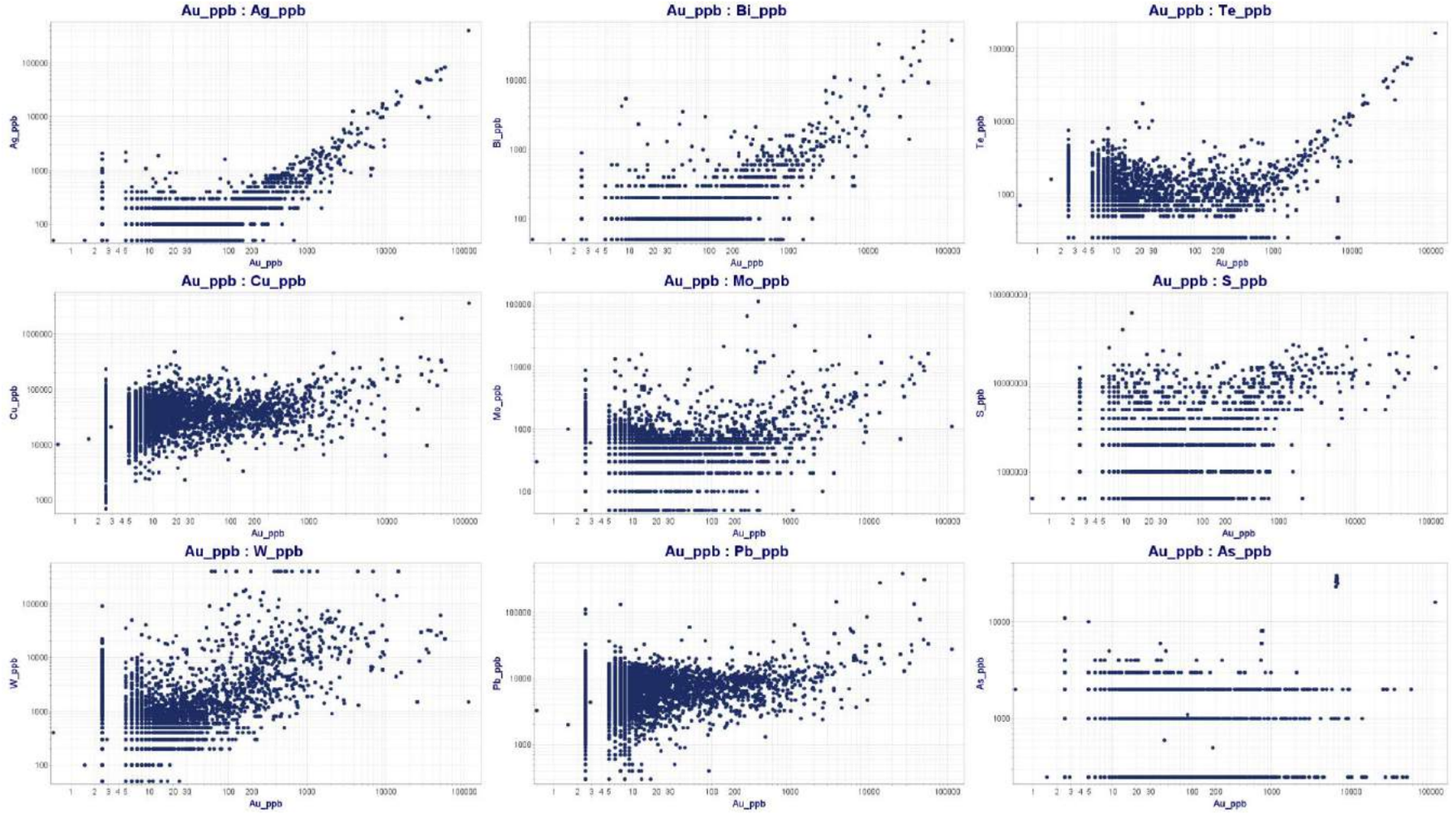
Hole ID	From (m)	To (m)	Length (m)	Au (ppm)	Metal Signature	Alteration Mineralogy	Sulphide %	Sulphide Minerals	Vein %	Vein Composition	Strain Intensty	Lithology 1	Lithology 2
20RDD002	49.31	53.06	3.75	16.06	Au-Ag-Te-Bi-W-Mo +/- Cu	bt-cc	3	py	15	qtz-cc	0	Diorite 5	Diorite 1
20RDD004	255.00	270.50	15.50	2.09	Au-Ag-Te-Bi-Mo	bt-sil	2	py	10	qtz	2	Diorite 1	Andesite 2
20RDD007	70.90	112.00	41.10	6.24	Au-Ag-Te-W-Bi-Cu-Mo-Pb	chl	3	py +/- cpy-gal	20	qtz-cc	3	Diorite 1	High compatible / incompatible
20RDD008	151.00	151.36	0.36	25.20	Au-Te-Ag-Bi-Cd-Cu	sil-cc-chl	2	py	30	qtz-cc	0	Diorite 1a	High compatible / incompatible
	160.12	160.43	0.31	28.40	Au-Te-Ag-Bi-Cd-Cu	sil-cc-chl	5	py	20	qtz-cc	0	Diorite 1a	Diorite 1a
20RDD009	106.00	116.44	10.44	0.83	Au-Te-Ag-Bi-W	bt-cc	1	py	5	cc-qtz	1	Diorite 3	Diorite 1
20RDD012	111.67	117.11	5.44	5.94	Au-Te-Ag-Bi-Cd-Mo-W	fecarb-bt-cc	2	py	2	cc	1	Diorite 1	Diorite 1
	212.24	213.46	1.22	6.15	Au-Te-Ag-Bi-W-Pb +/- Cd-Mo	bt-cc	2	py	80	qtz-cc	1	Diorite 1a	Diorite 1
20RDD014	498.59	513.60	15.01	1.16	Au-Te-Ag-Bi-Cd-Cu-W	bt-cc-sil	2	py	10	qtz-cc	2	Diorite 1	Diorite 5
20RDD015	47.57	52.50	4.93	9.59	Au-Te-Ag-Bi-Cu-Mo-W	bt-cc-chl	2	py +/- cpy	15	qtz-cc	4	Diorite 1	Diorite 2

Summary:

- **Au is found in quartz-calcite veins that often occur at lithologic contacts within the generally low-strain intrusive complex**
- **Veins have a Au-Ag-Te-Bi-W-Mo +/- Cu-Pb-Cd metal signature and are generally associated with biotite-calcite +/- silica-chlorite alteration**
- **Pyrite percentages range from 1 - 5% and higher grade Au sections contain trace chalcopyrite - galena**

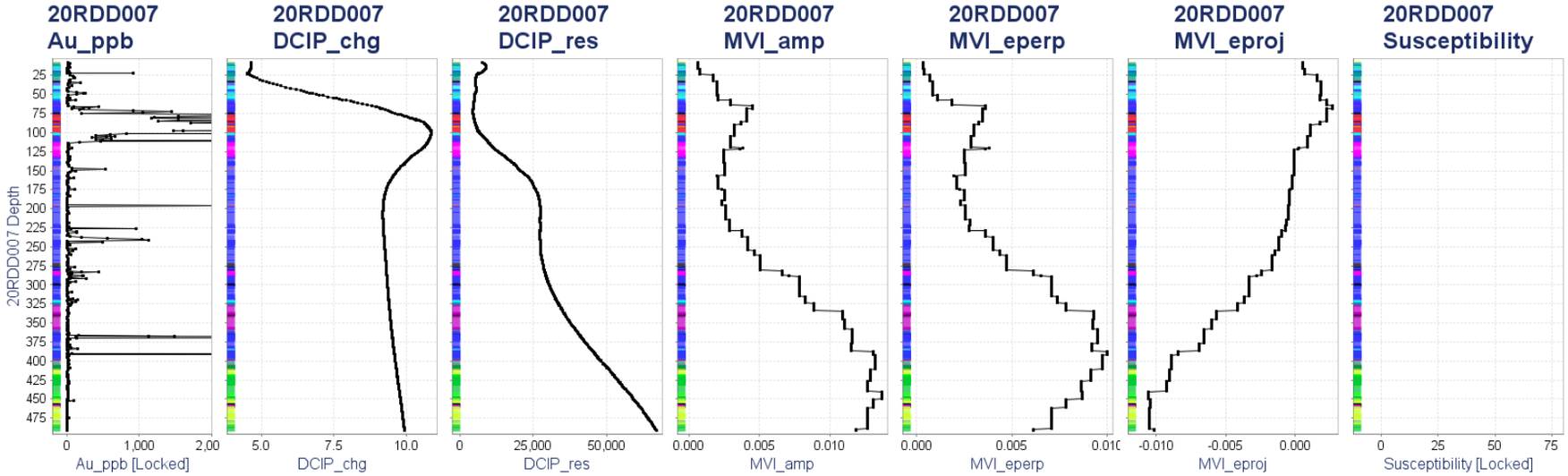
Trace element geochemistry

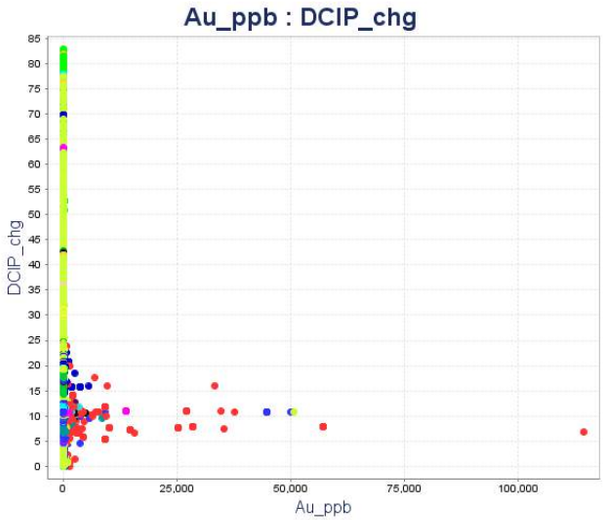
- **Excellent correlation between Au-Ag-Te +/- Bi-Cu-Mo-S-W-Pb**
- **Very little to no distal trace element expression surrounding Au mineralization**

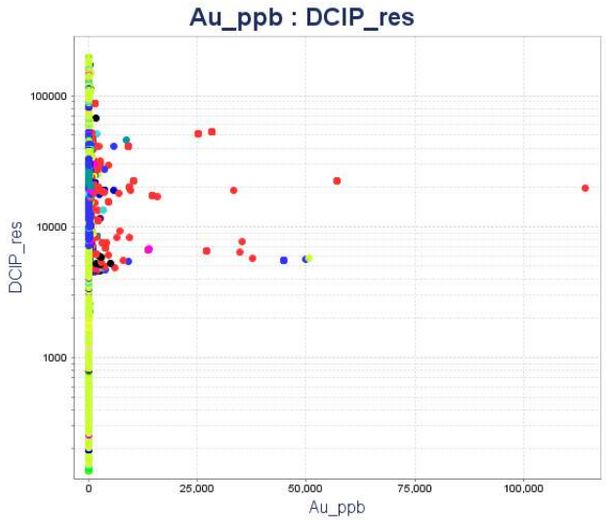


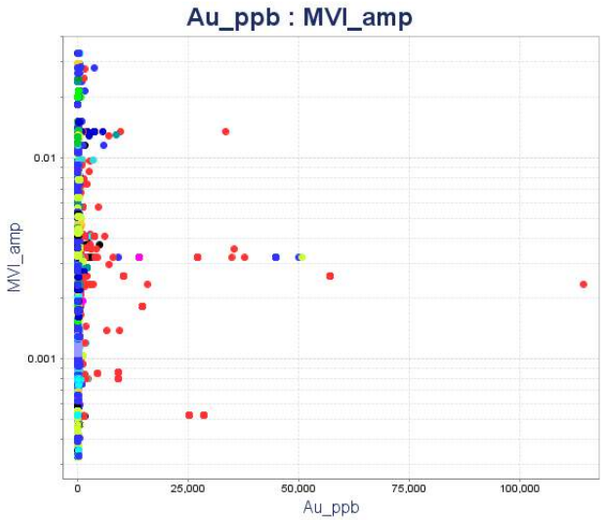
Geophysical properties

- Chargeability-resistivity model values were extracted and attributed with lithology and Au values
- Mid-range chargeability values within intrusive rocks host most of the gold discovered to date
- Take away – target chargeability anomalies within intrusive rocks

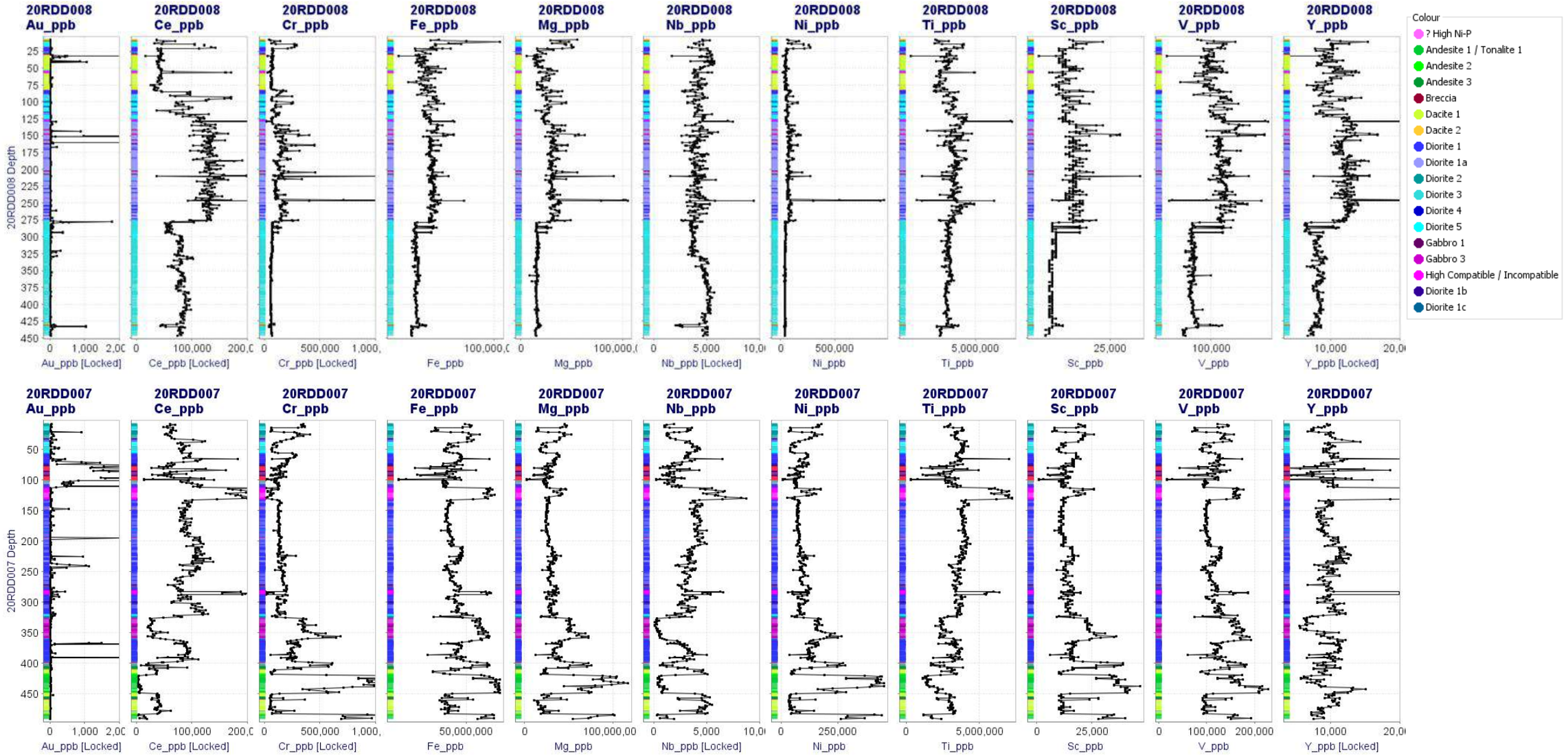






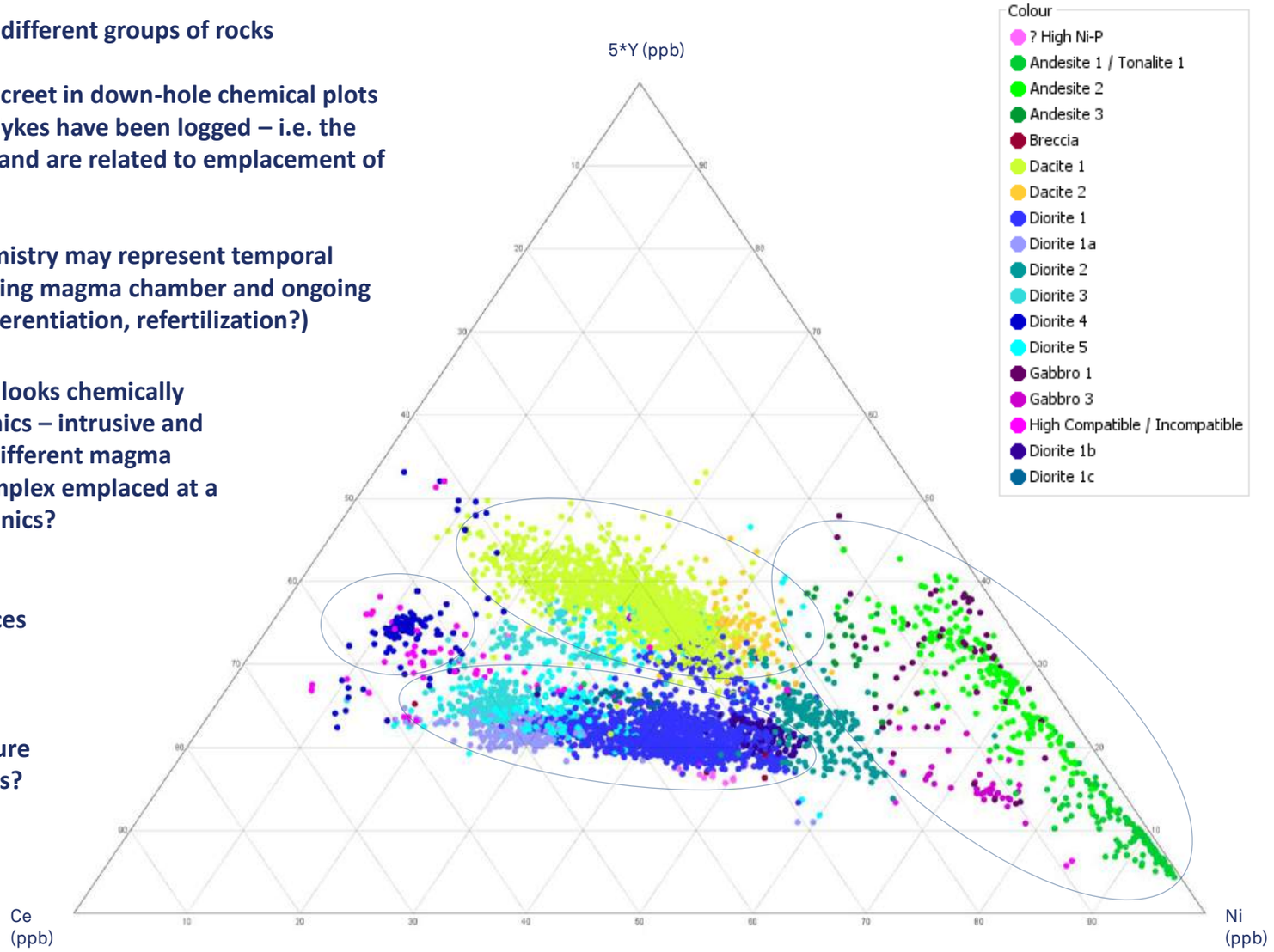


Lithogeochemistry Au hosted around intrusive contacts

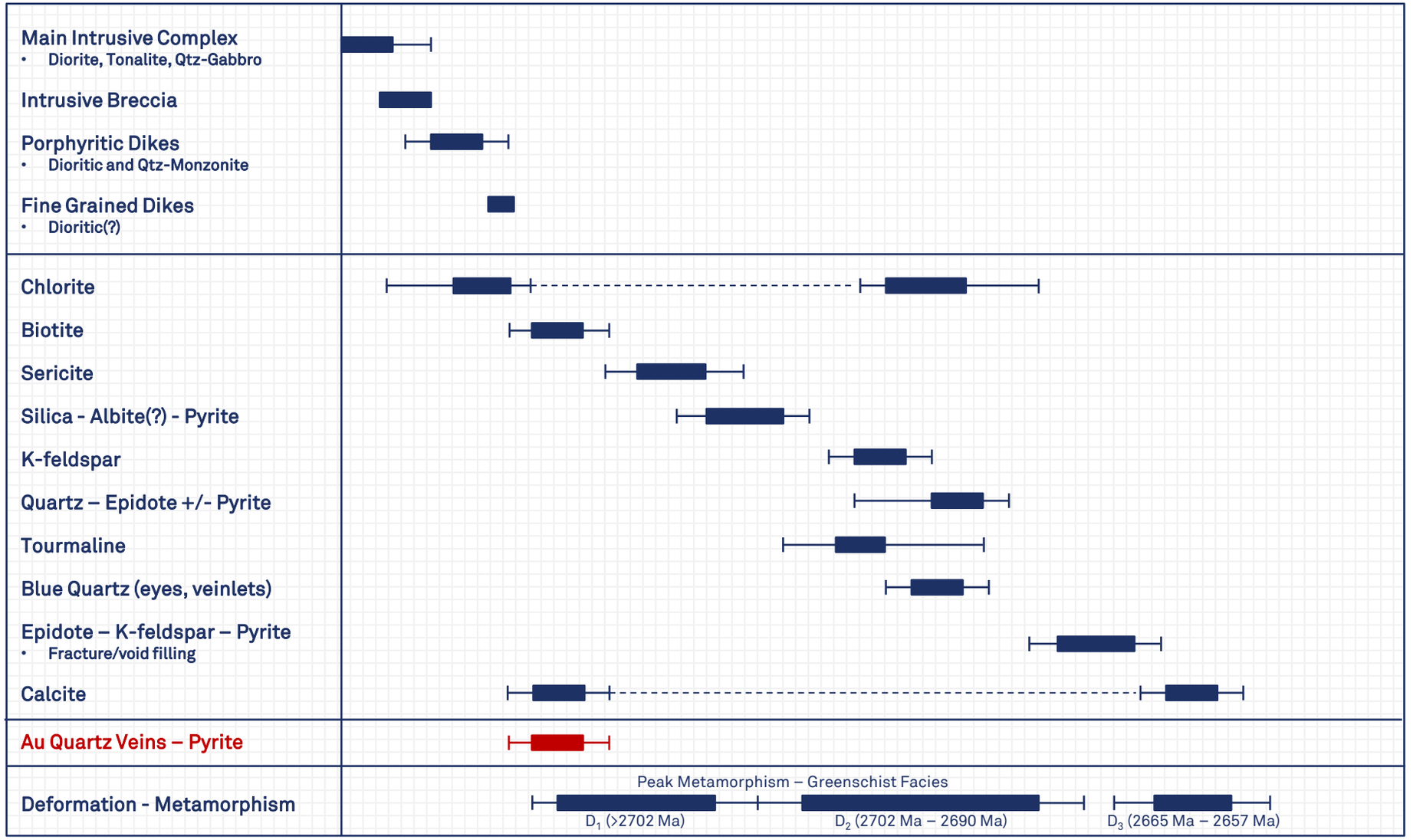


Lithogeochemistry All drilling

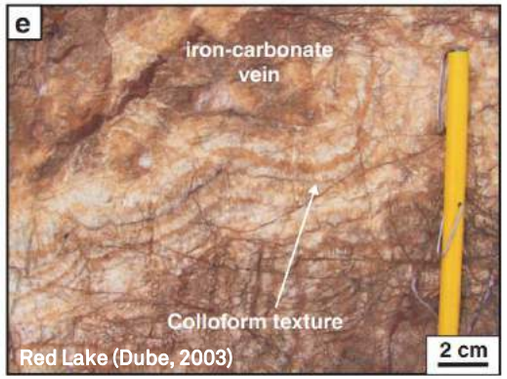
- **Most likely there are 4-6 different groups of rocks**
- **Chemical changes are discreet in down-hole chemical plots and different phases of dykes have been logged – i.e. the chemical breaks are real and are related to emplacement of the dyke suites**
- **Variations in diorite chemistry may represent temporal snapshots of the underlying magma chamber and ongoing magmatic processes (differentiation, refertilization?)**
- **Most of the diorite suite looks chemically different from the volcanics – intrusive and volcanics sourced from different magma chambers? Intrusive complex emplaced at a different time than volcanics?**
- **Differences in chemistry will translate to differences in rheology -> are there certain rheological contrasts that are more favorable for vein/structure emplacement than others?**



Paragenesis

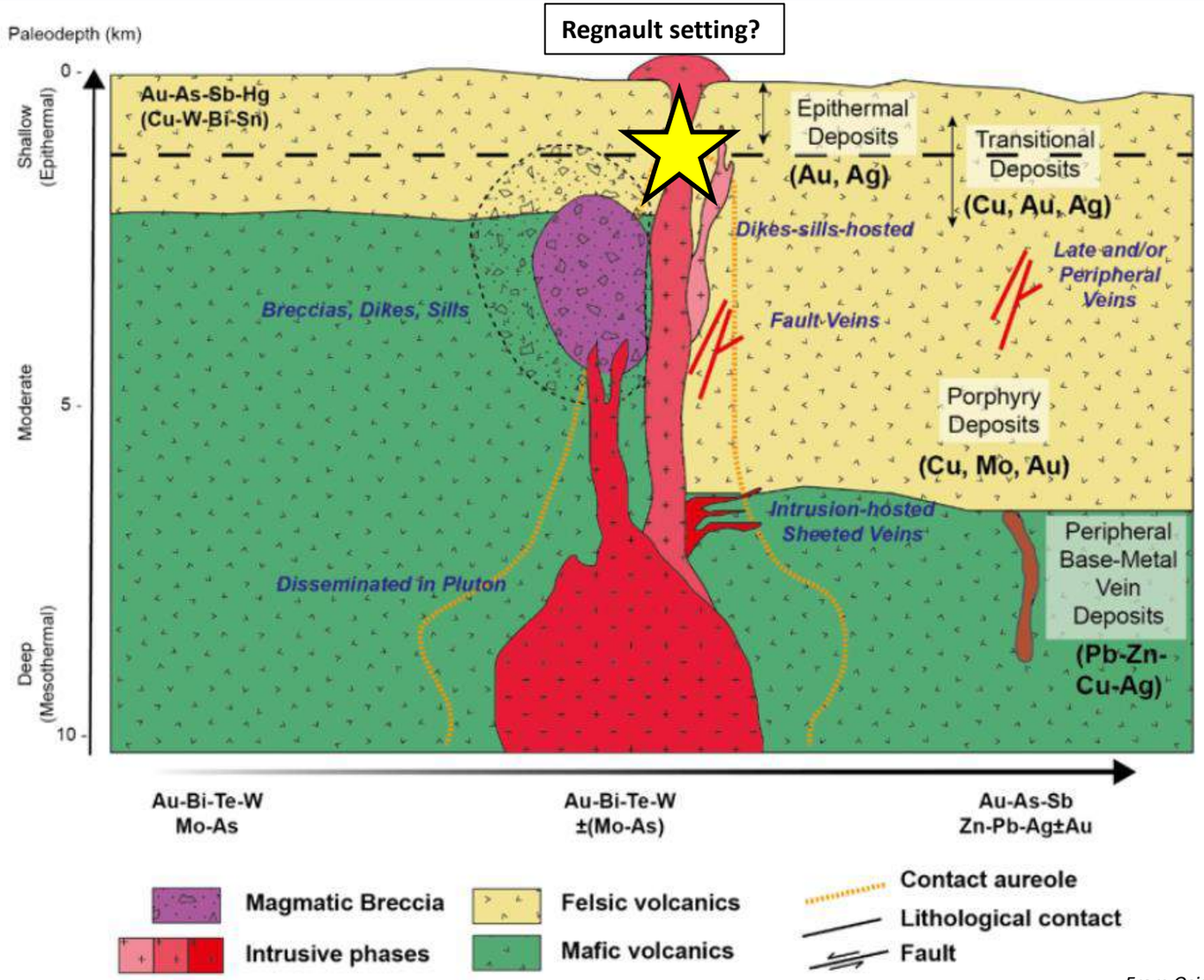


Early epithermal veining



- Colloform Mn-carbonate-rich veining found in multiple holes, but do no contain any significant Au
- Veining is very early – pre-gold? Potential ground preparation event for later gold mineralization?
- Similar to Red Lake – early colloform carbonate veining does not contain significant Au, but it is present and preserved

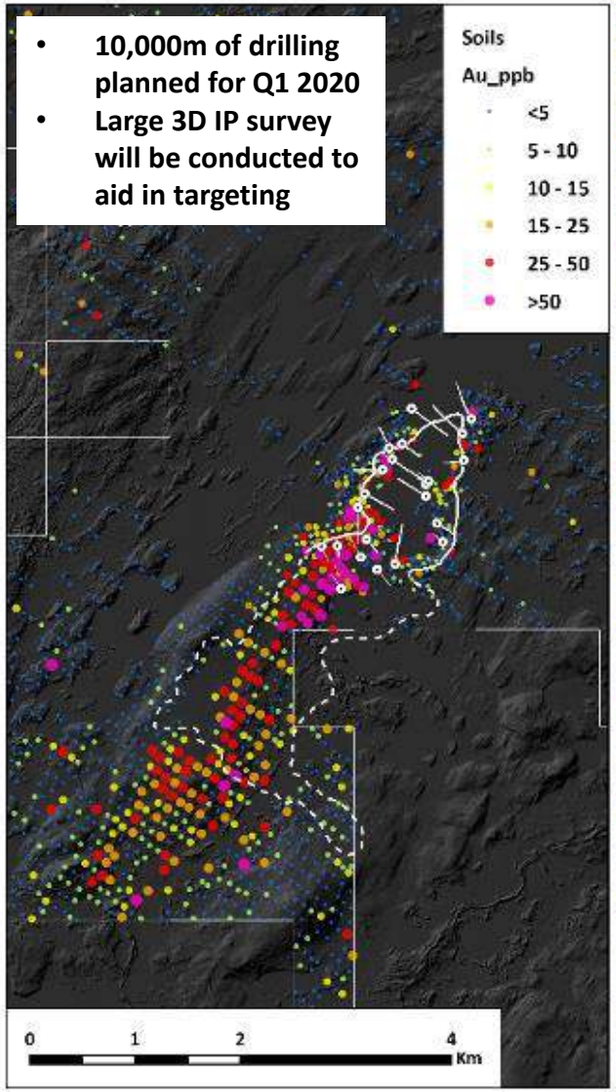
Metallogenic model (?)

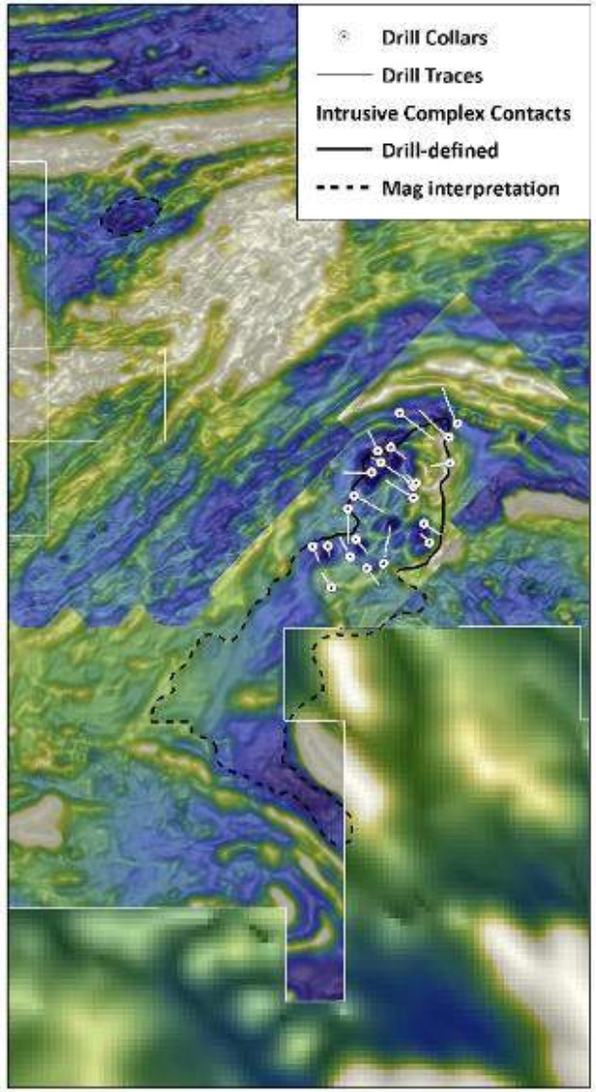


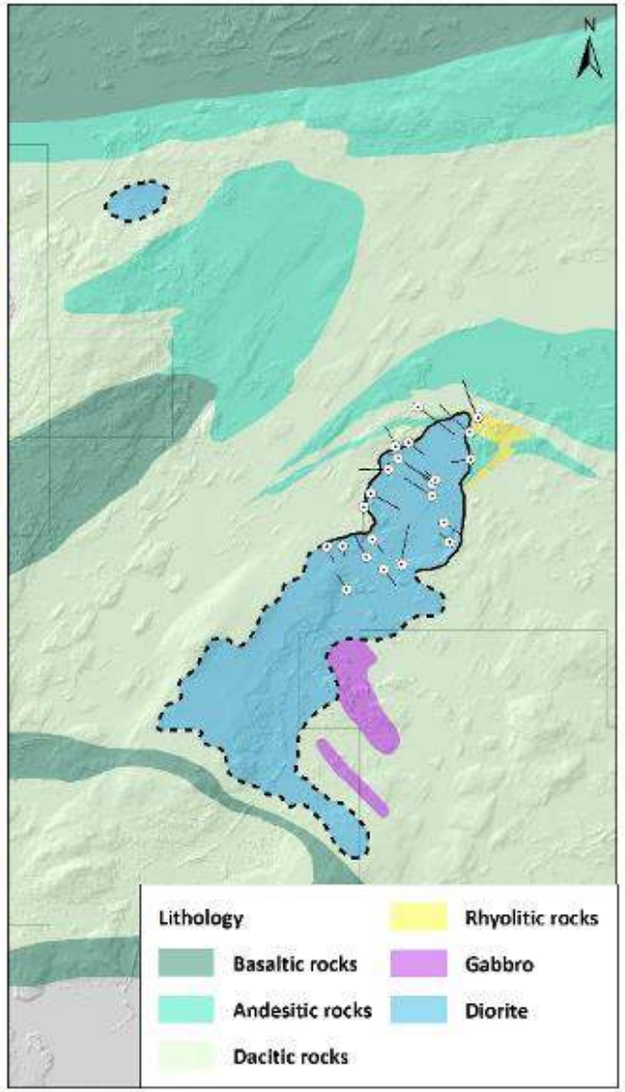
From Osisko Mining website; Windfall model

Regnault Going forward

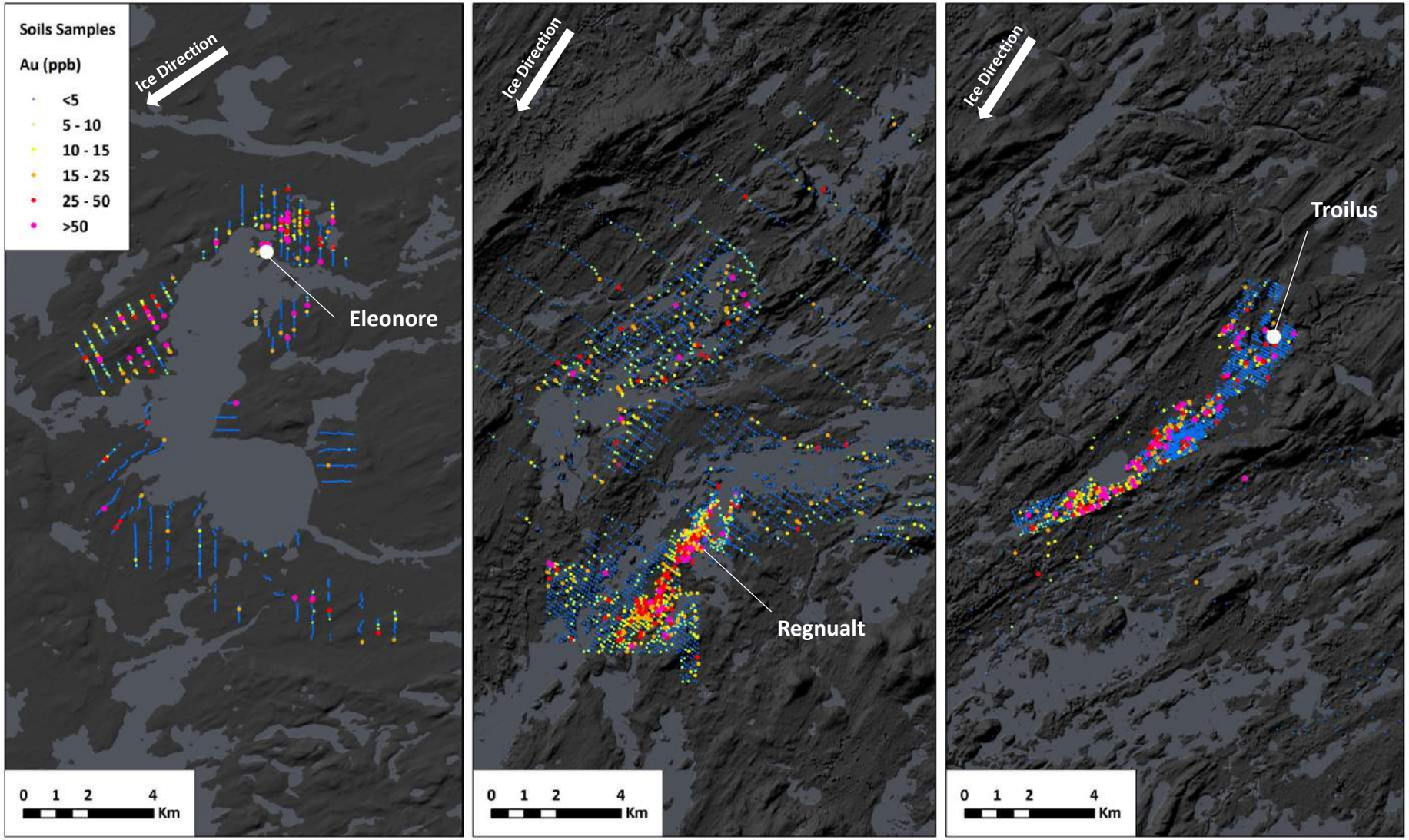
- 10,000m of drilling planned for Q1 2020
- Large 3D IP survey will be conducted to aid in targeting







Regnault potential Eleonore-Troilus comparison



Thank you!

Many thanks to everyone who has been involved in the project and helped out along the way!