



The O'Brien gold Project

Litho-structural Modeling

Ore Zones network interpretation

2019-03-04

Cautionary Statement



CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

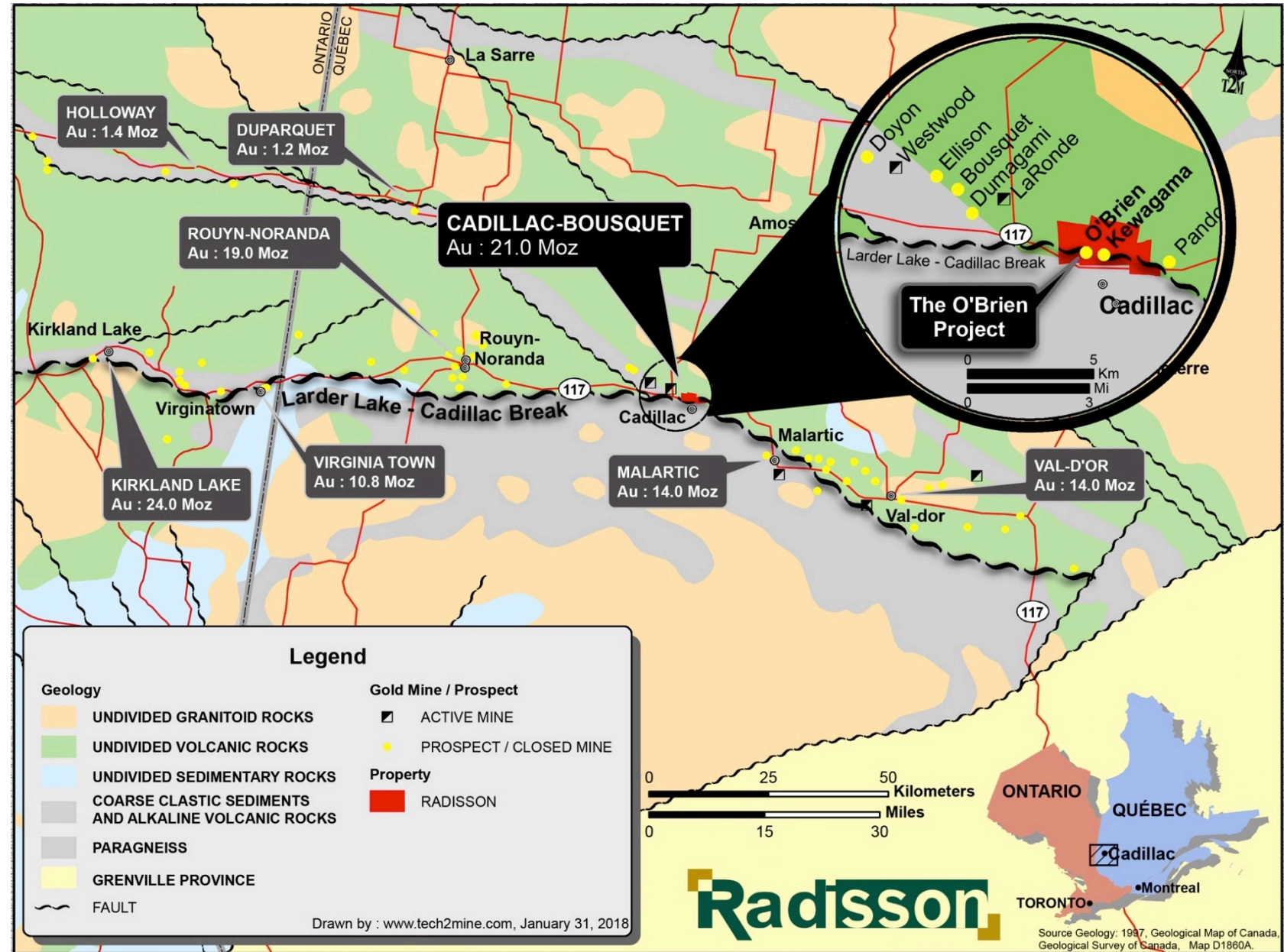
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Richard Nieminen, P.Geo., acts as a Qualified Person as defined in National Instrument 43-101 and has reviewed and approved the technical information in this presentation.

Regional setting – The O'Brien gold project

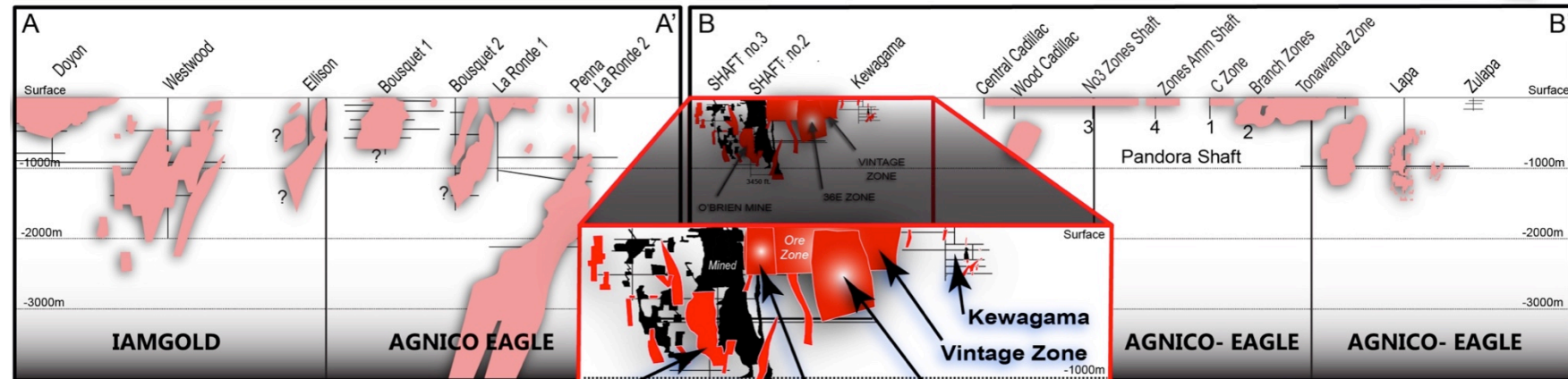
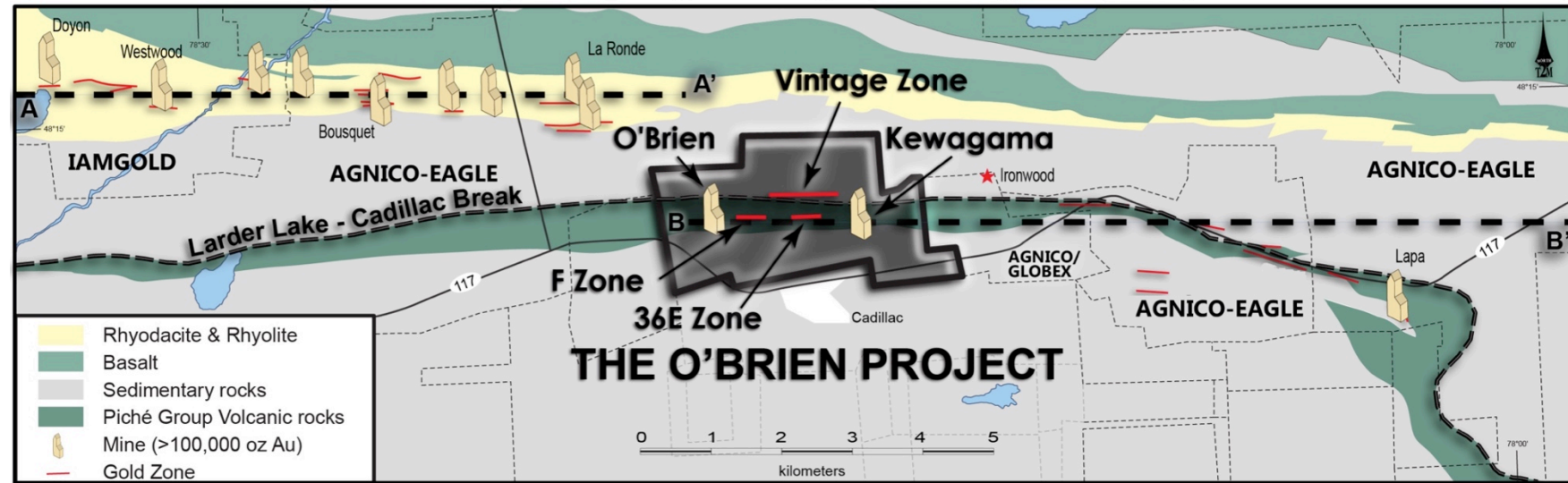
- The **O'Brien project** is located in the **Bousquet-Cadillac** mining camp along the world-renowned **Larder-Lake-Cadillac Break** halfway between **Val-d'Or** and **Rouyn-Noranda** in Abitibi, Quebec.
- This mining camp has produced over **21,000,000 ounces of gold** over the last **100 years**.
- The project hosts the **old O'Brien Mine**, considered to have been the Abitibi Greenstone Belt's **highest-grade gold** producer during its production (1,197,147 metric tons at **15.25 g/t Au** for **587,121 ounces of gold** from 1926 to 1957; InnovExplo, May 2018).



Regional setting – The O'Brien gold project

- Between 2016 and 2018, **Radisson drilled** completed more than **45,000 metres** of drilling at O'Brien
- Most of the **drilling** was completed in the **Piché group** with main objective of expanding gold resources on **36E** and **Kewagama** areas **along strike** of the old **O'Brien mine**.
- In 2017, the company completed an **exploration campaign** in the Cadillac Sediments (North of the Larder-Lake-Cadillac Break) , and discovered the **Vintage Zone**.
- In **March 2018**, **29,787 m** of drilling were incorporated in a **resource estimate update**.

Cadillac Mining Camp Geological Map



Drawn by www.tech2mine.com, January 31, 2018

Radisson
MINING RESOURCES

Current resources and interpretation

- **2018 resource model (Current resources)**

March 2018 ¹	Indicated resources			Inferred resources		
	Tonnage	Grade g/t Au	Ounces	Tonnage	Grade g/t Au	Ounces
At 3.5 g/t Au Cut-off	1,125,447	6.45	233,491	1,157,021	5.22	194,084

- EW-trending continuous vein network, showing multiple geometrical irregularities along the veins
- Vein network splits in two parts (East, West) by an interpreted NE-trending steeply dipping fault

- **Preliminary Observations and Initial Interpretation**

- Two dominant Ore Zone orientations; ENE and ESE
- ENE-trending Ore Zones seem to be spatially associated with the interpreted ENE-trending faults
- Ore Zones intersection defines high grade ore shoots, steeply plunging to the East (or West locally)

1. 43-101 Technical report for the O'Brien project, Abitibi, Québec, InnovExplo, March 20, 2018

- **Lithology Units**

- The main lithological units within the **Piché Group** as well as the contacts between the latter and the **Cadillac Group** to the north and the **Pontiac Group** to the south were **modeled** to a depth of approximately 550 meters below surface.
- As **expected**, they all are **continuous** across the property, showing a general **E-W trend**.

- **Structures**

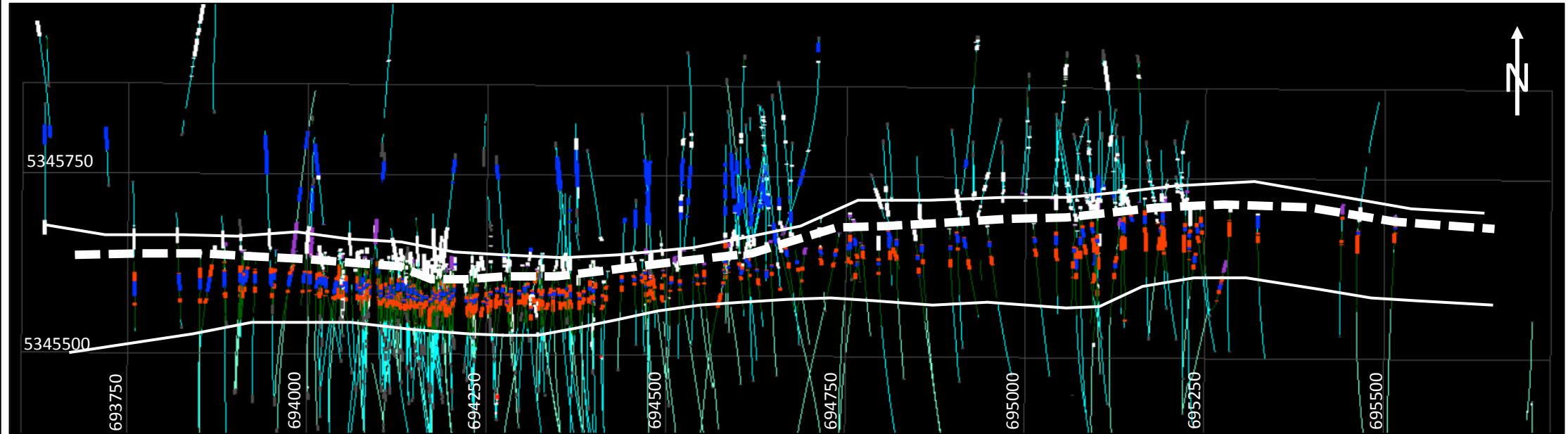
- On the property, the contact between the Cadillac and Piché Groups defines the **Larder-Lake-Cadillac Break (LLCB)**, a recognized major tectonic suture zone along which are found numerous important gold deposits
- Detailed modeling has revealed that all the **lithologies** as well as the LLCB and the penetrative S2 fabric are affected by several newly interpreted **ENE-trending sinistral faults**
- At least one **ESE-trending dextral fault** has also been interpreted on the basis of an right-lateral apparent displacement of the lithologies in the 36 E Zone area.
- The two sets of faults are interpreted to form a **conjugate system** which is post-dating the main D2 episode of deformation

- **Alteration**

- A **biotite altered** zone has been **modeled**.
- The biotite alteration appears to be predominantly **associated to the Piché Group**, and is also **affected by deformation**.





Lithological Modeling

3D plan view – DDH data showing main lithological units





Legend

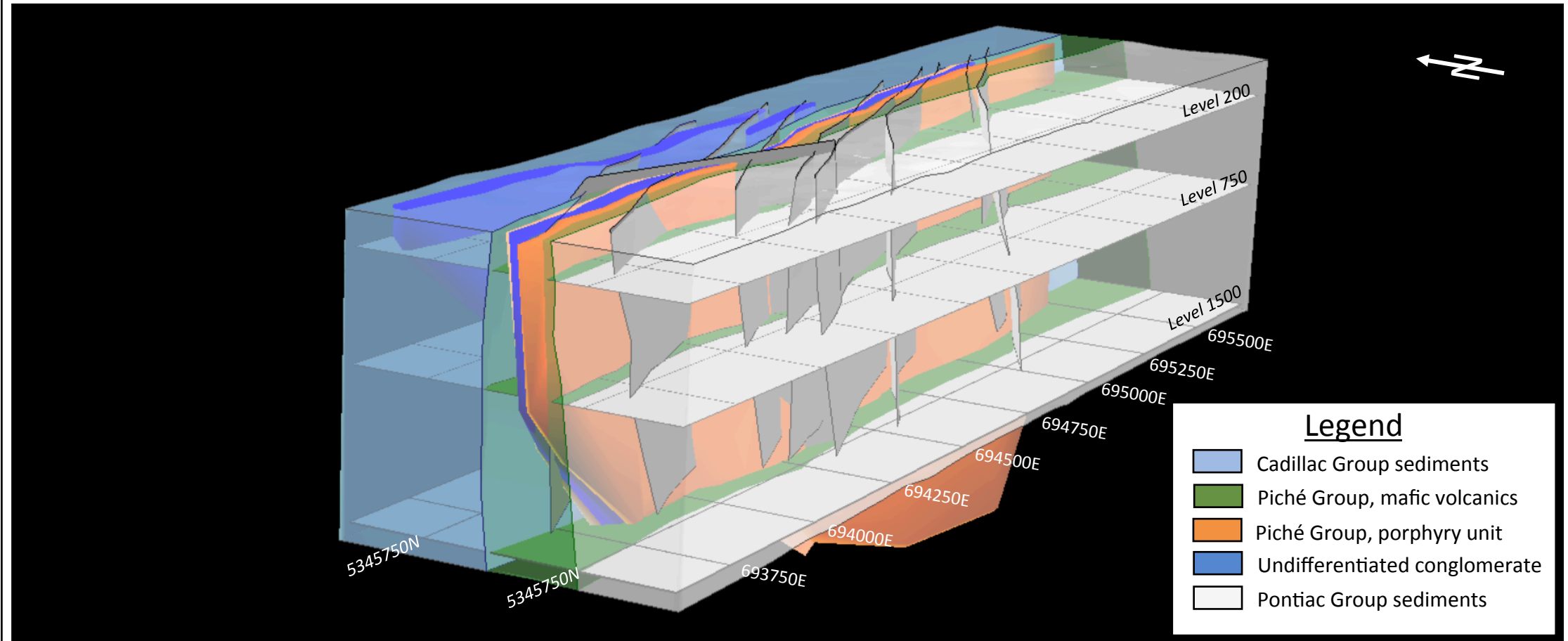
Drillhole rock codes

 Cadillac / Pontiac sediments	 Undifferentiated conglomerate
 Mafic volcanics	 Sheared, Fault zone
 Porphyry unit	

Structure

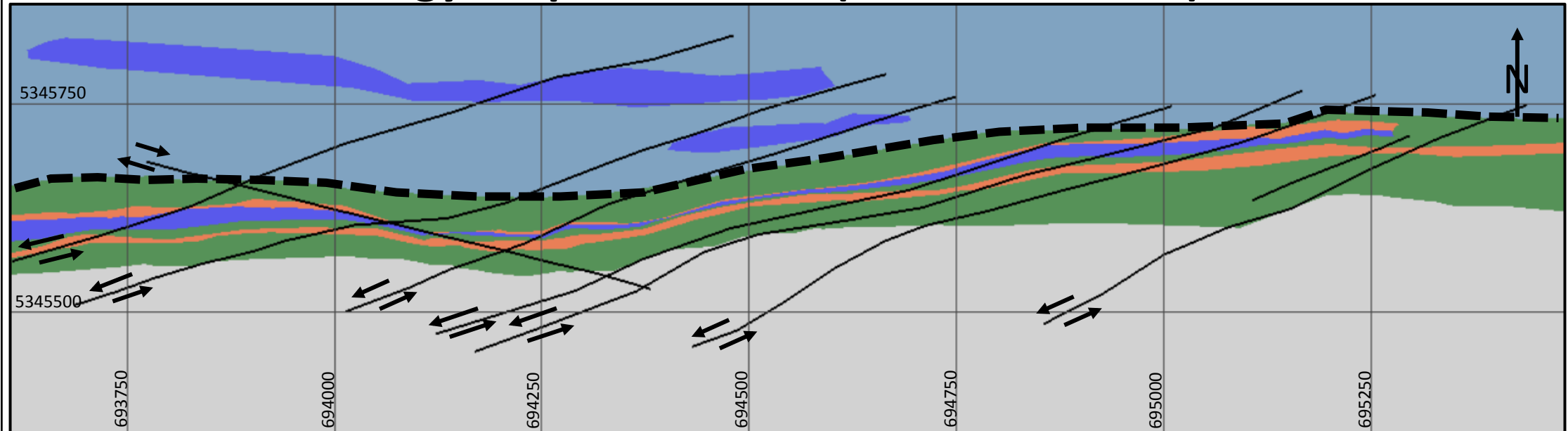
 Cadillac-Larder Lake fault zone
 Major contact

Isometric view of the litho structural model – Looking NE



Litho-Structural Model

Geology Map – level 200 (261m elevation)



Legend

Stratigraphy

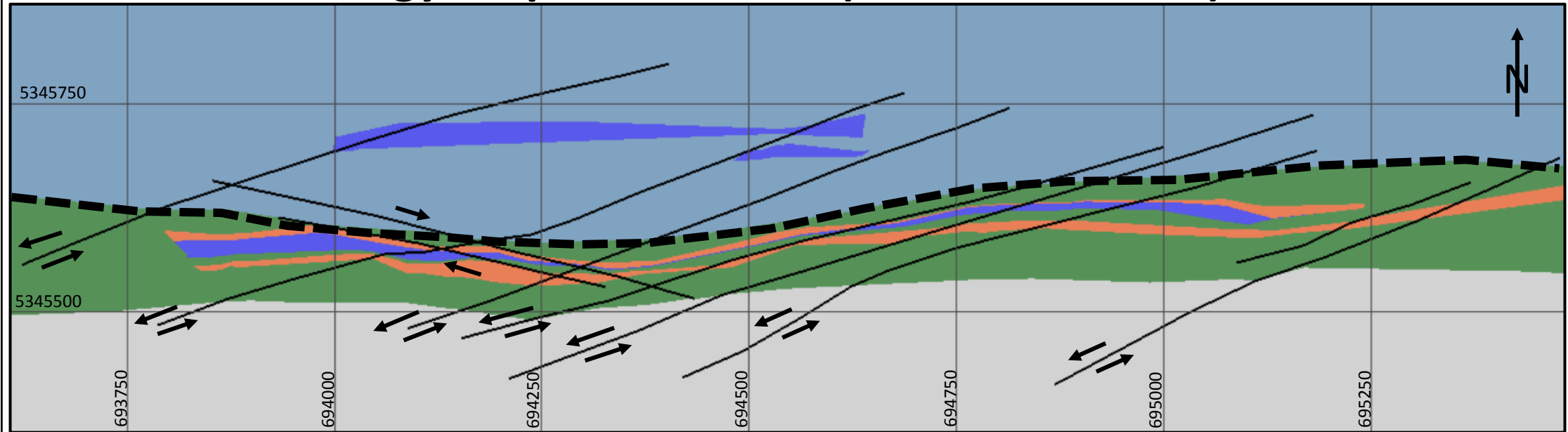
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|------------------------------|-------------------------------|
| Cadillac Group sediments | Undifferentiated conglomerate |
| Piché Group, mafic volcanics | Pontiac Group sediments |
| Piché Group, porphyry unit | |

Structure

- | |
|---------------------------------|
| Cadillac-Larder Lake fault zone |
| Fault |



Litho-Structural Model

Geology Map – level 1500 (-135m elevation)





Legend

Stratigraphy

- | | |
|--|---|
|  Cadillac Group sediments |  Undifferentiated conglomerate |
|  Piché Group, mafic volcanics |  Pontiac Group sediments |
|  Piché Group, porphyry unit | |

Structure

- | |
|---|
|  Cadillac-Larder Lake fault zone |
|  Fault |

Ore Zones Network Interpretation

Historical Interpretation of the O'Brien Mine

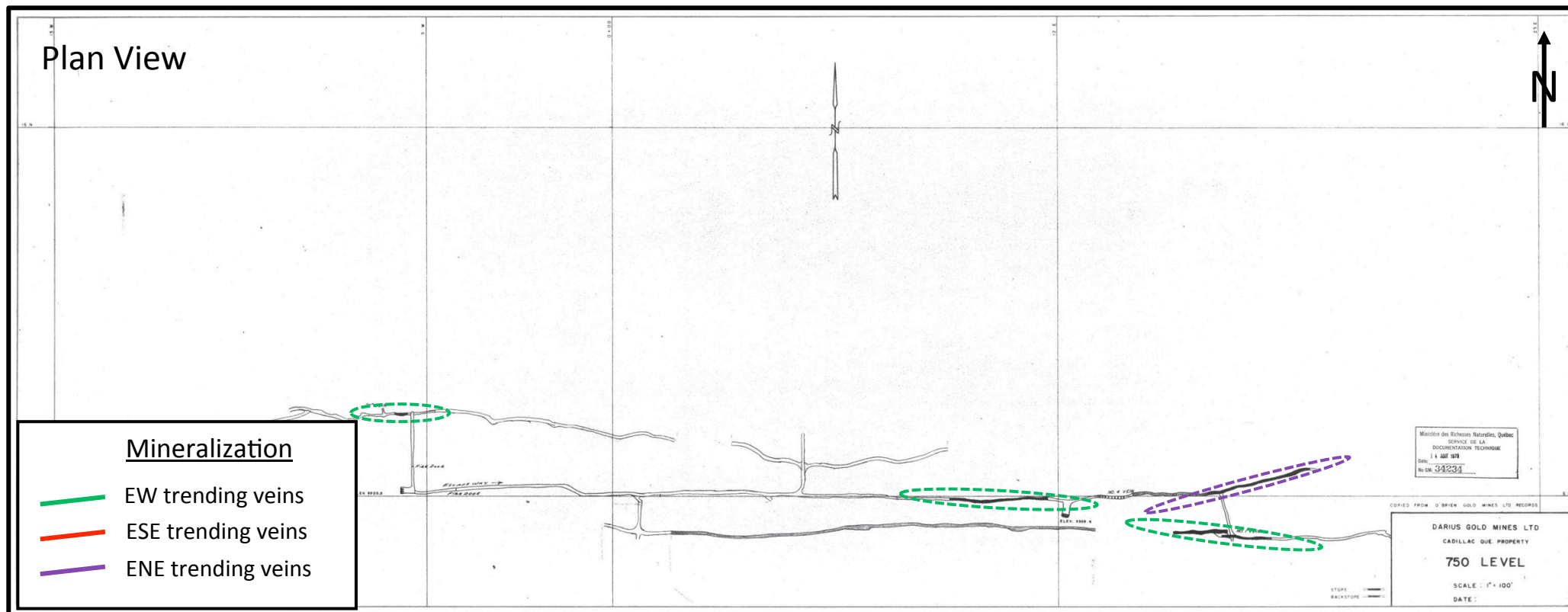
- The **O'Brien mine** produced 1,197,147 metric tons at **15.25 g/t Au** for **587,121 ounces of gold** from 1926 to 1957 (InnovExplo, May 2018)
- Two **main vein sets** were historically **mined at O'Brien**
- These two vein sets are **slightly oblique** to the main **E-W** trending penetrative foliation, and are generally trending **ENE and ESE**.
- Both vein sets are affected by flattening and sometimes show **asymmetric folding** (S or Z folds depending which set is impacted).
- Vein **#1, #4 and #9** accounted for **90%** of the production at the **Old O'Brien mine** (Sauvé et Trudel, 1990)

Information retrieved from scanned Level plan maps from the O'Brien Mine

- **Stope outlines** were digitized
- **Volumes** and **surfaces** were created from these outlines
- Geometrical analysis shows **three main orientations; E-W, ENE and ESE**
- **Intersection** between the **stopes** defines a **steep plunge**, to which **high-grade** mineralization is preferentially associated to (**ore shoots**)

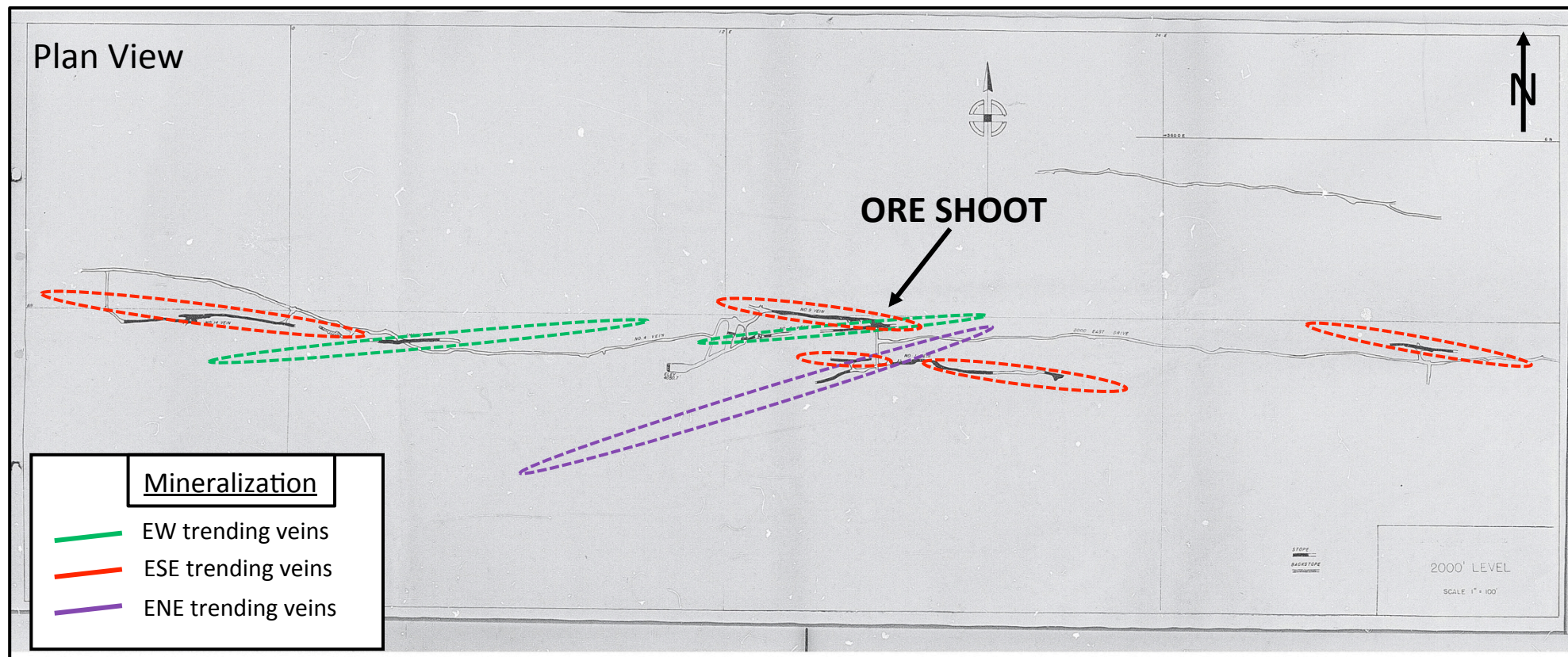
Ore Zones Network Interpretation

Old O'Brien level 750 – Initial Interpretation



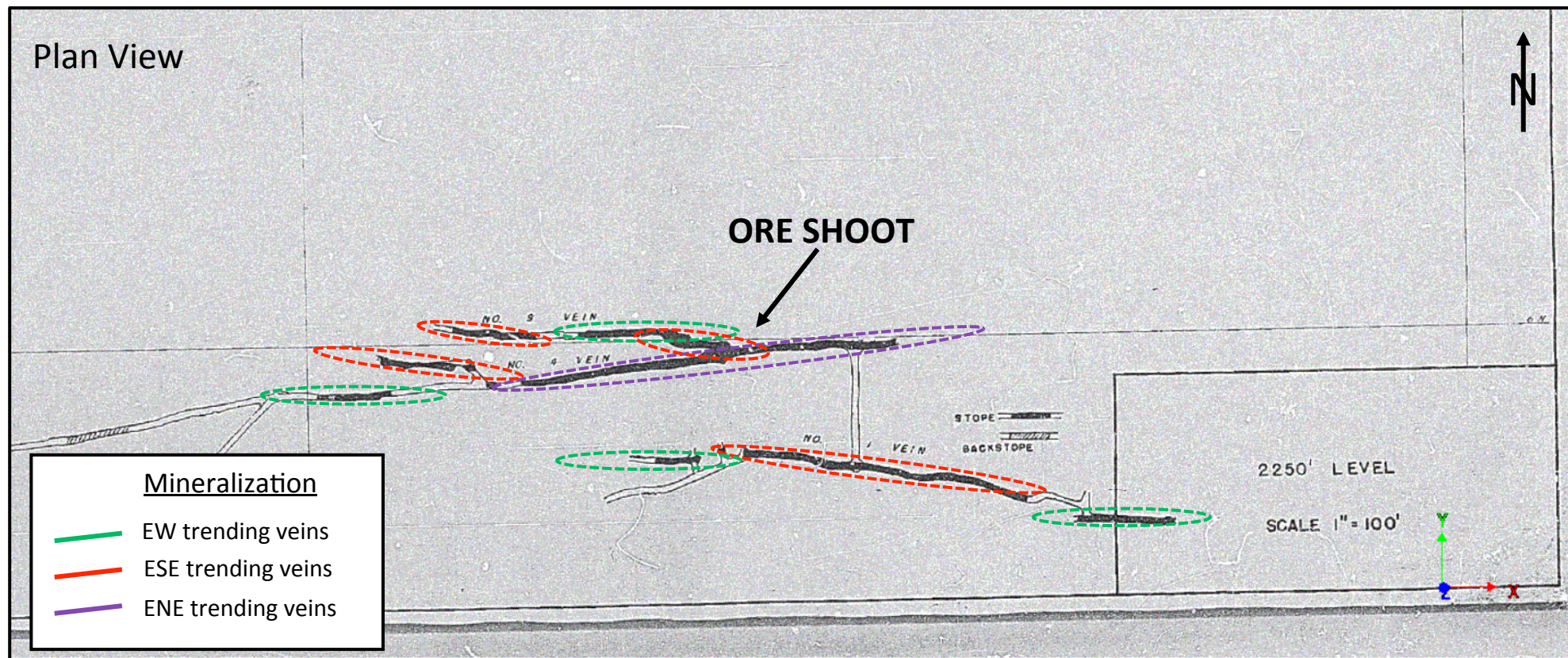
Ore Zones Network Interpretation

Old O'Brien level 2000 – Initial Interpretation



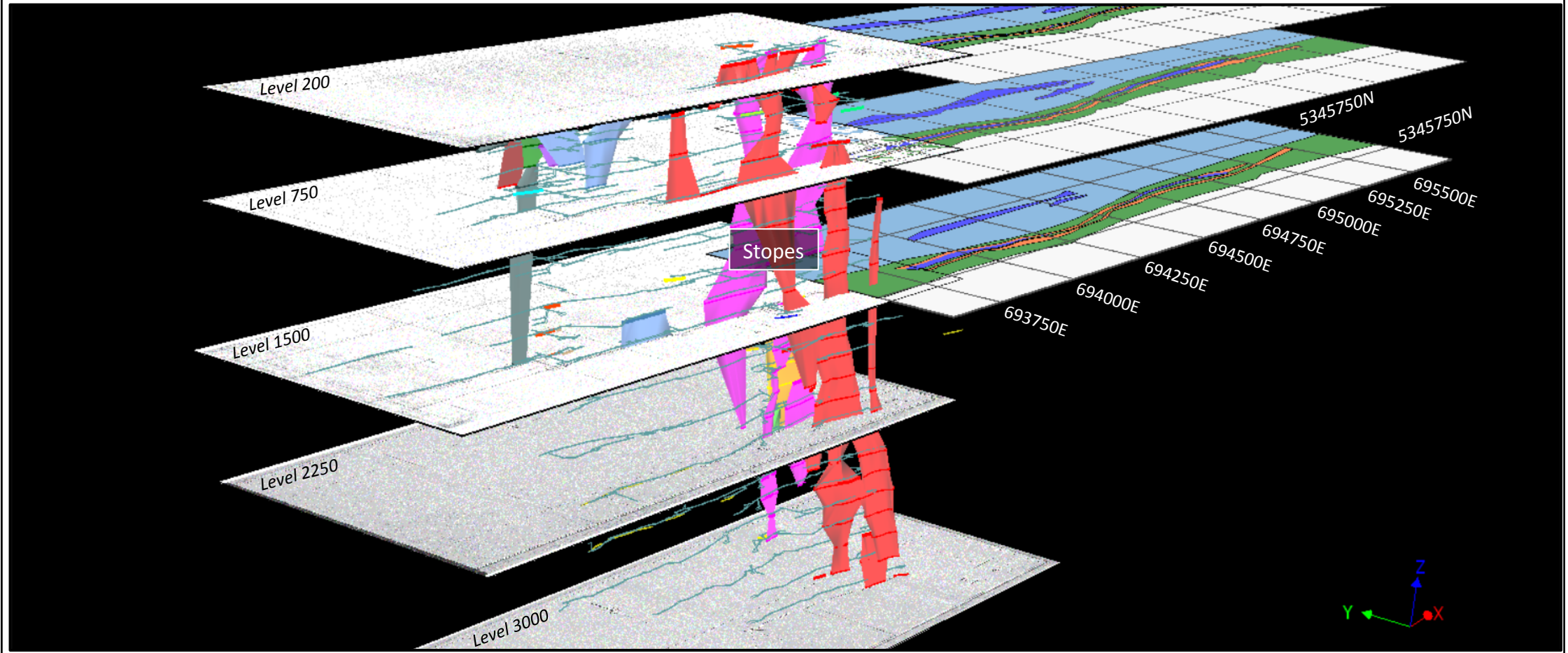
Ore Zones Network Interpretation

Old O'Brien level 2250 CLOSE-UP – Initial Interpretation



Ore Zones Network Interpretation

Old O'Brien Isometric view (looking NE) – Stopes Modeling



Ore Zones Network Interpretation

O'Brien Longitudinal view (looking north) – Intersection between Ore Zones

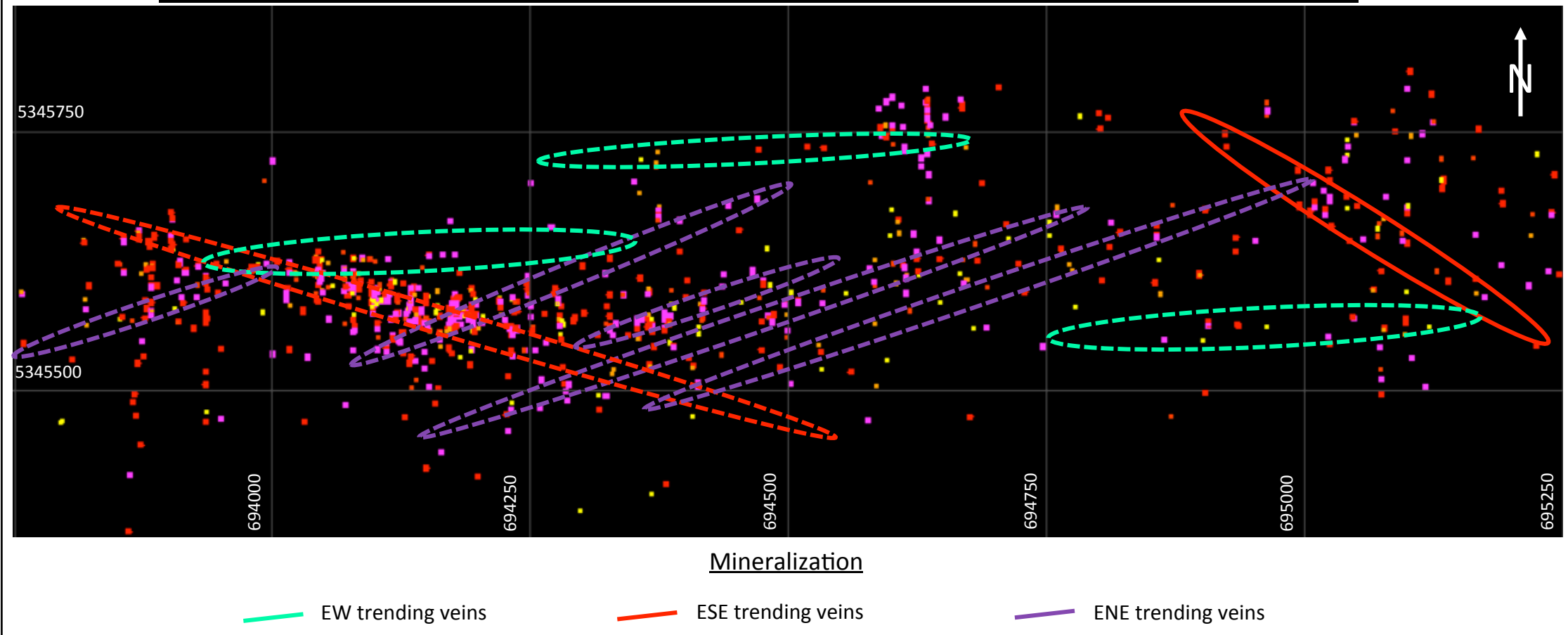


Ore Zones Network Interpretation

- Preliminary interpretation between 36 E Zone and Kewagama Mine shows **severals mineralized** « corridors »
 - In part **inspired** by **geometries** observed at **O'Brien** and **Kewagama Mines**
- Three preferential orientations are observed;
 - **E-W, ENE et ESE**
 - Very **similar** to the **old O'Brien mine**
- Mineralized corridors often **coincidental** with **lithological** contacts and **interpreted faults**

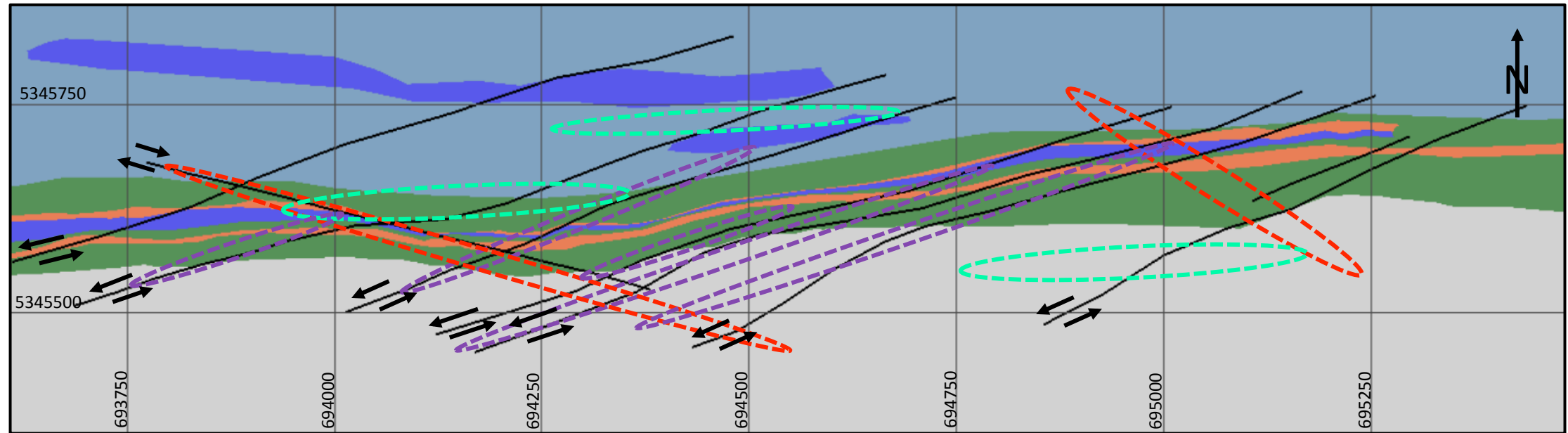
Ore Zones Network Interpretation

Plan view – Initial Interpretation of the mineralized corridors



Ore Zones Network Interpretation

Plan view – Initial Interpretation of the mineralized corridors against model



Legend

Stratigraphy

- | | |
|------------------------------|-------------------------------|
| Cadillac Group sediments | Undifferentiated conglomerate |
| Piché Group, mafic volcanics | Pontiac Group sediments |
| Piché Group, porphyry unit | |

Structure

- | |
|---------------------------------|
| Cadillac-Larder Lake fault zone |
| Fault |

Mineralization

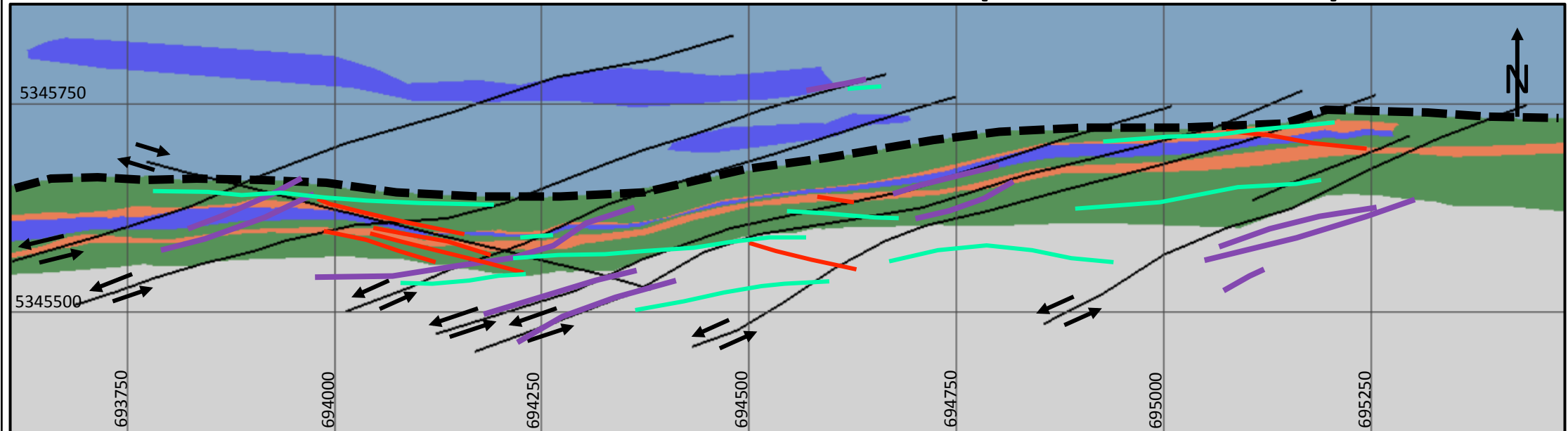
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|--------------------|
| EW trending veins |
| ESE trending veins |
| ENE trending veins |

Mineralized Vein Network

- **Detailed** interpretation has allowed to design **numerous** ore zone wireframes capturing high grade gold **mineralization** along preferential trends
- An **intimate** geometrical **relationship** exists between the **ore zones** and the interpreted faults location and **geometry**.
- Mineralized ore zones often **coincidental** with **lithological** contacts as a result of competency contrast.
- Some ore zones are interpreted outside of the Piché Group demonstrating that both the **Cadillac** and the **Pontiac** Groups have **potential** for hosting gold **mineralization**
- Intersection of the mineralized zones defines **steep** east-plunging **lineations**
 - As at O'Brien, such intersections define **high grade ore shoots**

Mineralized Vein Network

Mineralized Vein Network – level 200 (261m elevation)



Legend

Stratigraphy

- | | |
|------------------------------|-------------------------------|
| Cadillac Group sediments | Undifferentiated conglomerate |
| Piché Group, mafic volcanics | Pontiac Group sediments |
| Piché Group, porphyry unit | |

Structure

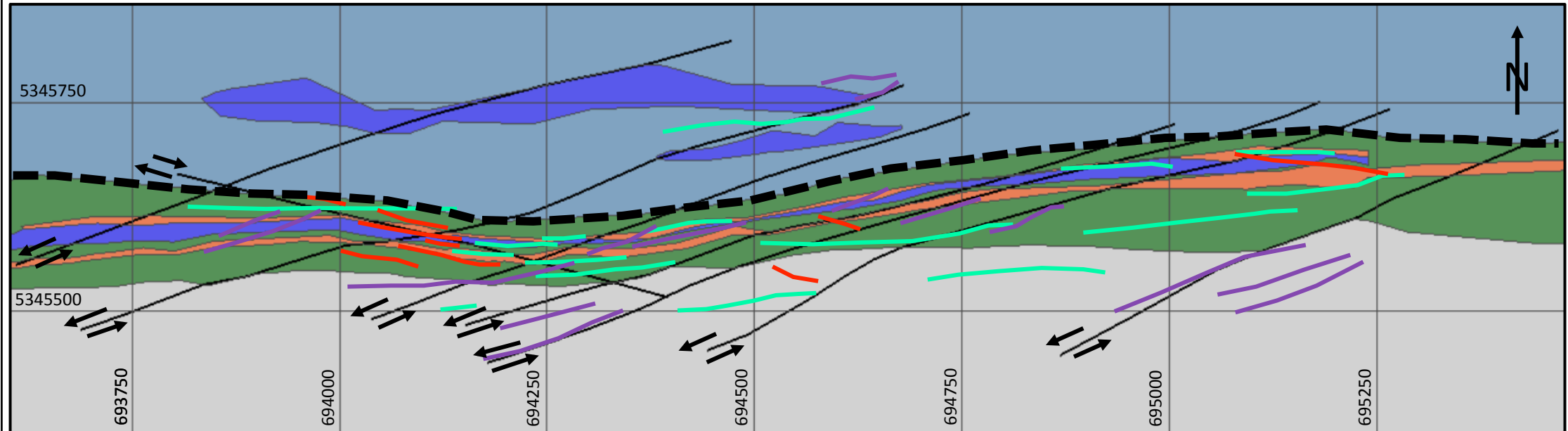
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|---------------------------------|
| Cadillac-Larder Lake fault zone |
| Fault |

Mineralization

- | |
|--------------------|
| EW trending veins |
| ESE trending veins |
| ENE trending veins |

Mineralized Vein Network

Mineralized Vein Network – level 500 (170m elevation)



Legend

Stratigraphy

- | | |
|------------------------------|-------------------------------|
| Cadillac Group sediments | Undifferentiated conglomerate |
| Piché Group, mafic volcanics | Pontiac Group sediments |
| Piché Group, porphyry unit | |

Structure

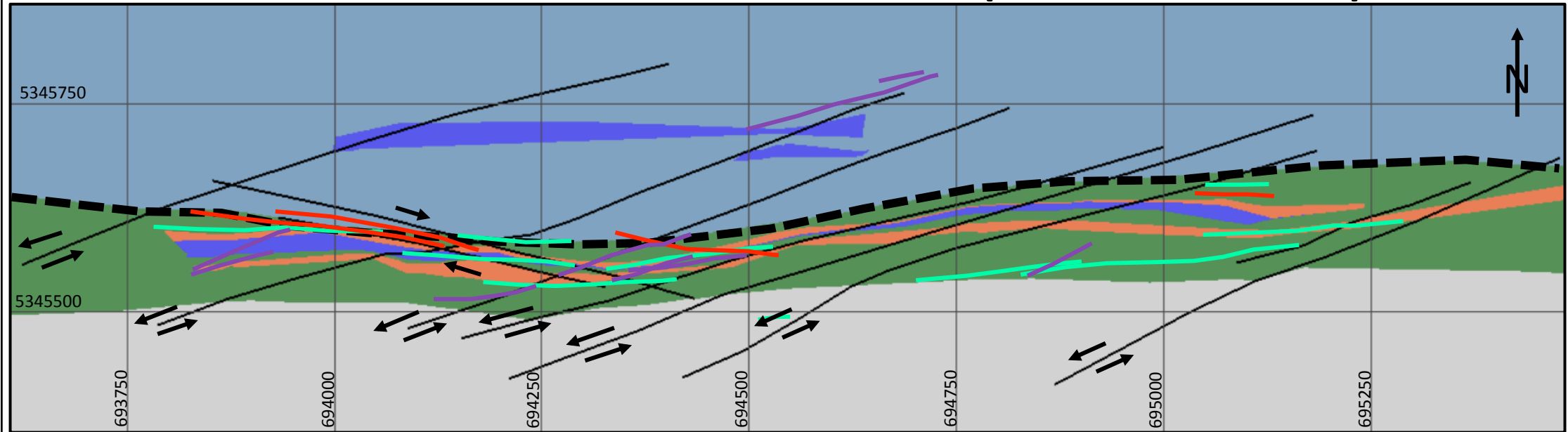
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|---------------------------------|
| Cadillac-Larder Lake fault zone |
| Fault |

Mineralization

- | |
|--------------------|
| EW trending veins |
| ESE trending veins |
| ENE trending veins |

Mineralized Vein Network

Mineralized Vein Network – level 1500 (-135m elevation)



Legend

Stratigraphy

- | | |
|------------------------------|-------------------------------|
| Cadillac Group sediments | Undifferentiated conglomerate |
| Piché Group, mafic volcanics | Pontiac Group sediments |
| Piché Group, porphyry unit | |

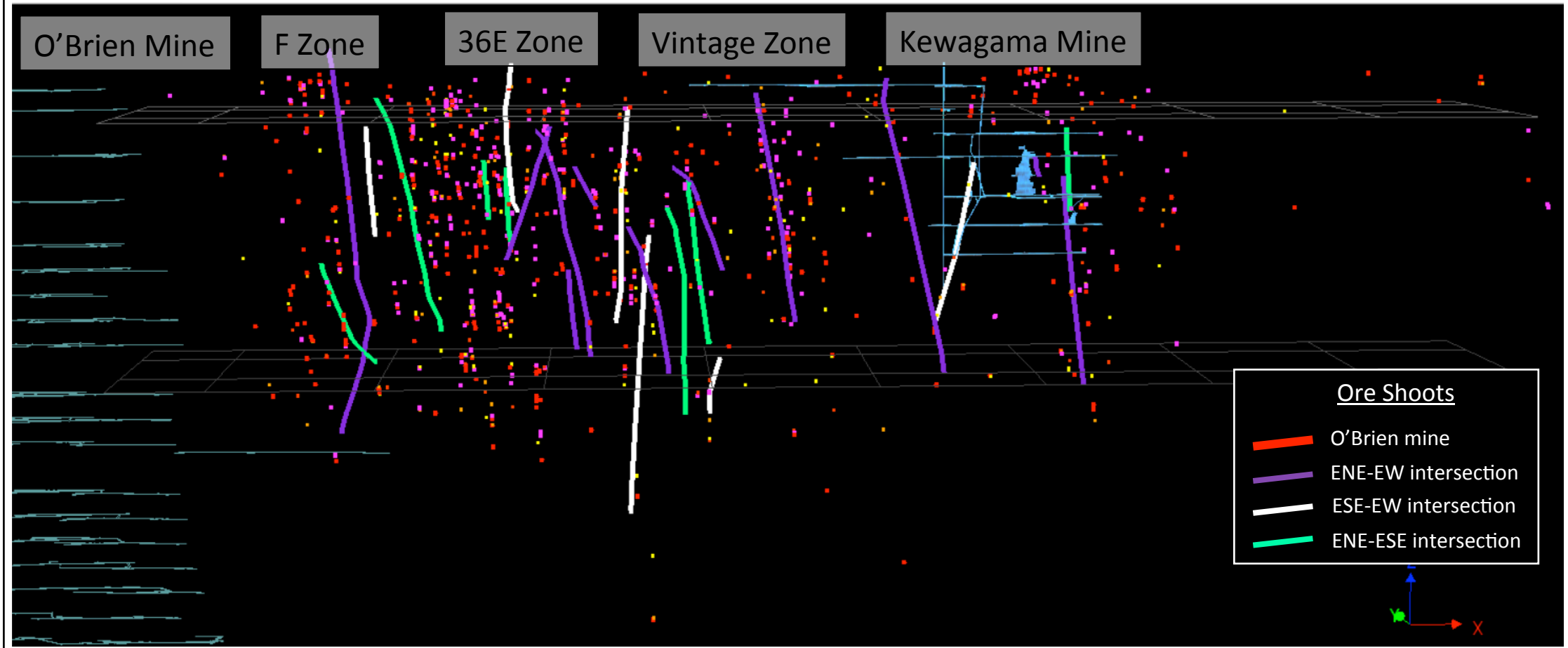
Structure

- | |
|---------------------------------|
| Cadillac-Larder Lake fault zone |
| Fault |

Mineralization

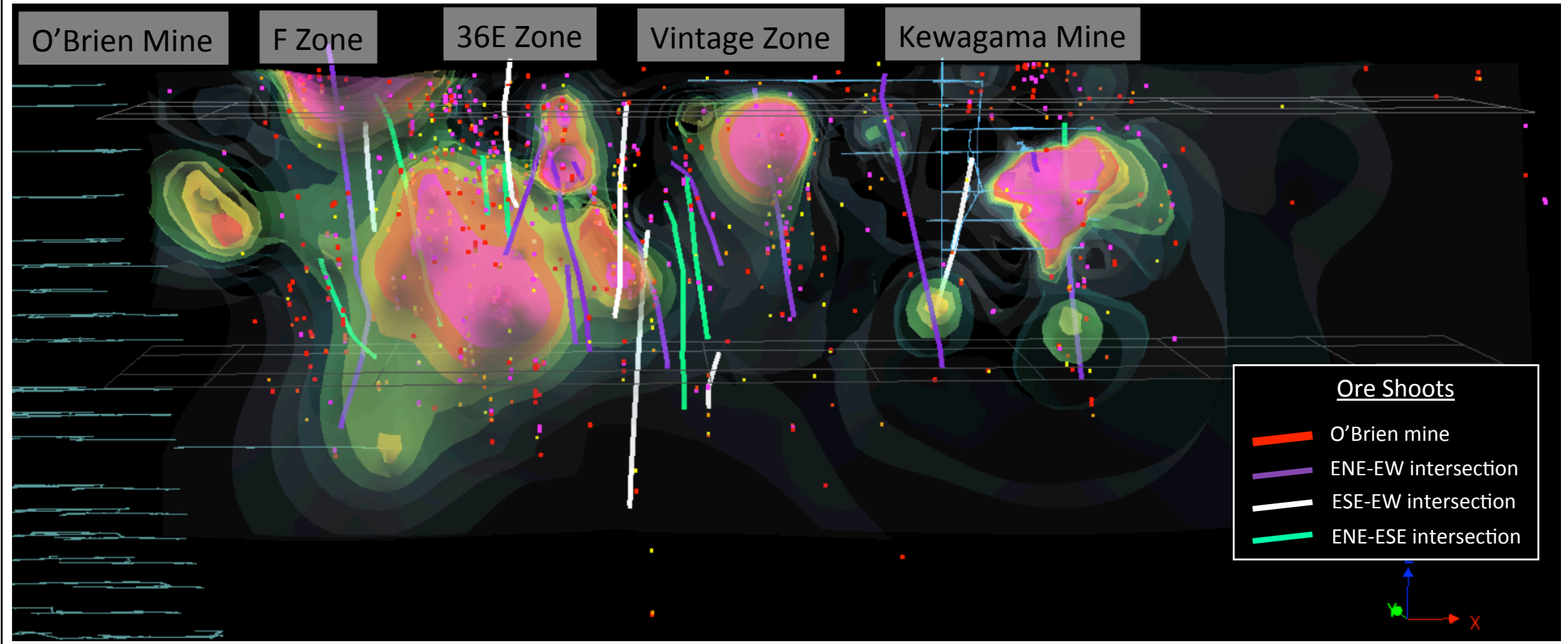
- | |
|--------------------|
| EW trending veins |
| ESE trending veins |
| ENE trending veins |

Ore Shoots - 3D longitudinale view – looking north



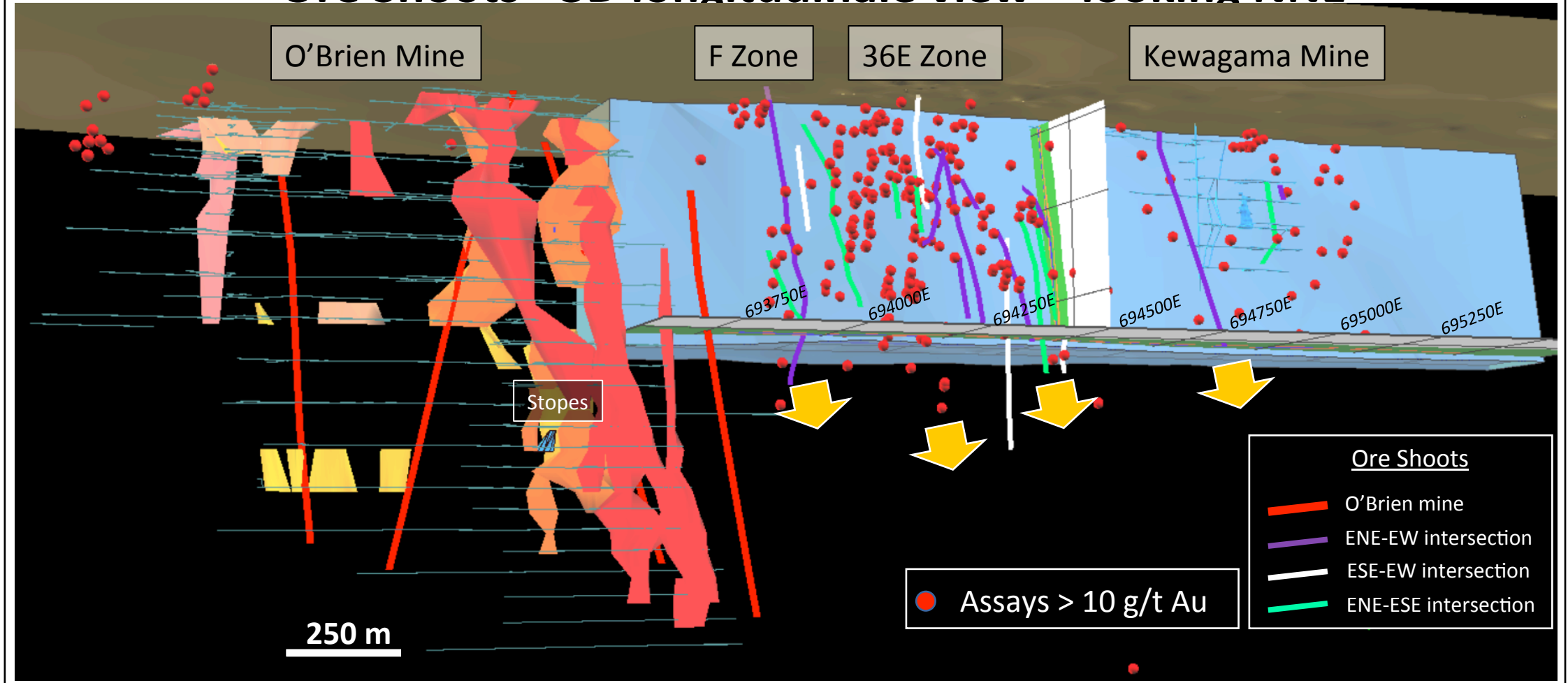
Mineralized Vein Network

Ore Shoots vs metal factor - 3D longitudinale view – looking north



Mineralized Vein Network

Ore Shoots - 3D longitudinale view – looking NNE



Where to drill next?

