



**White Cliff Minerals LTD**

# High Impact WA Nickel Sulphide Drilling to Commence Next Month



*RC rig in action at Lake Johnston during 2012 campaign*

**March 2013**



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The Information in this presentation that relates to exploration results, mineral resources or ore reserves is based on information compiled by Mr Todd Hibberd, who is a member of the Australian Institute of Mining and Metallurgy. Mr Hibberd is a full time employee of the company. Mr Hibberd has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2004 edition of the `Australian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves (the JORC Code)`. Mr Hibberd consents to the inclusion of this information in the form and context in which it appears in this presentation.



# Investment Highlights

- **High Impact Nickel Sulphide Drilling in Western Australia *Commencing Early Next Month***
  - Multiple high impact EM nickel sulphide drill targets identified
  - 7 EM targets to be drilled in early April 2013 (Lake Percy and Mt Gordon)
  - 5 EM targets to be drilled in mid 2013 (Bremer Range and Mt Glasse)
  - All targets with coincident nickel/copper soil anomalies
  - In addition to EM and soil, all targets have multiple favourable indicators (eg. ultramafic rocks, basal contacts, lava channels etc) of nickel/copper mineralisation
  - \$150,000 drill funding from WA government
- **EM surveys and soil sampling underway over additional Ni-Cu prospects**
- **Fully funded** for 2013 exploration with a very low market capitalisation providing maximum leverage to success case



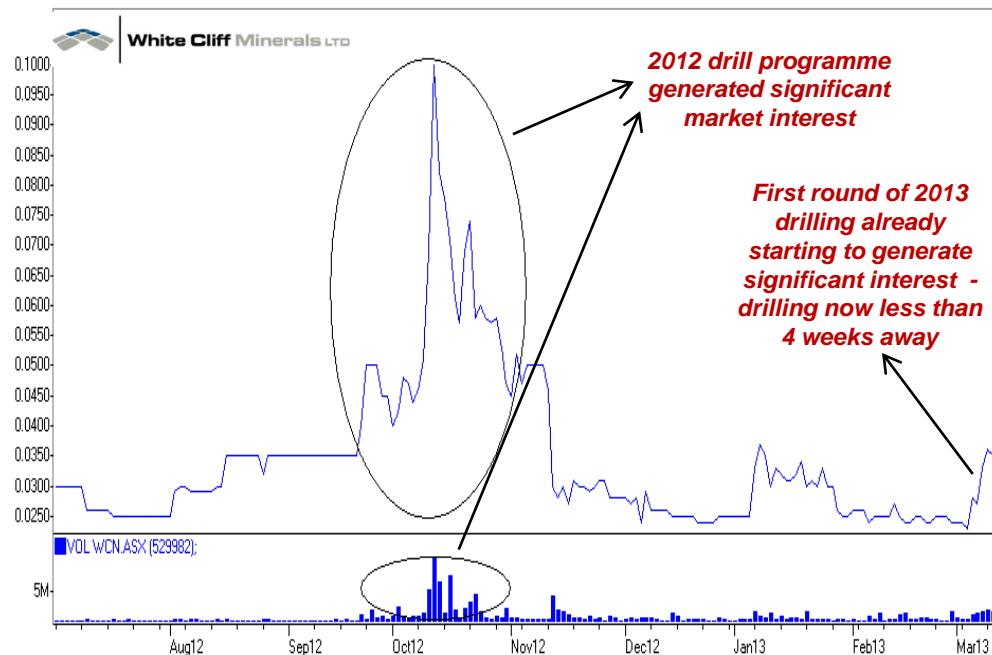
# Corporate Snapshot

Capital Structure #	
Shares	186.1M
Options 116.2m - 6c ex price expiring 30/9/2014 5.75m - 25c ex price expiring 30/6/2014	122M
Cash (15 March 2013)	\$1.8M
Share Price	\$0.03
Market Cap	\$5.6M

# Post settlement of recently approved placement

Board of Directors	
Managing Director	Todd Hibberd
Executive Chairman	Michael Langoulant
Non-exec Director	Rodd Boland
Founders & Directors Shareholding	12%

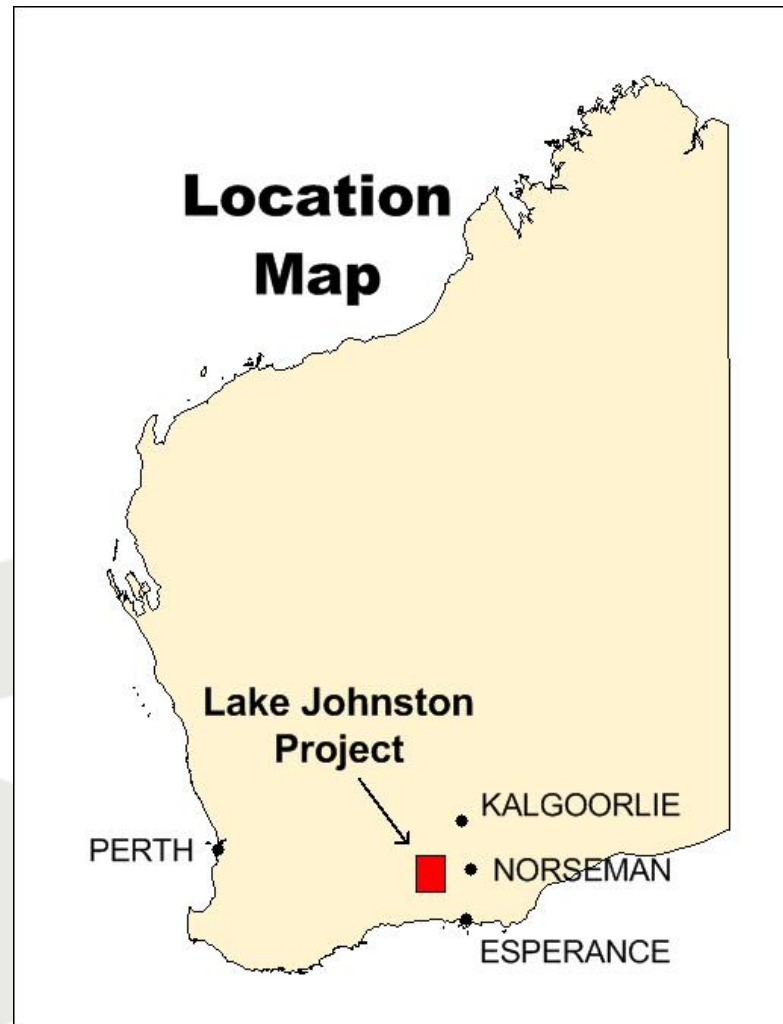
- **Experienced team**
- **Tight capital structure**
- **Highly leveraged to exploration success**





# Lake Johnston Nickel Sulphide Project (100%)

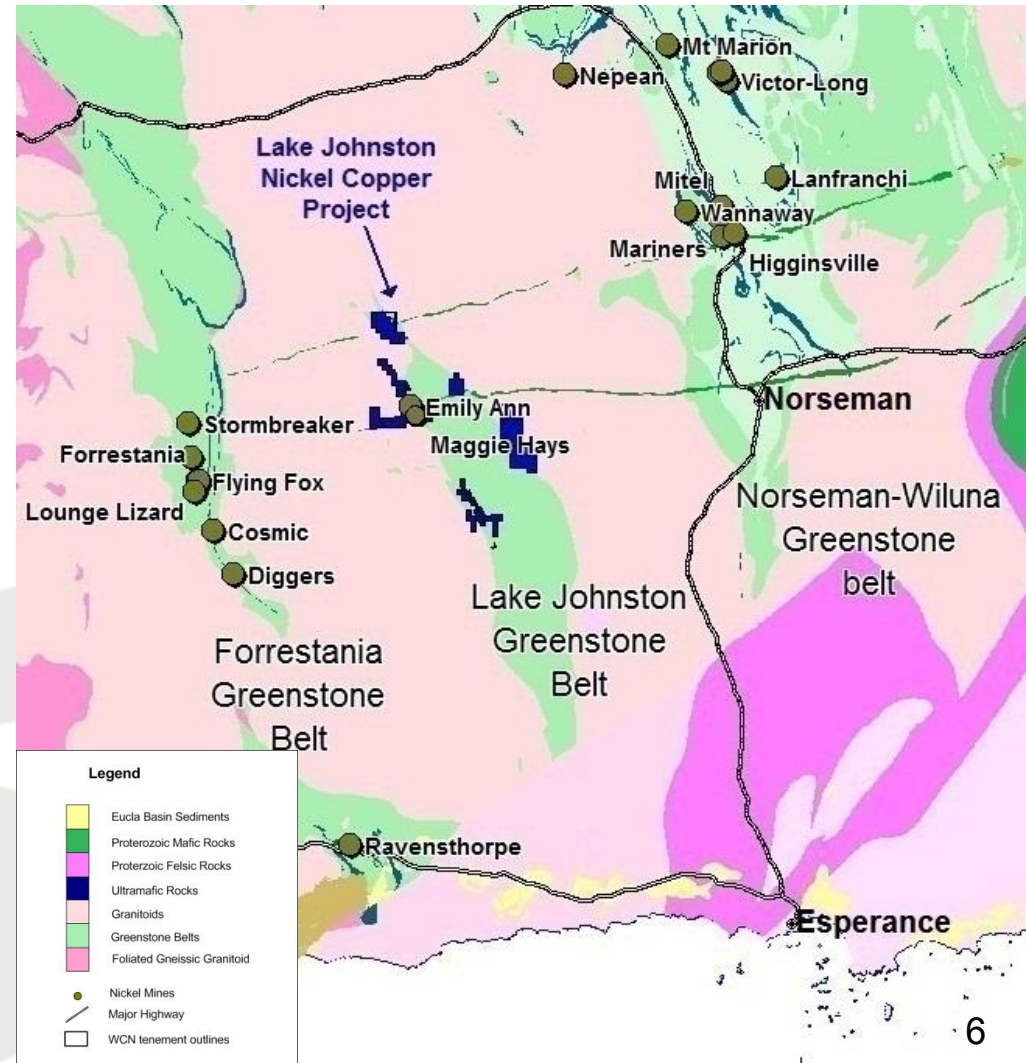
- Exploring for nickel sulphide on same West Australian greenstone belt as two significant nickel sulphide mines:
  - Emily Anne
  - Maggie Hays
  - **14Mt @ 1.82% Nickel**





# Nickel Deposits Occur in Clusters – Targeting the Next Nickel Mine at Lake Johnston

- Major nickel clusters in Southern Western Australia
  - Forrestania Cluster
  - Kambalda Cluster
- There should be a nickel cluster at Lake Johnston
  - Emily Anne Mine
  - Maggie Hays Mine
  - **More???**
- White Cliff's large project area covers 650 km<sup>2</sup>
- 40km long zone of prospective ultramafic



# Where and How Nickel Deposits Form

- Ultramafic lava can contain 0.2-0.3% background nickel
- Lava flows over sediments containing sulphur
- Lava melts the sediments and absorbs the sulphur
- Nickel and sulphur form nickel sulphides
- Nickel sulphides are heavy and accumulate at the bottom of the lava channel

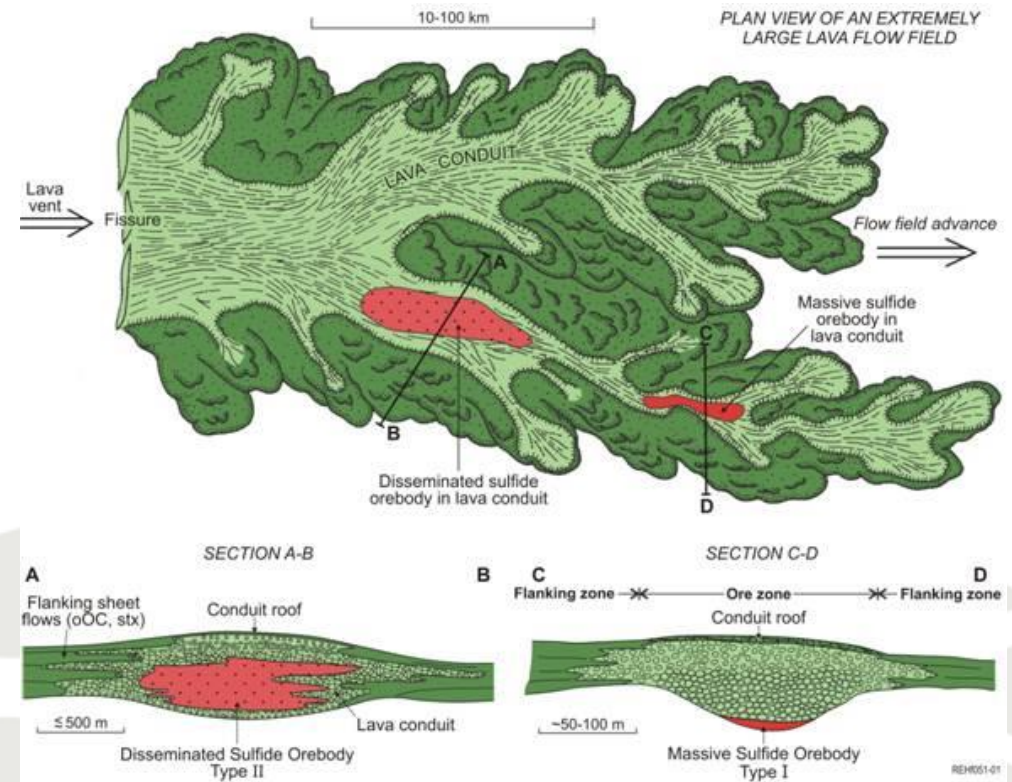


Figure 1



# Key Indicators of Nickel Sulphide Deposits?

- **Nickel sulphide deposits:**

- Occur in **ultramafic** rocks with high background nickel **>0.2%**
- Sit on the **bottom** of lava channels
- Occur next to **sulphur** containing sediments
- Can **conduct** electricity
- May contain **copper** and (PGE) platinum group elements

- **White Cliff leases have:**

- Extensive ultramafic rocks with high background nickel **>0.2%**
- **40km** of **Lava** channels
- **Sulphur** containing sediments and volcanic rocks next to ultramafic
- **Electrical** conductors
- Nickel/**copper** and **PGE soil** anomalies





# Lake Johnston

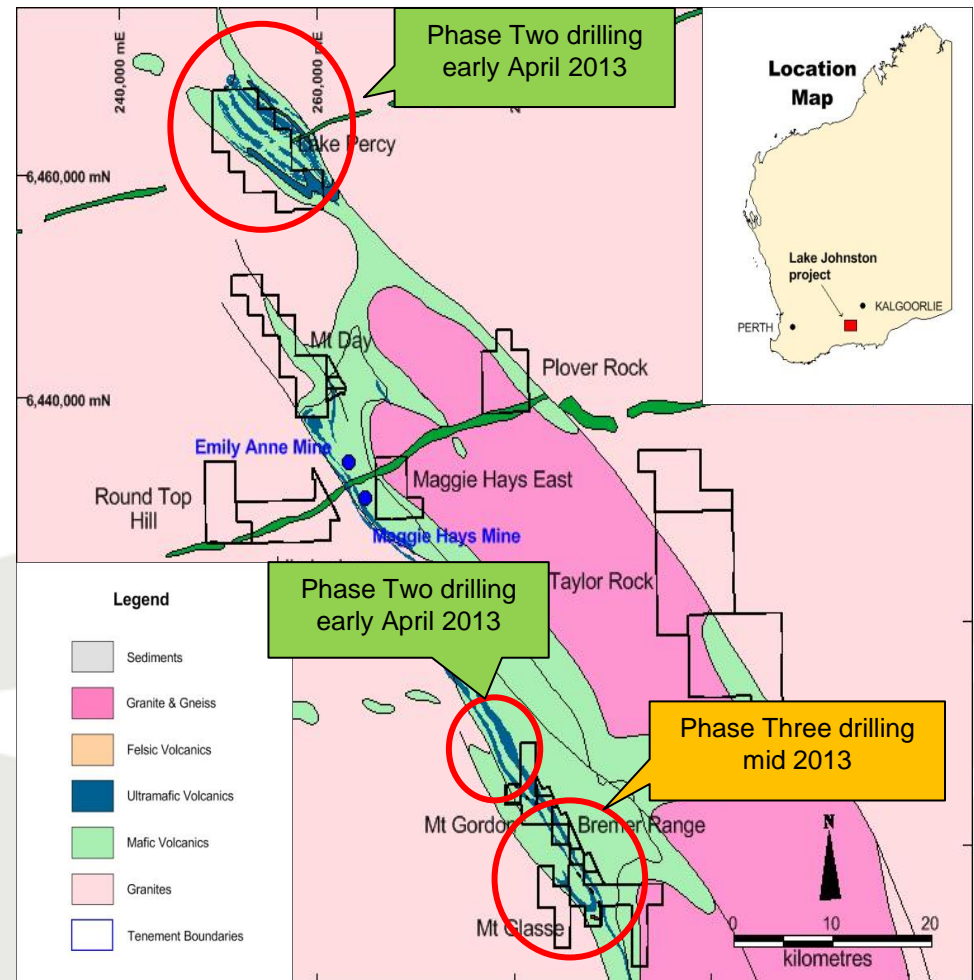
## Multiple High Impact Nickel-Copper Targets

- **Multiple High Impact Targets**

- 10+ new conductive targets
- Nickel-copper and platinum group soil anomalies associated with all targets

- **4 Key Areas of Focus**

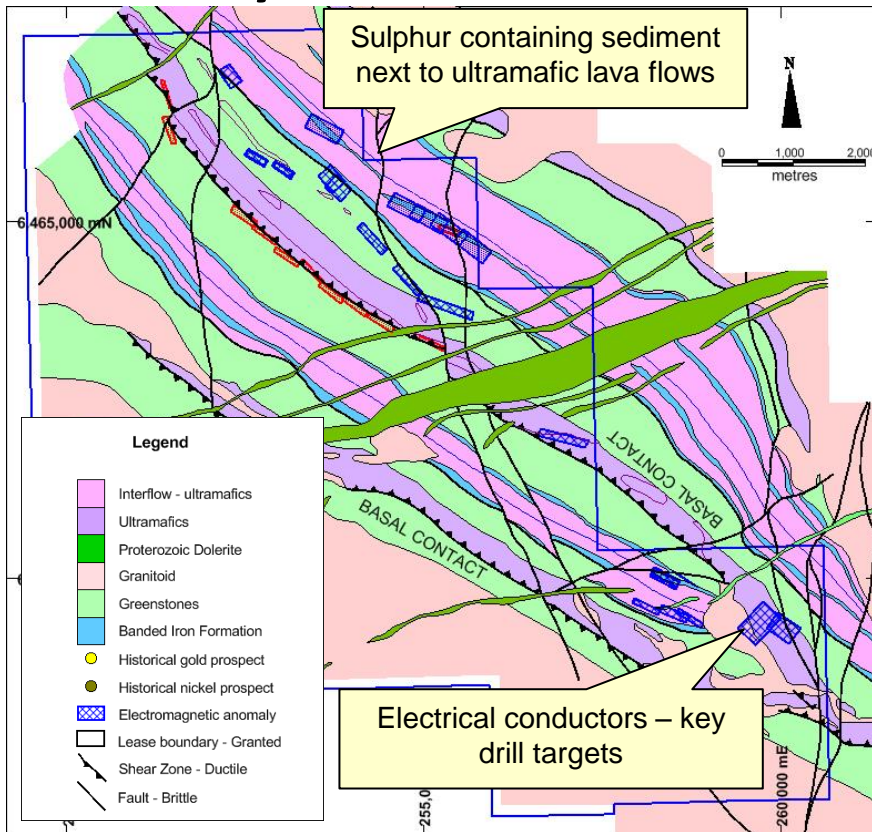
- **Mt Gordon** (Drilling early-April)
- **Lake Percy** (Drilling early-April)
- **Mt Glasse** (EM-Soils now, drilling mid 2013)
- **Bremer Range** (EM now, drilling mid 2013)



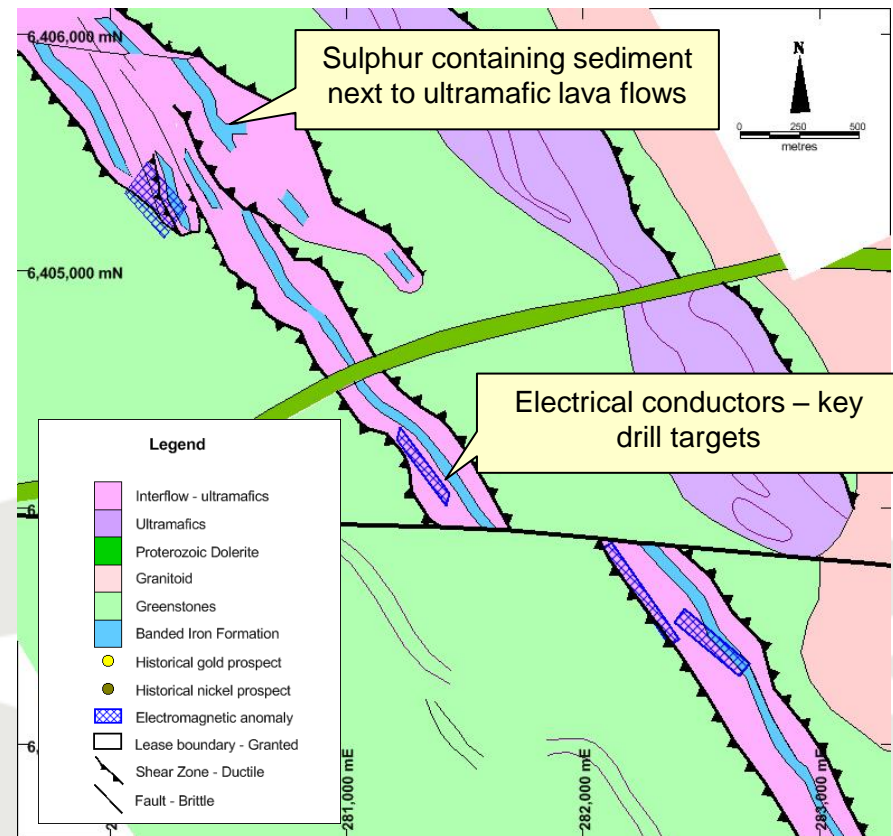


# Phase Two Drilling – Early April 2013

## Lake Percy



## Mt Gordon



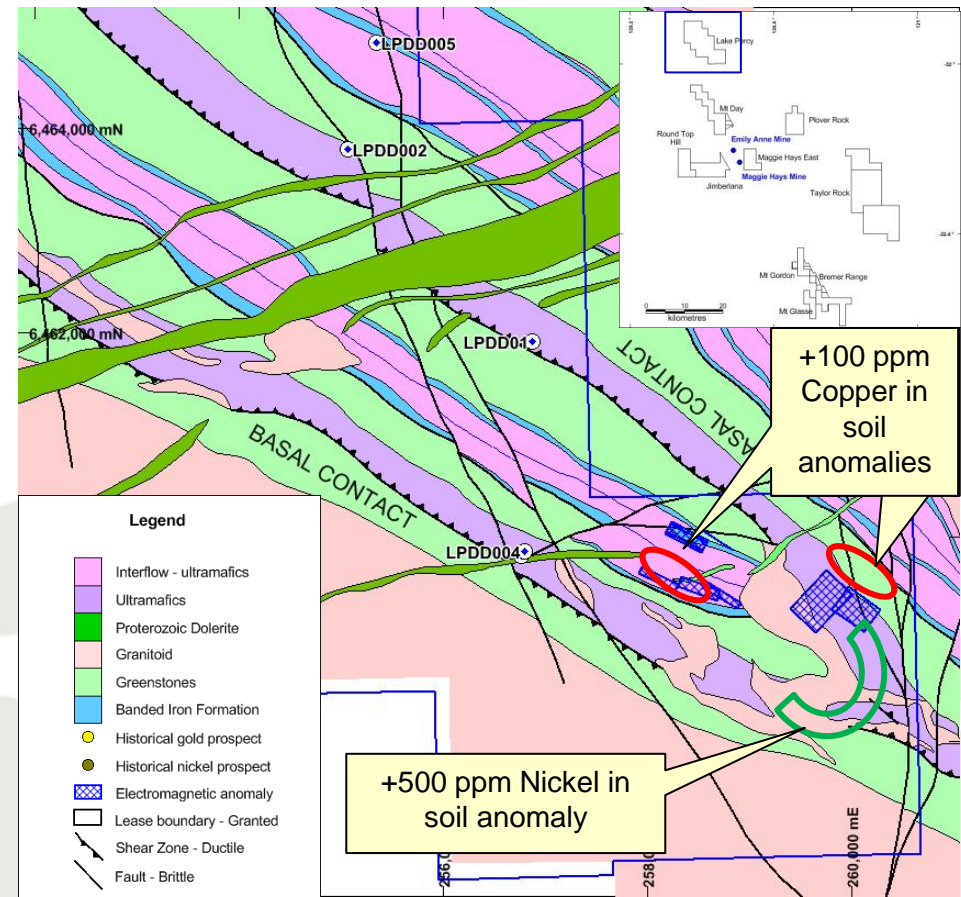
- Ultramafic rocks-high background nickel
- Sulphur containing sediments

- **Electrical conductors**
- **Nickel and copper soil anomalies**



# Lake Percy Nickel Sulphide Drilling – April 2013

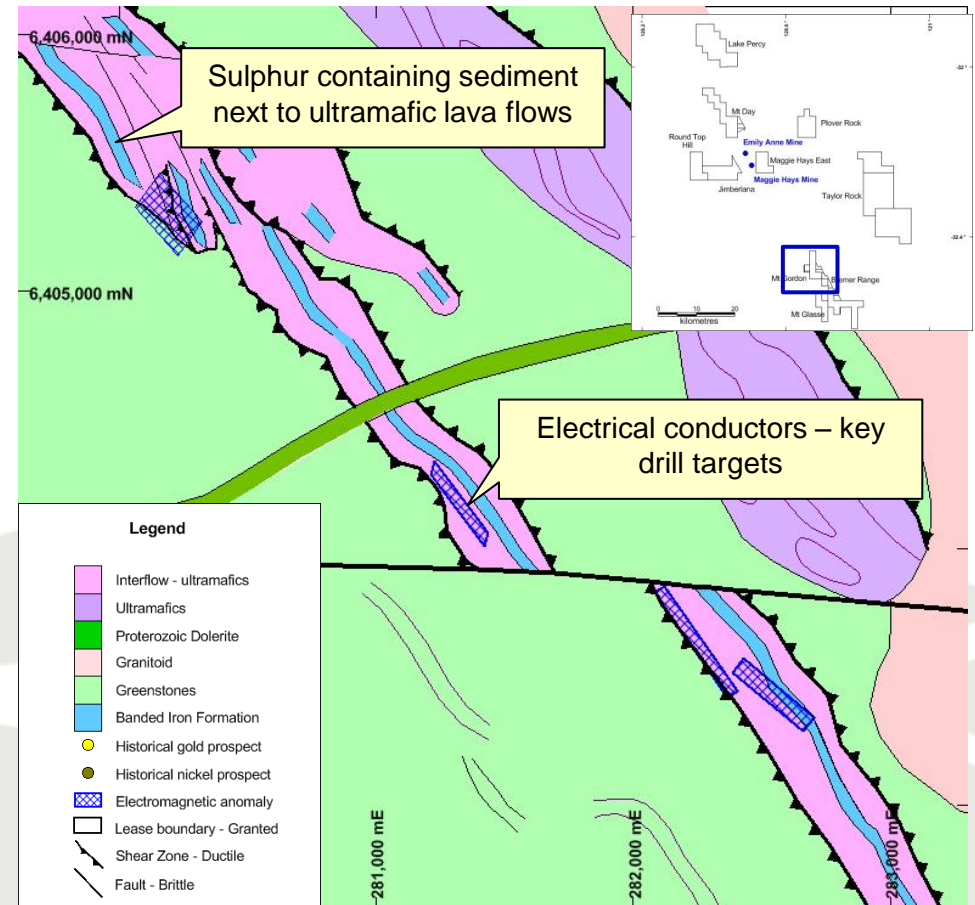
- **Testing four highly conductive EM targets next month**
  - All on basal contacts (good)
  - All with associated Ni/Cu soils (better)
  - **1000 metres/4 holes RC – drilling early April 2013**
- New soil geochemistry identifies Ni/Cu/Zn anomalies
- 20km of untested basal ultramafic contact
- Nickel sulphides identified in old drilling include **6m @ 1.7% Ni**





# Mt Gordon Nickel Sulphide Drilling – April 2013

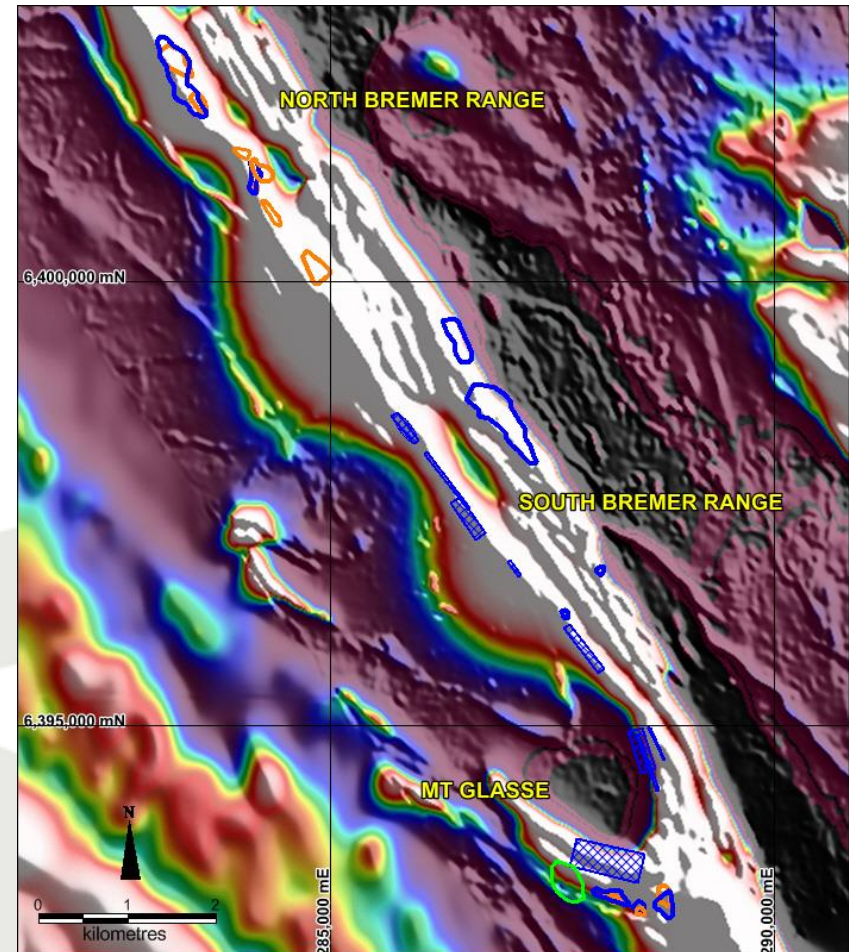
- **Testing three highly conductive EM targets next month**
  - All on basal contacts (good)
  - All with associated Ni/Cu soils (better)
  - **1,000 metres/4 holes RC – drilling early April 2013**
- Associated sediment (sulphur source)
- Same geology as Norilsk Nickel mines (next to BIF unit)
- \$150,000 EIS Government drill funding





# Phase Three Drilling - Mid 2013

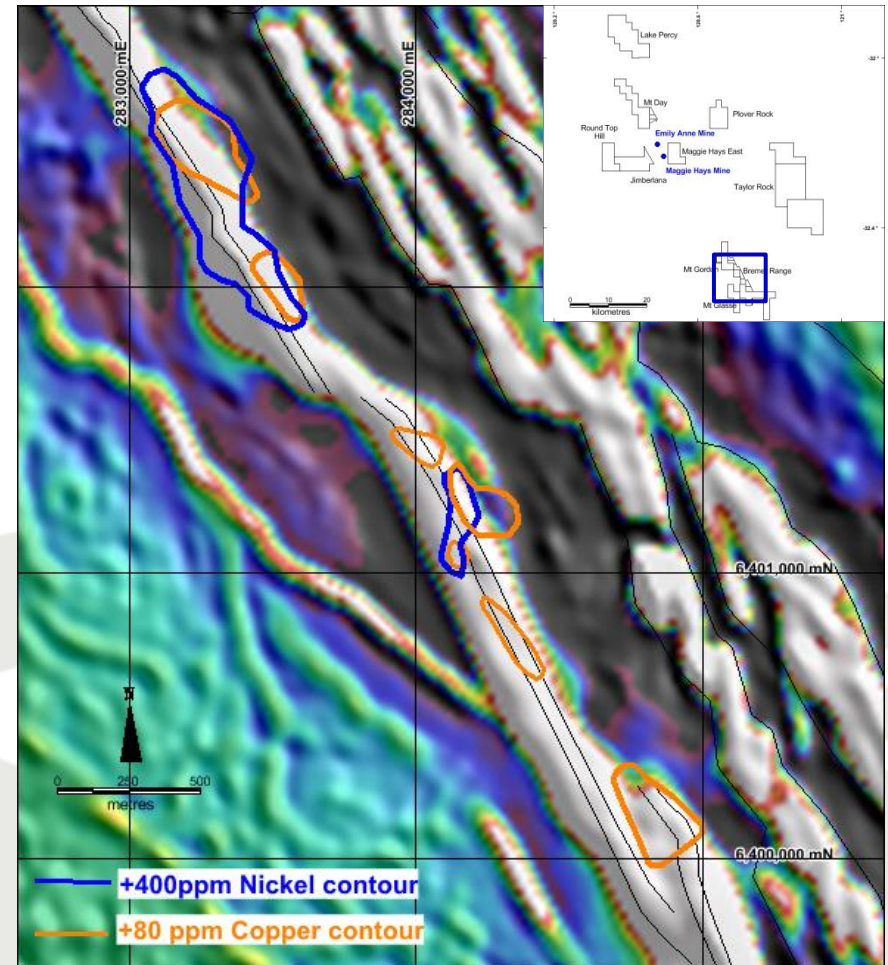
- **Bremer Range**
  - Refine EM conductors
  - Coincident nickel-copper soils
- **Mt Glasse**
  - Refine EM conductors
  - Confirm Ni/Cu and platinum group soil anomalies





# North Bremer Range – Nickel Sulphide Targets

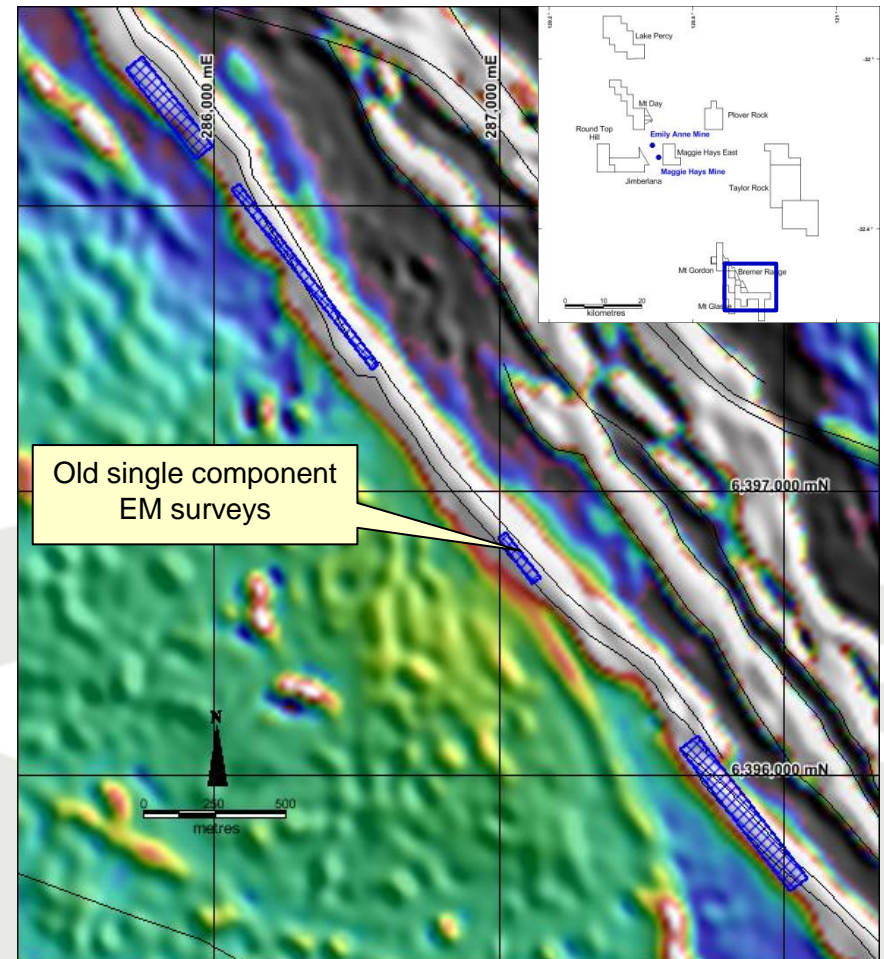
- Basal Ultramafic Contact
  - Associated sediment (BIF - sulphur source)
  - Background Ni >0.2%
- Strong Soil Anomalies
  - Nickel +400 to 800 ppm
  - Copper +80 ppm
- Planned Exploration:
  - Electromagnetic survey (underway)
  - Follow up drilling mid 2013





# South Bremer Range – Nickel Sulphide Targets

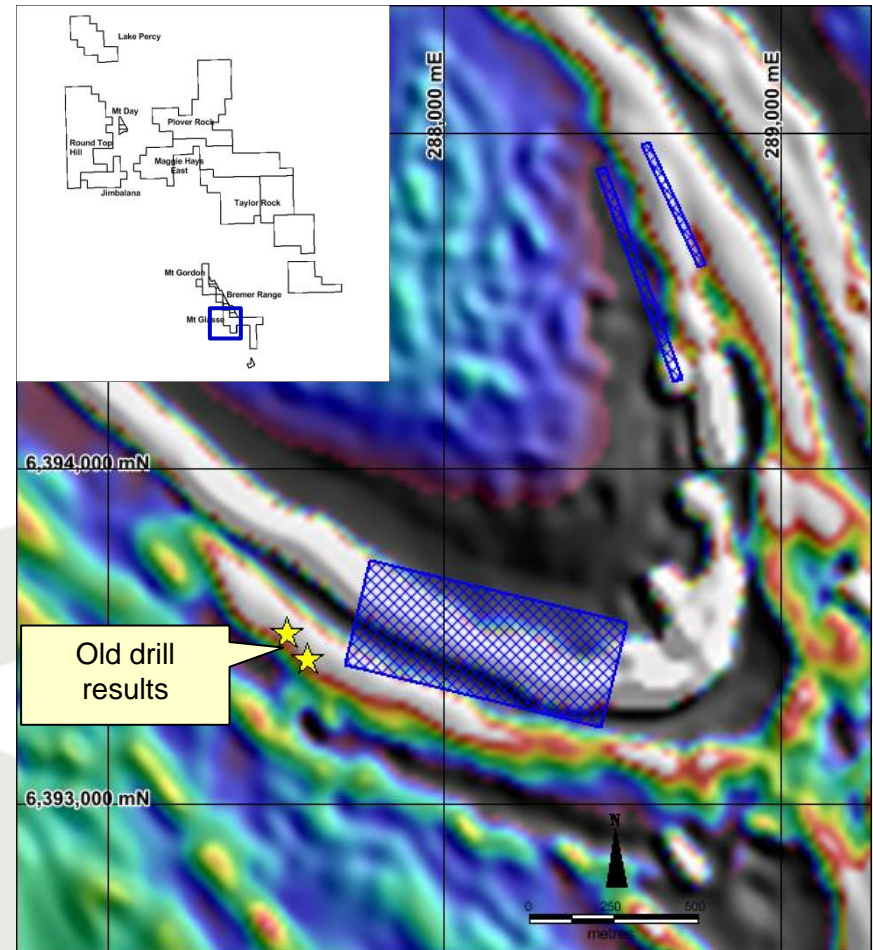
- Basal Ultramafic Contact
  - Associated sediment (BIF-sulphur source)
  - Background Ni > 0.2%
- Four Strong Conductors
  - Requires 3 component EM survey
- Planned Exploration:
  - New EM survey underway
  - Ni-Cu-Platinum group soil sampling





# Mt Glasse Nickel Sulphide Targets

- Basal Ultramafic Contact
  - Associated sediments (BIF/Felsic - sulphur source)
  - Background Ni > 0.2%
- Three strong EM conductors
  - Requires follow up EM survey
- Old drill results including:
  - 4m at **1.3% Ni** and 330 ppm Cu
  - 4m at 1.2% Ni and **500 ppm Cu**

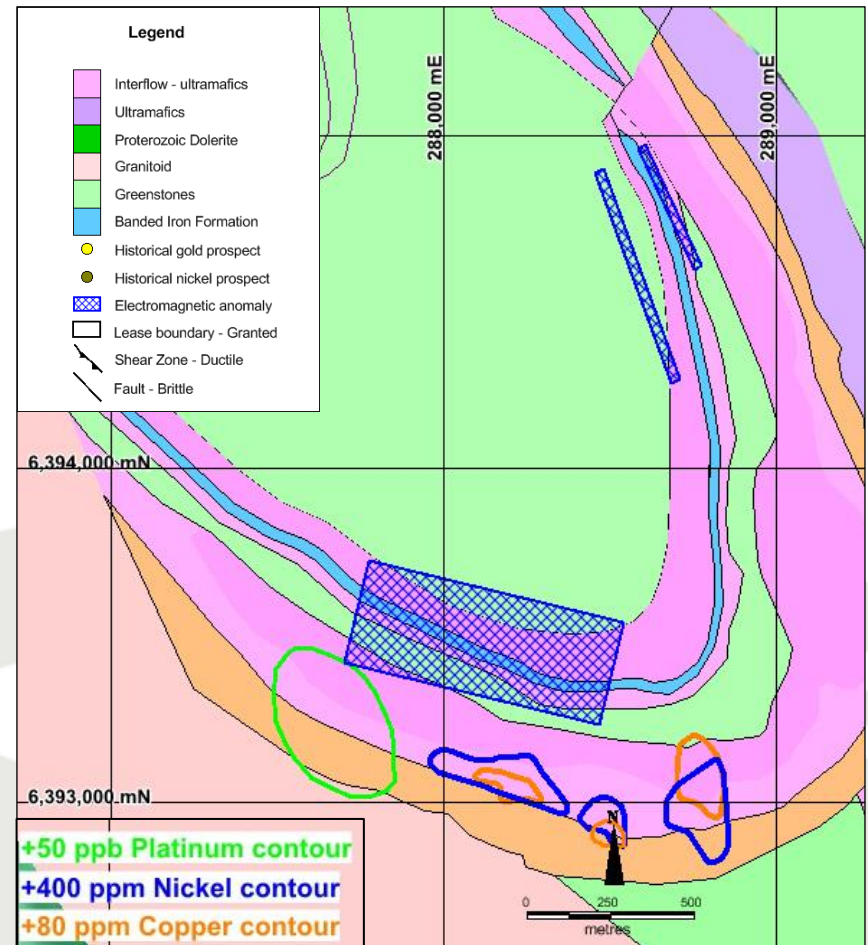






# Mt Glasse Nickel Sulphide Targets

- Strong soil anomalies
  - On basal contact
  - Felsic sediment
  - Nickel + 400 - 1200 ppm
  - Copper > 80 ppm
  - Platinum-Palladium >50ppb
- Planned Exploration:
  - New EM survey underway
  - Ni-Cu-Pt soil sampling -done
  - Follow up drilling (1,000m)





# Investment Summary

- **Fully funded and highly leveraged to exploration success**
- **Multiple EM Conductors**
  - Basal ultramafic contacts
  - Associated sediments/felsic
  - Background Ni > 0.2%
- **Multiple Soil anomalies**
  - On basal contacts
  - Nickel + 400-1200 ppm
  - Copper > 80 ppm
  - Platinum-Palladium >50ppb

- **Phase Two Exploration**
  - Drilling early April 2013 (2,000m)
  - EM surveys (50 line km)
  - Soil sampling (100 line km)
- **Phase Three Drilling**
  - Drilling mid-2013 (1,500m)
  - Follow up phase two EM/Soils
- Two **nickel** deposits in entire belt - **More to be found!**



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