THE WESTERN EYRE PENINSULA – BASE METAL AND IRON MINERALISATION IN ARCHEAN META-SEDIMENTS AND VOLCANICS

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Location of Projects
South Australia
GEOLOGICAL SUMMARY

- Sequence dated at 2520Ma (SHRIMP U-Pb zircon)
  Two high grade deformational events and two retrograde events

- One deformational event at 2420Ma (Sleafordian)

- Sequence composed of marbles, dolomites, silicate, sulphide and oxide iron formations, quartzites, calc-silicates, graphitic and non-graphitic meta-pelites, 2-pyroxene granulites, 2-pyroxene-K-feldspar-quartz rocks, meta-felsic, mafic and komatiitic volcanics

- Pre-tectonic and post-tectonic granitoids and mafic/ultramafics are present. No Hiltaba age granitoids are present.

- Problems with Hutchison Group and Archean sub-divisions

- Depth to basement averages 36m. Tertiary and minor Permian cover dominates.
MAJOR PROJECTS & PROSPECTS
WESTERN EYRE PENINSULA

- Bramfield iron project
- Malache zinc project
- Oakdale copper-zinc VHMS project
- Mt. Hope gold prospect
- Tooligie zinc project
Approximately 25 kimberlites and ?leucite lamproites on the tenements

High Ta values adjacent to the Conical Hill Kimberlite

Various calcrete Au and base metal anomalies

Kappawanta vanadiferous magnetite prospect (contained within a zoned mafic-ultramafic intrusive)

Other mafic-ultramafic complexes as yet untested

Tertiary sediments containing high concentrations of zircon, rutile and oxidised ilmenite

Palaeochannels containing lignitic sands, lignite and “clean” quartz sands

Tooligie “basin” containing thick lignite
BRAMFIELD IRON PROJECT

- an exciting iron ore opportunity -
BLDD06
37.8m @ 40.4%Fe

BLDD07

IRON ORE
TARGET AREA

Bramfield

EL3301

500 000E

502 000E

504 000E

0 200km

500 000E

502 000E

504 000E

0 200km

Bramfield

Whyalla

Elliston

Port Lincoln

Adelaide

BLAMFIELD
PROJECT
Marbles and Calc - Silicates

Iron Formation

Tertiary - Permian Cover

Surface

BLD006

Magnetic

Profile

Fe %

0 - 10
10 - 25
25 - 35
35 - 60

W 500 100E
E 500 500E

37.8m @ 40.4% Fe
87.3m - 125.1m

BRAMFIELD PROJECT
Cross Section 6281700mN
BLDD06 37.8m @ 40.4%Fe

Additional Iron Ore Targets

Bramfield Project
Iron Ore Targets

Bramfield
A large magnetic anomaly in excess of 2,500m in length near the coast at Elliston.

Recent low level heli-mag survey confirms the extent and magnitude of the anomaly.

A reconnaissance diamond drill hole in early 2006 to test the western contact of the iron formation returned 37.8m @ 40.4% Fe with low P (865ppm).

The extent of the anomaly suggests that a large tonnage of high grade iron mineralisation can be expected.
MALACHE BASE METALS PROJECT

- potentially high tonnage breccia hosted zinc mineralisation contained within a major structure cutting Archaean gneisses -
MALACHE PROJECT
Anomalous Base Metal Intersections

BLA1174
12m @ 0.21% Zn

BLA1172
6m @ 0.11% Zn

BLA1099
11m @ 0.14% Zn

BLA1166
11m @ 0.21% Zn
17m @ 0.15% Pb

BLRC002
14m @ 1.66% Zn, 0.41% Pb, 3.4 ppm Ag

BLA1156
32m @ 0.18% Zn

BLA1150
6m @ 0.10% Zn

EL3126
EL3149
EL3150
EL3301

TARGET ZONE

BLDD004
19.2m @ 1.77% Zn, 0.86% Pb, 3.5 ppm Ag
3.07m @ 4.92% Zn, 3.3 ppm Ag

Reverse Circulation drillhole
Diamond drillhole
Aircore drillhole with Anomalous Zn/Pb
BLDD04

Tertiary Cover

Intense saprolite development

Amphibolite and pegmatitic intrusives; minor sillimanite - cordierite gneiss

Intrusive meta - dolerite

Strongly deformed quartz - feldspar - biotite - sillimanite (± cordierite ± graphite ± sulphides) gneiss. Late sphalerite ± galena bearing crackle fractures and veins.

Plagioclase - biotite - garnet gneiss.

Light coloured, bleached, in part milled, sphalerite galena - bearing breccia

Layered, garnet - bearing feldspathic gneiss

Sphalerite ± chalcopyrite bearing breccia

92.3m @ 0.7% Zn

19.2m @ 0.9% Pb

2.5ppm Ag

3.1m @ 4.9% Zn

Retrogressed, quartz - plagioclase - garnet - biotite ± cordierite gneiss. Crackle fractured.

Location : Malache Prospect
Declination : 60°
Azimuth : 38° (mag)
Decompressive fracturing of quartz vein material associated with clays and sphalerite

BLDD04 121.8m

Mag. x 50; length of photomicrograph = 2.6mm; PPL
Highly fractured pegmatite exhibiting abundant introduced sphalerite
BLDD04 145.90m
The groundmass of this breccia is dominated by sphalerite.

The sample contains
32.23% Zn,
1.83% Cu,
34g/t Ag,
85ppm Ga,
71ppm Ge
Large fragment of sphalerite in milled breccia

BLDD04 148.37m

Mag. x 20; length of photomicrograph = 6.5mm; PPL
Zoned sphalerites in breccia. The white tabular bands are Fe-absent sphalerite.

BLDD04 174.88m

Mag. x 20; length of photomicrograph = 6.5mm; PPL
Iron-free sphalerite vein cutting zoned, low-iron sphalerite crystal

BLDD04 174.98m

Mag. x 50; length of photomicrograph = 2.6mm; PPL
Reflected light view of the previous slide. The low-Fe sphalerite vein contains less inclusions.

BLDD04 174.98m

4% Fe in ZnS

0.1% Fe in ZnS vein

Mag. x 50; length of photomicrograph = 2.6mm; reflected light
Comb-textured quartz vein containing sphalerite and cutting breccia

BLDD04 145.90m

Mag. x 50; length of photomicrograph = 2.6mm; x-nicols
Malache Base Metals Project

- Diamond drill hole BLDD04 intersected 92.3m @ 0.7% Zn from 83.4m to 175.7m including:
  - 19.2m @ 1.77% Zn, 0.86% Pb and 3.5ppm Ag from 141.0m to 160.2m
  - 3.1m @ 4.9% Zn and 3.3ppm Ag from 172.6m to 175.7m

- The “breccia hosted zinc” mineralisation is present as low temperature milled and angular breccias and adjacent crackle breccias and fractures which cut across a high metamorphic grade (transitional granulite-facies) meta-sedimentary and volcanic sequence

- Sphalerite in the mineralisation is Fe-poor and hosts high concentrations of In, Ge and Ga
- RC drill hole (BLRC002) 4.2km to the ESE intersected 14m @1.66% Zn, 0.41% Pb and 3.4g/t Ag

- Pb isotopic compositions suggest a Palaeozoic age for mineralisation

- Mineralisation tends to be S-poor with sphalerite, lesser galena, minor chalcopyrite and primary marcasite and minor (pre-existing) pyrrhotite. Gangue minerals include quartz, calcite, sericite, gypsum and clay minerals.

- Major structures which parallel the Malache trend are untested

- Calcrete sampling and structural interpretation indicate that this structure could be mineralised for ~10km

- The objective is high tonnage, open cut, zinc mineralisation
OAKDALE BASE METALS PROJECT

- good potential for Archaean Cu-Zn VHMS mineralisation
  associated with komatiitic to felsic meta-volcanics and
  associated fine grained meta-sediments and exhalites -
Interpreted sequence containing Volcanic Hosted Massive Sulphide (VHMS) mineralisation

- Diamond hole with anomalous Zn/Pb
- RC hole with anomalous Zn/Pb
- Aircore hole with anomalous Zn/Pb

OAKDALE PROJECT
TMI Aeromagnetic Image
Graphitic schists and gneiss, amphibolite, garnet - biotite - plagi gneiss

Amphibolite, graphitic, amphibolites quartz - plagi - biotite gneiss, graphitic, pyrrhotite - rich schist (± K - feldspar ± garnet ± cordierite ± sillimanite)

Graphitic - pyrrhotite rich schist, graphite - bearing amphibolite, minor quartz - plagi - biotite ± garnet schist / gneiss.

Banded calc - silicates, graphite and pyrrhotite - rich schists, massive pyrrhotite.

Foliated pyrrhotitic, sillimanite - quartz - plagioclase - biotite - K - feldspar gneiss (graphitic).

Amphibolite

Quartz - biotite - sillimanite - plagioclase - K - feldspar gneiss; no graphite and only rare pyrrhotite.

Garnet amphibolite

Graphitic, biotite - chlorite - garnet schist, graphitic schist.

Forsterite marble, pink marble, intercalated meta - pelite and marble; major fault structure present.

Banded, quartz - plagioclase - K - feldspar - biotite gneiss; commences with sillimanite - quartz rock (± K - feldspar).

OAKDALE PROJECT
Summary Diamond Drill Logs
BLDD02 and BLDD03 (400m apart)
Banded calc-silicate from BLDD04. White bands are quartz-rich with lesser orthopyroxene or apatite and darker bands contain pyroxenes, Fe amphiboles, garnet, pyrrhotite and graphite.
Pyrrhotite-graphite-sillimanite schist
BLDD02 204.00m
Previous JV partners outlined a major SQUID EM target in the area.

Diamond drilling has intersected major iron sulphide-rich, volcanogenic massive sulphide containing anomalous Zn, confirming the company’s geological model.

Exploration to concentrate on locating Zn-Cu (± Pb) massive sulphides in the Oakdale sequence.

This sequence is complexly folded and repeated and can be traced from Tooligie to Mount Hope, a distance of approximately 50km.
• Initial Pb-isotope investigations suggest Archean Pb, different to that at Malache

• Other air-core holes in the Oakdale sequence have intersected anomalous zinc but have not yet been followed up

• The sequence is apparently overturned, at least in the Oakdale area
Lynch Mining Pty Ltd is a privately owned and operated mining and mineral exploration company.

There is potential for a large tonnage of high grade magnetite mineralisation at the Bramfield Project.

The zinc mineralisation intersected at the Malache Project contains significant Ge, Ga and In. Fe in sphalerite is low (0.1%-4% Fe, average 2.1%) as is Mn (generally <0.01%) and Cd (generally <0.1%).

Potential for Cu-Zn mineralisation (VHMS) exists in the Oakdale Project area; massive pyrrhotite with anomalous zinc already intersected.
Numerous untested targets such as Mt. Hope, (500m wide zone with anomalous gold in saprolite; 0.1-0.7ppm Au), Kappawanta (vanadiferous magnetite) and potential for zircon, rutile, lignite, uranium etc. in the cover rocks of the tenements.

Ground magnetics (850 line kms), low level heli-magnetics (5000 line kms), calcrete sampling and diamond/rotary mud drilling (3000m) were carried out during 2006.

Lynch Mining Pty Ltd plans to spend $2.5 million on exploration during 2007 which includes 18,000m of drilling (10,000m aircore; 8000m diamond drilling).

Lynch Mining Pty Ltd wishes to thank PIRSA for their support during 2006.