ASX ANNOUNCMENT

8 March 2012

ASX Code: DTM

Investment Data

Shares on issue 157.5m
Unlisted options 8.35m

Shareholders

Top 20 Hold 37%

Key Projects / Metals

- Unicorn Porphyry Mo-Cu-Ag
- Morgan Porphyry Mo-Ag-Au
- Mountain View Lode – Au

Mo – Molybdenum
Cu – Copper
Au – Gold
Ag – Silver

Board & Management

Chairman

Mr Chris Bain

Managing Director

Mr Lindsay Ward

Executive Directors

Mr Dean Turnbull
Manager – Exploration

Non-Executive Directors

Mr Stephen Poke
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UNICORN GEOLOGICAL REVIEW PAPER – PUBLISHED BY AIG

Dart Mining NL is pleased to report that the Australian Institute of Geoscientists (AIG) has published a paper on the similarities between Unicorn and the Henderson / Climax deposits in Colorado (USA) in the February 2012 edition of AIG NEWS. The paper was written by geological consultant and former Dart Mining director Bernhard Hochwimmer (B. Hochwimmer & Associates Pty Ltd) and details the geological setting of Climax style deposits and the key similarities with the Unicorn deposit. Dart Mining would like to acknowledge the cooperation of the AIG in allowing the reproduction of the paper as it appears in the February edition of AIG NEWS, a quarterly publication only available to AIG Members. The detailed discussion of the geological setting of the Unicorn and Henderson / Climax style porphyry molybdenum systems draws upon extensive research and a long mining history of these systems in the USA.

Key observations presented in the paper include:

- "…The Unicorn Mo-Cu-Ag porphyry in northeast Victoria is the first Climax-type Mo discovery in Australia and heralds a newly emerging molybdenite province within the SE Lachlan Fold Belt, (LFB)…"

- "…The Climax-type porphyry is one of the rarer types, known mostly from only thirteen examples in the North American Cordillera, compared to hundreds of copper porphyries known worldwide. Unicorn is therefore of great importance to Australia, and Victoria in particular, by showing the discovery of a Climax-type porphyry is possible outside the North American Cordillera…"

- "…Unicorn also displays one of the most important Climax-type features - stacked mineralisation shells that results from multi pulsed intrusions or multiple cupola intrusions resulting in vertically stacked ore shells such as Climax, Mt Emmons, Urad and may in addition include laterally compounded intrusive centres, such as at Henderson…"

- "…Modelling continues to outline lateral and depth targets, analogues to Colorado's high palaeo level Urad deposit, with a potential Henderson like giant depth target which under plated Urad. A nearby 1 km diameter concealed depth cluster target near the Unicorn deposit also occurs as the eastern geochemical anomaly…."

The full paper is reproduced from the February edition of AIG NEWS below for your information and can be downloaded from the Dart Mining website: (www.dartmining.com.au).

About AIG

The Australian Institute of Geoscientists (AIG) is a leading professional institute representing geoscientists in all professional sectors throughout Australia. AIG members include professionals from the fields of mineral, coal and petroleum exploration, geophysics, geochemistry, environmental geoscience, engineering geology, mining geology and hydrogeology, as well as those who use geoscience skills in management, research, education, consulting, computing and information systems. AIG only accepts membership applications from individual geoscientists. The Institute does not accept company members.

The AIG NEWS is published to members quarterly and contains industry related news and events and is a forum for the presentation of scientific discussions of exploration and mining related topics. The AIG has reached a membership of some 2000 geoscientists and in conjunction with the Geological Society of Australia (GSA) hosts numerous seminars, talks and conventions throughout Australia.

About M**olybdenum**

Molybdenum is both a traditional and new age / future metal with unique characteristics. Its primary use is as an essential metal in the manufacture of steel where it adds strength, hardness and toughness as well as increasing steel's resistance to corrosion. Molybdenum also has a range of chemical uses including acting as s a catalyst to remove impurities, including sulphur, during crude oil production. Molybdenum is also used in the paint and plastics industry.

Molybdenum has a growing use in the renewable energy sector where it is used in the manufacture of solar panels and has a potential use as the electrode plate for the separation of hydrogen and oxygen to produce hydrogen energy. Molybdenum is also used in nano technologies to make electrical goods smaller.

Molybdenum is traded on the LME and has worldwide demand of ~ 220,000 tonnes pa that is growing at 5% pa.

About Dart Mining

Dart Mining NL (ASX:DTM), a Victorian-based exploration company, has discovered a new mineralised province hosting molybdenum (Mo) + copper (Cu) + silver (Ag) mineralised climax style porphyry igneous intrusive. The Dart Mining mineral province occurs within the Lachlan Fold Belt near Corryong in north east Victoria and is the only known Australian host of Climax style porphyries which are proven hosts of world class mines around the world. The Lachlan Fold Belt and Gilmore suture that cross from NSW into Dart Mining's tenements in Victoria are proven hosts of substantial porphyry mines including North Parkes, Cadia and Ridgeway in NSW and the Benambra VMS to the south of Dart Mining's tenements in Victoria.

Dart Mining recently announced its maiden JORC Resource for its principal project Unicorn, which has very strong geological similarities to the world class Henderson primary Mo mine in Colorado, USA. Dart Mining tenements remain largely underexplored and the potential for identifying additional mineralised porphyries is very strong.

Dart Mining also has two gold projects including Mountain View where drilling identified high-grade gold along a 150 metre strike with results including 6m @ 7.8 g/t Au (including 2m @ 19.3 g/t Au) and 4m @ 8.72 g/t Au (including 1m @ 18.75 g/t Au) as well as the Fairley's disseminated gold prospect where drilling has confirmed the presence of a very large (up to 22 metres in width) disseminated sulphide related gold system.

Australian Institute of Geoscientists

AIG NEWS

Quarterly Newsletter • No 107 • February 2012

The Unicorn Climax-type Mo Porphyry – a Urad-Henderson Analogy

Introduction

By Bernie Hochwimmer, Member

The Unicorn Mo-Cu-Ag porphyry in northeast Victoria is the first Climax-type Mo discovery in Australia and heralds a newly emerging molybdenite province within the SE Lachlan Fold Belt,(LFB), with some spatial analogies to the Urad Climax-type Mo deposit at Red Mountain, Colorado. Exploring basal sections of Unicorn may reveal analogies to basal areas of Urad, where indications of remanent high Mo grades exist, now largely destroyed by the Red Mountain Porphyry from eruptive processes.

Unicorn differs from the typical Climax-type, which only features molybdenum, in that it is a metallogenic hybrid with significant copper, and attributed to its near arc and suture tectonic

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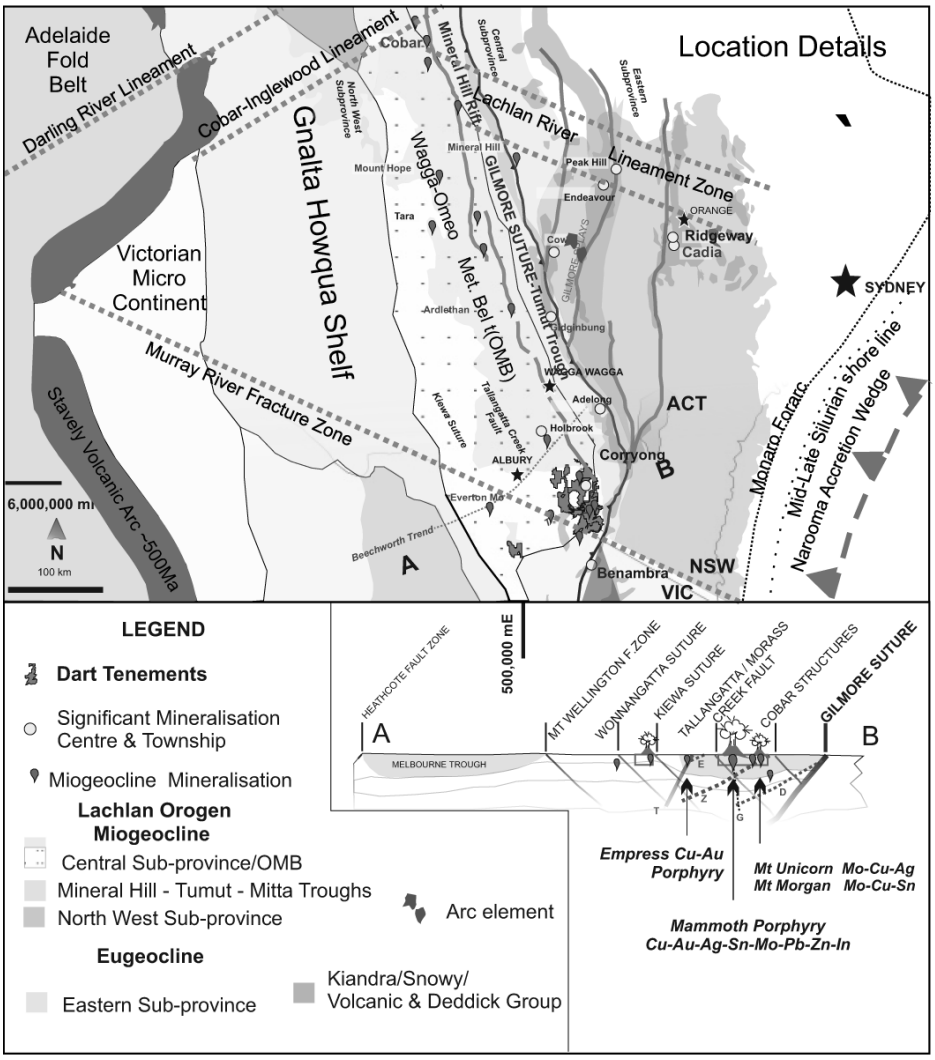

Figure 1: Tectonics

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The Unicorn Climax-type Mo Porphyry – a Urad-Henderson Analogy

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position compared to the Typical Climax-type that generally occurs further in the back-arc; It also has higher silver content as a result of its low fluorine content. (High fluorine porphyry's generally having less than 1.5g/t Ag). The Climax-type porphyry is one of the rarer types, known mostly from only thirteen examples in the North American Cordillera, compared to hundreds of copper porphyries known worldwide. Unicorn is therefore of great importance to Australia, and Victoria in particular, by showing the discovery of a Climax-type porphyry is possible outside the North American Cordillera. The Climax-types are typically formed in extensional environments while the quartz monzonite-type Mo deposits (QM-Type), typically the most common in the North American Cordillera and other parts of the world, formed in compression environments (Laznika, 2006). Unicorn also displays one of the most important Climax-type features - stacked mineralisation shells that results from multi pulsed intrusions or multiple cupola intrusions resulting in vertically stacked ore shells such as Climax, Mt Emmons, Urad and may in addition include laterally compounded intrusive centres, such as at Henderson. Vertical growth can be underplated with new penetrative stock or over-plated as renewed growth about an existing cupola core, as in the case of Climax's porphyry rhyolite shell growth comprising the Bartlet stock. Shell growth is effected by rhyolite streams about edges of cores to apical plumes (Carten, 1988).

Mt Unicorn Mo-Cu-Ag Climax-type Porphyry

Unicorn, like all Climax-types, is hosted in a bimodal rhyolitic porphyry dome complex within which differentiated, highly siliceous, magmatic lobes grow about less differentiated cupola cores that often have micro-granitic to porphyritic granite textures. Rhyolitic textures typically range from very fine siliceous aphanites in top sections with sparse small quartz and feldspar phenocrysts, increasing porphyritic quartz and feldspar (QFP) in mid sections and basal cores with coarser matrix. This sequence may be repeated. In the Climax-type these sequences may be compounded laterally, or parts of the sequence may be repeatedly stacked vertically. Compositional variation is diagnostic of the Climax-type, verging towards either highly siliceous or potassic rich feldspar phases zoned vertically in layers or shells. Unicorn's largest siliceous layer outcrops centrally on the surface Mo anomaly within which 9 diamond holes have been drilled from shallow to moderate depths up to 575m. Locally termed the Silica Lithocap (SLC), its outcrop includes prominent silica bluffs on the NW Unicorn Ridge. It is not a true silica lithocap in the sense of barren silica expanses overlying some copper porphyry's, being highly mineralised with combined Mo-Cu-Ag, and resembles the high silica zones of the Climax and Henderson deposits. The SLC is aproned with white siliceous Pinnak Formation hornfelds, haematitic grey-yellow to red QFP, pyritic aplite, a NE ring dyke segment and Southern Collapse Breccia, all more or less molybdenum bearing. Mineralisation temperatures exceeded 600ºC, evident as high temperature quartz-Mo stockwork, often mottled grey, some containing clots and seams of potassic feldspar, sericite and hydrothermal biotite. Fine molybdenum occurs as films, grains, aggregate clots and veinlets, bordering quartz veinlets (Figure 10). Veins contain pyrite as part of the quartz-sericite-pyrite-green biotite (low Na+/H+ activity type) phyllic alteration series, after potassic-Mo, but not exclusively. This potassic-Mo-phyllic-pyrite time gap is very short or coincident at Urad (Wallace, 1978), likely a function of Urad's curtailed and disrupted near surface depositional environment, and longer at Henderson. Veins may have irregular boundaries indicative of occupying former solution channels within rhyolitic host, rather than entirely open spaces, more commonly seen with hydrothermal veins penetrating microgranite and micromonzonite core and wall rocks. Unicorn's potassic and phyllic alteration is laterally coincident, with vertical stratification, typical of the Climax-type. Some magnetite-minor rutile-sericite-quartz-haematite appears to be an early to mid alteration phase, consistent

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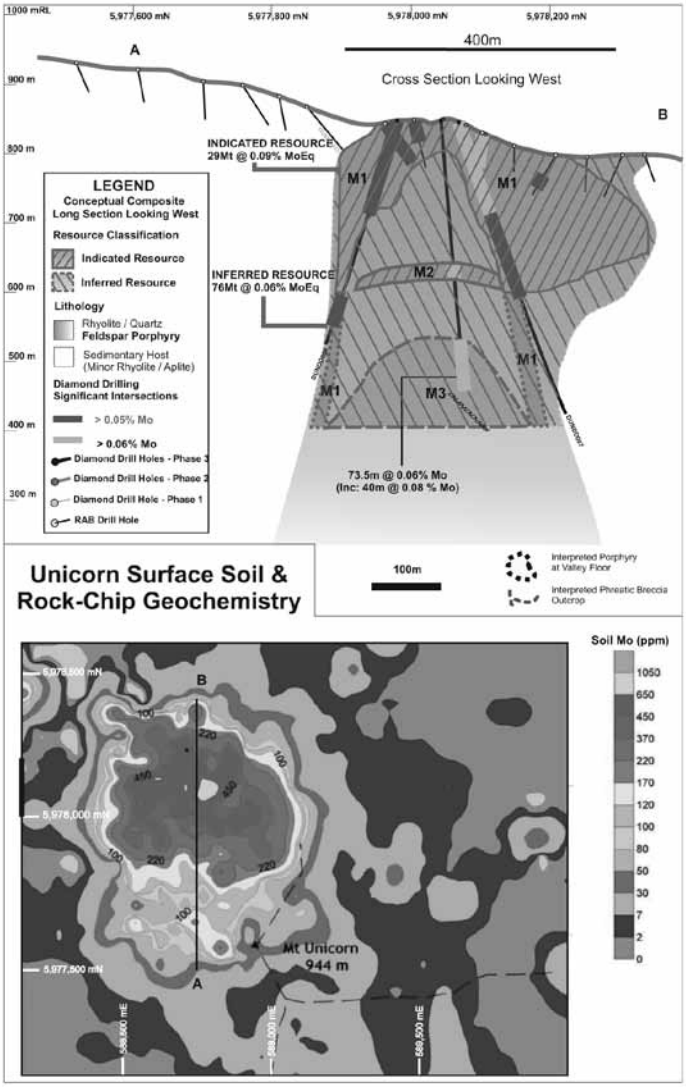

Figure 2

The Unicorn Climax-type Mo Porphyry – a Urad-Henderson Analogy

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with Henderson mid magnetite phase (Seedorf and Einaudi, 2004). Late retrograde alteration includes extensive argillite and propylitic style chlorite-epidote-carbonate-pyrite. Extensive late argillite alteration occurs at Urad and Unicorn, but not Henderson. Common greisen comprising very coarse sericite-topaz underlies Henderson in vicinity of its granite core but has not been seen at Unicorn, though rare medium grained sericite has. These features, along with very common flat fractures in the SLC, some containing gossanous pebble breccia, are all consistent with a high depositional palaeolevel for Unicorn.

In addition to hydrothermal characteristics, the Unicorn body typically displays a range of textures and veins indicative of direct magmatic fluid alteration and mineralisation from autometasomatism of very hydrous and volatile laden rhyolitic magmas. These include Universal Solidification Textures (UST's) and micrographic textures as granular or micro aplite, grading away from UST, indicative of hydrothermal fluid accumulation, prior to overpressure quenching. UST's, more often grow on magma lobe boundaries and comprise rhythmic bands of mainly quartz, sometimes orthoclase, with increasing lamina grain size and euhedral faces having terminals growing towards intrusive lobe centres (Shannon, 1982). They also occur at contacts with cores, where they may reach pegmatite proportions. Occasionally fine feathery plumose UST's of quartz and orthoclase are noted. 'Brain Rock' UST, so named from its stacked and convoluted lamina is also noted at Unicorn (Figure 11). So called "dyke UST" also occurs at Unicorn, comprising closely spaced apposing sets such as in rhyolite sill injections that may be less than 20m wide and otherwise indistinguishable on chemistry or general textures, and range down to rhyolite vein size. (They require careful attention; one boundary may

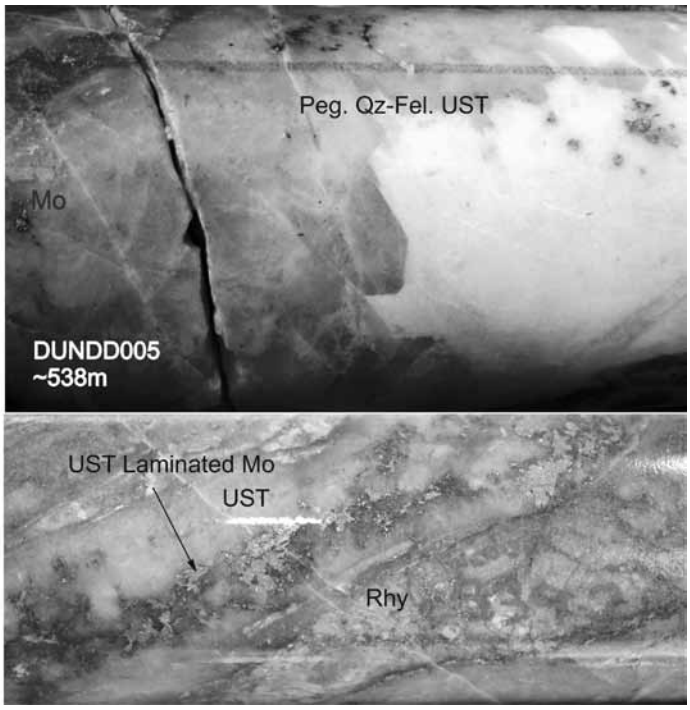

Figure 3

point toward the sill centre, the other toward the centre of the magma chamber). Rare UST are noted in some pegmatites and tin porphyries but UST's of all these styles occur only in Climax-type mined and at Unicorn and play an important role in mapping rhyolitic porphyry lobes. The Climax-type contains pure orthoclase. Albite groundmass replacement by 'pure' orthoclase was established in Unicorn's SLC via CSIRO SEM petrography confirming a pure $KAlSi_3O_8$ composition in close association with molybdenite (Purvis, 2008). This diagnostic Climax-type feature is indicative of a separate hydrothermal fluid accumulation prior to overpressure relief and fluid release. Significantly, SEM work established adularia in the SLC, indicating a rapid cool transition, supporting textural, structural and alteration attributes for Unicorn's deposition at high palaeolevel, perhaps within 1km of the surface, similar to Urad (Wallace, 1978).

Drilling of the Unicorn body shows that the central rhyolite porphyry dome mass occupies a narrow channel, resembling that of Urad's original volcanic vent. Unicorn's rhyolitic porphyry host package is entirely mineralised with arcuate bands or shells of higher grade Mo-quartz stockwork mineralisation having inverted bowl like shapes stacked vertically (Figures 2 & 6), typical Climax-type mineralisation, resulting from multiple pulsed rhyolitic porphyry injections and growths about cores or underneath former shells by underplating. In section, bi-lobed limbs of the arched mineralisation bands are steep, indicating movement of cores arching the mineralisation. This may be a function of Unicorn's confined vent channel in near surface environment, promoting vertical movement, compared with the Climax deposits three open ore arches, the Ceresco, Upper and Lower, ore zones (Figure 8), deposited in wide polygonal structure and much deeper, the Ceresco estimated at 3.1 to 3.7 km depth (Wallace, 1978). The Upper and lower arches have amalgamated limbs. High silica zones intervene between each arched mineralisation band that may be less mineralised. At Unicorn the high silica bands form part of the mineral sequence. As in all Climax deposits, extreme silica zones may be associated with lower Mo grades, but here Unicorn differs in that high silver may occur in these zones, such as large sections of DUNDD002 averaging around 9.6g/t Ag, as well as other areas with

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From Your President

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acknowledgement of "experiential learning" in lieu of formal qualifications. AIG's articles still provide for this and probably should be changed for future member admissions. We have two or three members (max) who have been admitted over a long period using the experiential learning provision. The members concerned should also be advised not to act as a QP in Canada

One additional thing I didn't mention earlier is that the Securities Commissions in Canada, in assessing Technical Reports, are looking at commitment to professional development by Qualified Persons. The metric they are using is length of membership of the relevant professional association – geoscientists who have joined a professional association immediately prior to acting as a QP are having their status questioned (if the regulators pick up on the issue). I clarified this with Craig Waldie and Jim Whyte over a few beers. This creates an issue around the practice of accepting "fast track" applications from members wanting to sign off as QPs in particular, although it's something that AIG would not be held accountable for, and it is something that applicants for membership will find somewhat futile.

In clarification of their comments about the vetting of reports, every prospectus/IPO document and accompanying technical report is thoroughly reviewed. 5% to 10% of other technical reports are also reviewed.

Andrew Waltho, Vice President
Australian Institute of Geoscientists

The Unicorn Climax-type Mo Porphyry – a Urad-Henderson Analogy

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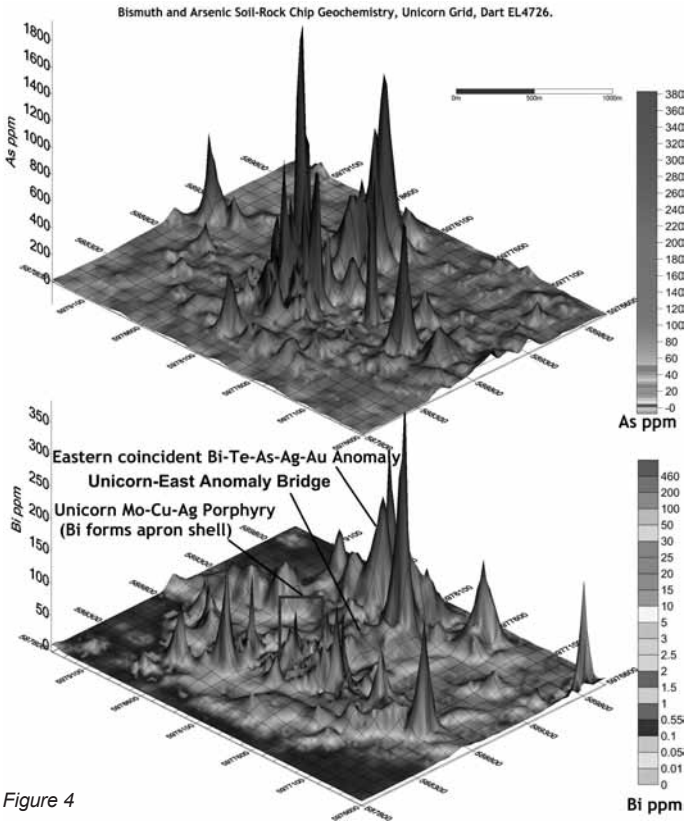

Figure 4

high Mo. Silica is also less reactive to subsequent pulses of mineralisation. Climax-type inverted bowl-shaped ore sequences relate to higher potassic altered rhyolite-QFP differentiates between each high silica zone. At Climax the deepest, most intense zone in each case passes a threshold of lower mineralisation as the highest silica zone, where nearly all pre existing rock texture is destroyed and virtually all rock minerals are replaced by silica. This is also the case for some zones within Unicorn's SLC, only very rare rhyolite breccia fragments surviving. Broadly, Henderson's high silica zones occupy low Mo grade areas above the three main broad stock centres, Henderson, Seriate and Vasquez that give rise to several differentiated ore shells lobes of various shapes. Figure 9, shows low Mo grades centred on the apices of the Henderson and Seriate stock centres which are the sites of high silica zones.

Typical of the Climax-type, both radial and concentric quartz-Mo veining occur at Unicorn, but as at Henderson, networks may also occur between prominent dense parallel sets, more widely spaced in general potassic-silica zones than in the Unicorn SLC example shown in Figure 10A of the SLC, with exceptionally dense multidirectional sets. Such vein sets are cited as proof of multiple pulsed mineral systems (Ludington, 2009), as is the combined mass of vertical alteration, and since the Climax deposit high silica zones sit at the interface of multiple ore shell growths, it is highly probable Unicorn also had a mineral arch stacked over the surface SLC, but now eroded.

The Urad-Henderson Climax Deposits, Analogies with Unicorn

The Urad and Henderson Climax-type deposits at Red Mountain, Colorado, are separate stockwork molybdenite orebodies related to an Oligocene rhyolitic subvolcanic dome referred to as the Red Mountain Complex

(Figures 7). Discovery, as a 'graphite' deposit, was made from red soil and haematitic rock shed from Red Mountain in 1879. The first shallow open cuts at Urad were made on outcropping ferrimolybdite. Urad was mined from 1918, as a delayed response to WW1 demand, till the 1970's, when work started on its depth cluster, the Henderson Mine. Urad yielded 50M pound of molybdenum when AMEX operated the mine from 1967 to 1974, at a rate around 5000 ton per day. Henderson production proper began in 1976, having produced over 1B pounds of molybdenum in Dec 2009 from 220,839,795 tons of ore (Freeport-McMoRan, 2010).

The Henderson deposit is the youngest, and deepest, underplating the Urad's deposit's base 300m deeper. Henderson comprises three main Mo bearing intrusive cupola centres, each differentiated into a number of intrusive stocks or lobes, (Figures 9) including Henderson (Arapaho, Primos, Henderson, Berthhoud lobes), Seriate (East, Seriate, Ruby, Nystrom lobes) and Vasquez (Vasquez, Ute-Dailey lobes). This compound ore complex, including the porphyritc Henderson Granite core at depth, intruded the Urad Porphyry which constitutes a weekly mineralised inter-phase between the Urad and Henderson ore systems, and occupies what may have been the original magma chamber beneath Urad. It terminates the Urad mineralisation's base, some 760m from the surface, with both gradational and intrusive contact over some 25m with the Red Mountain Porphyry. The latter intruded the overlying vent and destroyed most of the Urad mineralisation. Red Mountain Porphyry is fine to coarse grained centrally and contains both angular and rounded, milled breccia along with some rubbled Urad ore and although this is also rounded, these did not move far, possibly due to magma pulsing up and down the magma chamber. Chilled margins are not normal, suggestive of past eruptions and movement up and down that in part, or completely, destroyed the chilled margins (Wallace 1978). This demonstrates multi-pulsing in just one intrusion, even in barren magma, that is interpreted as a likely hiatus in tectonic readjustment prior to further rifting, burial and renewed episodic anorogenic energy ascent with fertile magma yielding Henderson. Hence tectonics and palaeo-depth are the controlling forces of the mineralisation.

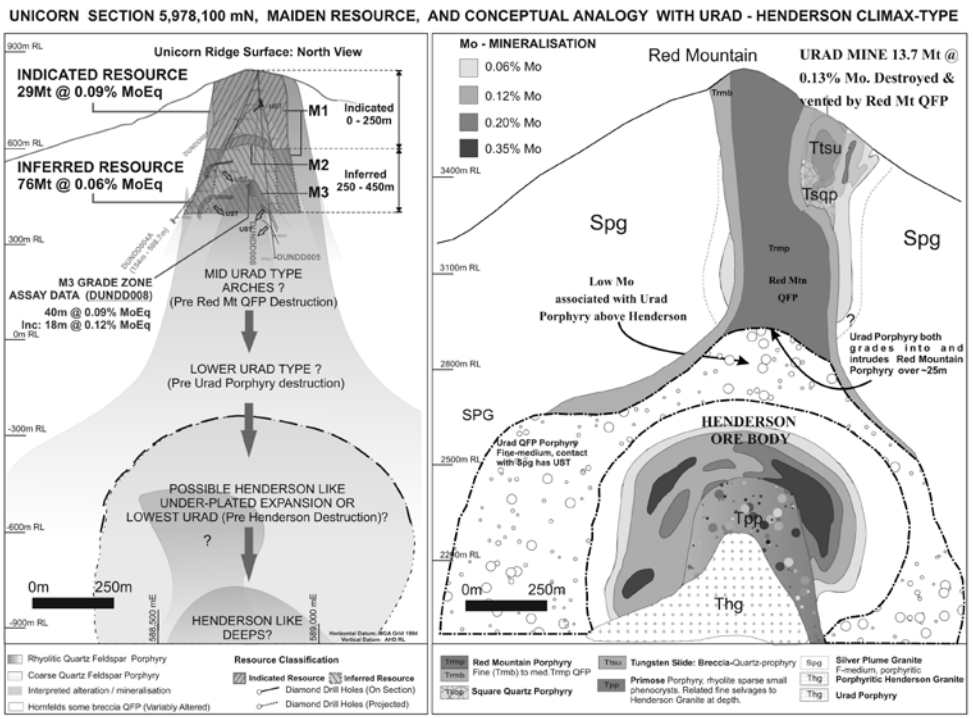

Figure 6

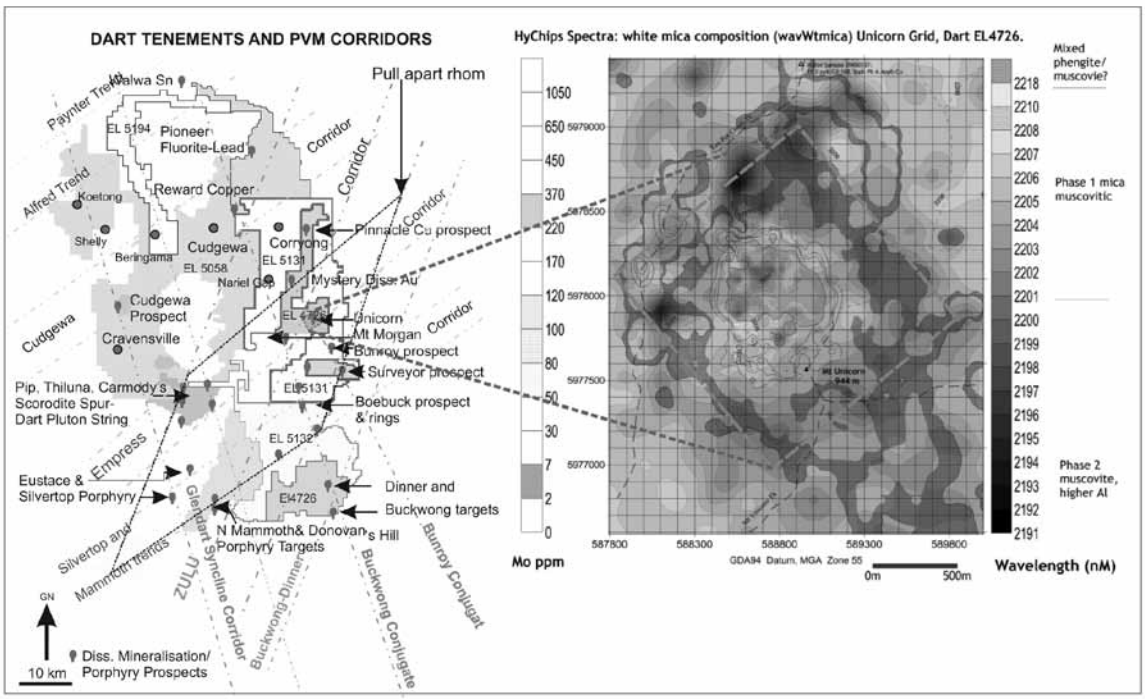

Figure 5

Red Mountain Porphyry forms a selvage to the Urad porphyry at depth; the 25m contact zone is highly altered with up to 800ppm Mo and common pyrite demonstrating increasing fertility prior to Henderson's advent. Contact with the Precambrian shows plumose feldspar UST layers from 25mm to 0.3 m wide over a zone 0.6 to 13m thick. Patches of access drifts also show quartz "Brain Rock" UST

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The Unicorn Climax-type Mo Porphyry – a Urad-Henderson Analogy

Cont. from Page 8

and both forms of UST have minor, fine, disseminated molybdenite along UST lamina. This demonstrates autometasomatism and the primary magmatic nature of molybdenum deposition, even before advent of Henderson. Clastic textures are common at Urad's surface, ranging to a depth of 380m. Urad's intrusive complex outcrops over a considerable area, around 700m long by up to 360m wide, not unlike the Unicorn body. Urad comprises the Tungsten Slide, East Knob and the Square Quartz Porphyry which is the youngest part of the Urad ore body and the only lobe to displays UST (on K level). It was centrally located before it was largely destroyed by subsequent intrusions, likely with stacked steep arches similar to Unicorn since cylindrical peripheral remnants survive at depth. It was almost certainly vented by Red Mountain Porphyry (Wallace, 1978). Radial and concentric rhyolite porphyry dykes, older than Red Mountain Porphyry, intrude the area, cutting the Tungsten Slide and Square Quartz Porphyry, and possibly relate to a precursor of the Urad Porphyry.

Deep high grade remnants of Urad, to within 300m of Henderson, indicate Urad extended deeper before its basal termination by Urad and Red Mountain Porphyries. Similar deep Urad style Mo mineralisation may occur beneath Unicorn's Ridge, particularly given the active regional and plate wide rift environment, provided no destructive Red Mountain-Urad porphyry inter-phase analogue occurs. An indication of this may be the NE ring dyke QFP, which contains tin, a late base metal phase. However lack of prolific inter-phase radial, concentric-ring dyke that heralded Urad's depth destruction through advent of the

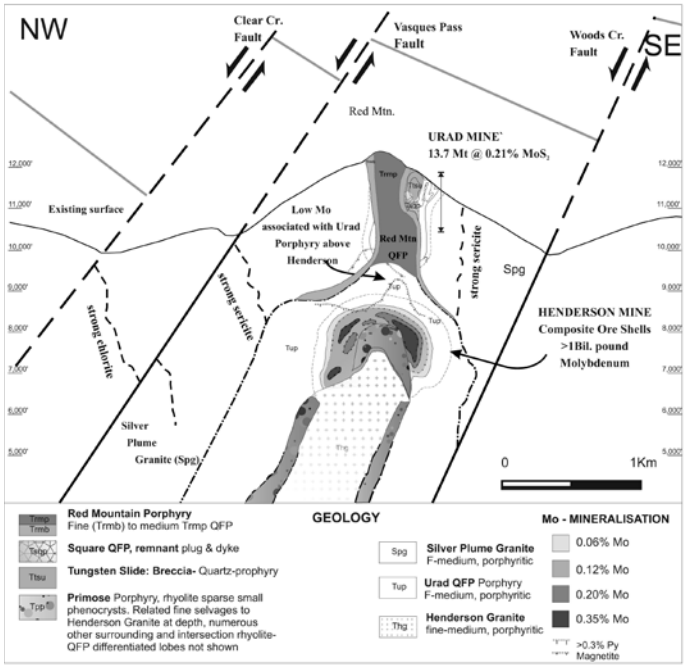

Figure 7

voluminous Urad porphyry suggests otherwise. Basal Urad style Mo mineralisation is however supported by some high grades in Unicorn drilled interesections, peaking around 0.6% Mo (Figure 2 &6) at moderate depths to around 540m. High grade mineralisation at Urad's H level corresponds to the base of the Urad ore body, though oxide ore close to or at surface had similar grades. Post Urad ore generation of Red Mountain Porphyry contains only base metals and pyrite, which also rings the system and other Climax-type porphyry's as late base metal phases, but why base metals should occur centrally in this Mo barren inter-phase intrusion is unknown. Similarly Unicorn has large base metal geochemical shells. Pyrite may be low with molybdenite: pyrite ratios ranging down to 1:10, similar to Unicorn. Pyrite forms more concentrated distal shells without molybdenite at Climax and Urad-Henderson whilst some areas of Mo stockwork contain very low pyrite. CSAMT and 3DIP geophysical indication of pyrite shells exist at Unicorn (Figure 13). As potassium was depleted, late albite alteration marks sodium entry and the end of Mo deposition associated with potassic feldspar. This is also evident at Unicorn, with late albite veining. Younger intrusive lobes at Henderson are progressively more sodic, indicating the source magma chambers composition also changed towards the end of the last intrusive stock centre, the Vasquez cycle.

The Urad Mo. orebody was first deposited at shallow depths, estimated by surface erosion and from other studies to be around 600m to 800m below the surface at the time of ore formation. By extension, Henderson's underplating, some 900m below, occurred at 1,500m to 1,800m depth (Wallace, 1978). This is almost certainly underestimated, since Henderson deposited after Red Mountain Porphyry, which destroyed most of Urad whilst sinking on extension tectonics, effecting burial. Physiochemical modelling also reveal ideal depth of 3km to 4km were necessary to effect magmatic convection, similar to depth estimates for Climax; nearing 4km. Magmatic convection cycling is necessary to account for the molybdenum in large Climax-type system (Shinohara, and others, 1995). Reconciliation of Mo in Henderson cupola stocks is vastly inadequate to account for Mo metal concentrated into intrusive via cupola differentiation (Wallace, 1978). Magma convection with a deeper magma chamber

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The Unicorn Climax-type Mo Porphyry – a Urad-Henderson Analogy

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> 100 km^3 is needed, and created optimal lithostatic depth conditions at the convective apex to remove gas bubbles at Henderson without eruptive loss, as was the case in Urad. Gas bubbles would increase magma viscosity around fifteen fold, terminating convection to stream up Mo and hydrous volatile entrained rhyolitic magma, part of the convective cell apex pluming as rhyolite domes about cupola cores, mimicking their shape.

Tectonic, Structural and Regional Setting

The Climax-type always forms in association with very deep structures, generally tapping magmatic fluids through back arc extension tectonics that accumulate at the interface of the mantle and deep crust after a period of sialic build from subduction. The Rio Grande Rift is the archetypical example. Unicorn, situated in the back arc Omeo-Wagga-Metamorphic Belt (OMB), west of the Gilmore Suture, shares the North American A-Type peraluminous magma and deep structures in the form of the Gilmore Suture and Saltpetre Fault Zone splay. The regional magmatic suite is distinguished from volcanic arc elements as members of the Boggy Plains Super Suite (Figure 1 section A). Like the Precambrian Colorado porphyritic Silver Plume Granite (Figure 7 & 9 SPG unit), a batholith which contains the Oligocene Urad-Henderson deposits, this suite also contains elevated base metals. The SPG however is an unlikely source of reworked magma and metal for Urad-Henderson, since the base metals would need to be preferentially removed in this Mo only Climax-type; Clearly very deep magma sources are called for. Regionally this occurred during paused subduction of the palaeo-pacific plate, after a protracted build up of fluid accumulation during sialic crustal build of the OMB through the Benambra orogeny.

Climax-type igneous compositions from the interaction of mantle derived melts with high grade metamorphic rocks at the base of continental crust, (Ludington, 2010), have been mapped using trace

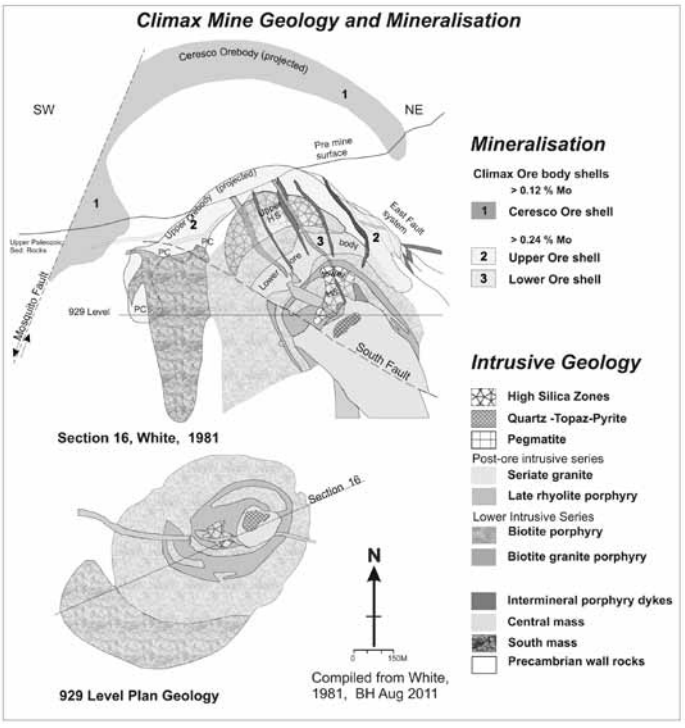

Figure 8

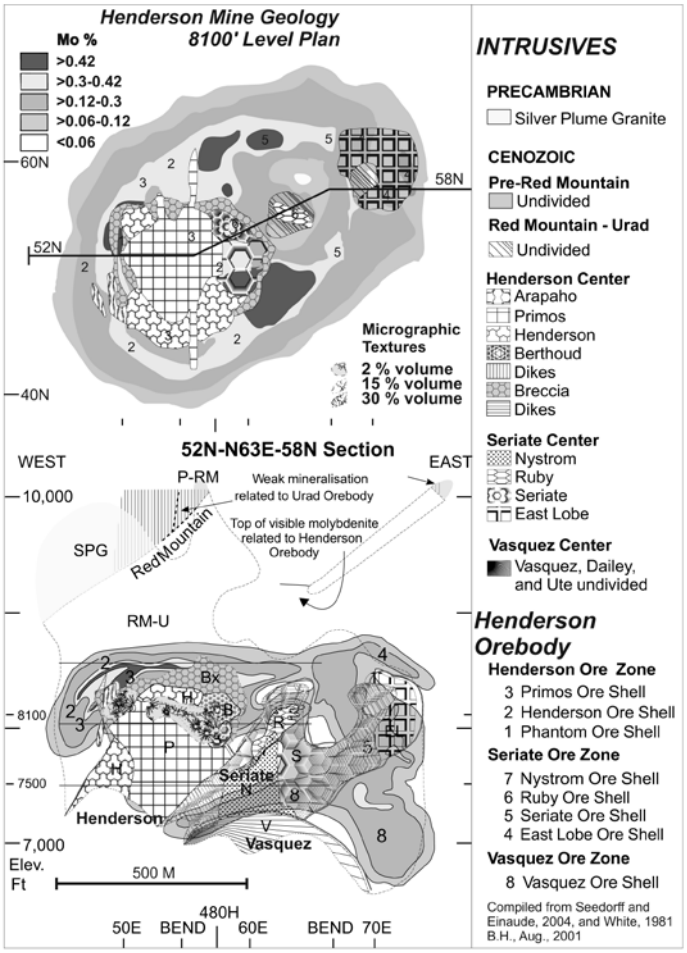

Figure 9

element indices. In North America they generally trend toward low Zr-Sr (<120 ppm Zr,< 100 ppm Sr) and high Rb and Nb (> 250 Rb, >20 ppm Nb) geochemical signatures. Unicorn diamond holes DUNDD004 to DUNDD009 averaged 63 ppm Zr and 69 ppm Sr, though Rb and Nb are lower with 158 ppm Rb and 10 ppm Nb. These samples however included wall rocks and very high silica SLC units with low values of Rb and markedly elevated in differentiated rhyolite units. Unicorns near arc and suture setting on the miogeocline-eugeocline divide would vary geochemical signatures seen in North America, further in the back arc, mixing sialic components with subducting arc contamination on rollover, simultaneously taking up eugeocline copper and silver to form Unicorn's metallogenic hybrid Climax-type. In addition LFB sialic evolution is probably halfway between New Caledonian Island Arc and the mid south west North American Cordillera Rockies which would also affect Climax-type geochemical signatures. Unicorn's structural and tectonic setting near

suture, arc and miogeocline-eugeocline boundary with similar extension is strikingly similar to the SE Alaskan setting hosting Quartz Hill, a super giant with 1.584Bt @ 0.076% Mo for 1.204Mt Mo (Laznicka, 2006). Quartz Hill is a metallogenic and lithological hybrid hosted by composite peraluminous leucogranite-monzogranodiorite and rhyolite stock that also contains Pb, Zn and Cu. It has both high silica Climax-type rhyolite Mo stockwork (with fluorine) and monzogranodiorite host characteristics (Ashleman 1997). A bimodal suite including lesser basic intrusive rocks is ubiquitous in the Climax-type. More basic compositions at Unicorn, Mt Morgan and North Mammoth prospects range from rhyodacite cores to andesite dykes. They may contain higher indium, up around 60 ppm In. Worldwide indium signifies marked rifting, such as in the Fenoscandian Shield (Sundblad, 2010). Greenland's Malmbjerg Mo deposit differs in its extreme rift setting that relates to the Cretaceous opening of the North Atlantic. In conclusion it is clear metallogenic hybrids, indeed lithological hybrids such as Quartz Hill, can form super giant deposits with variation on the typical Climax-type.

Regional mineralisation controls include cross terrane structures here from the Murray River Lineament fracture system 1 considered equivalent in terms of metallogenic importance, though with back arc style, to the Lachlan River Lineament fracture system for the Cadia and Endeavour Cu-Au porphyries in central NSW (Figure 1). Broadly they appear to define the south and north edges of the Gnalta-Howqua

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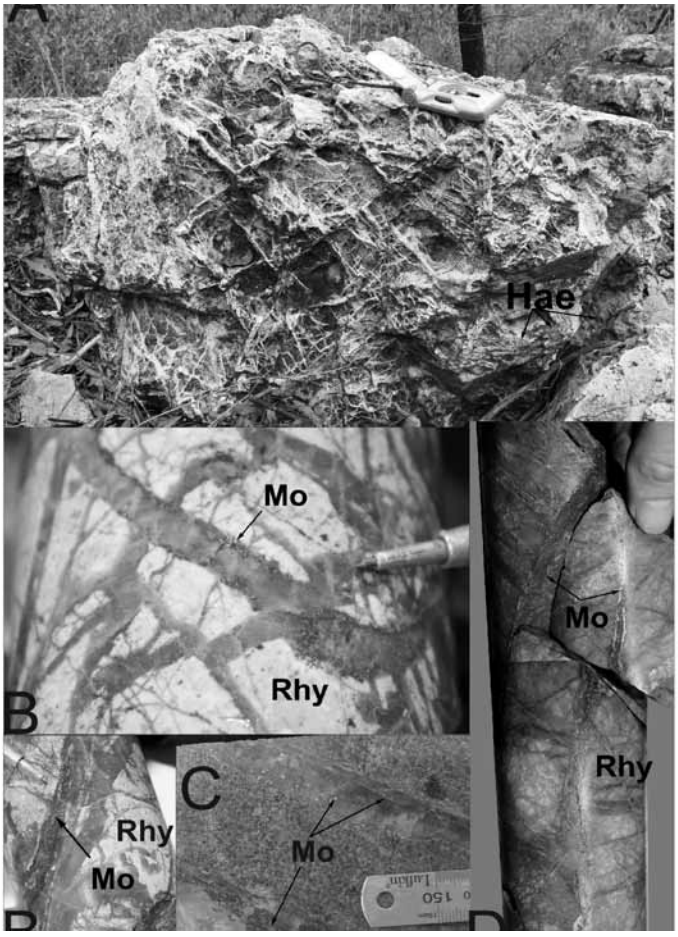

Figure 10

The Unicorn Climax-type Mo Porphyry – a Urad-Henderson Analogy

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palaeo-geographic shelf respectively. Westward they point towards major kinks in the Stavely volcanic arc, and locally they intersect major kinks in respective Kiandra and Macquarie arcs. Together these features indicate they are very deep cross terrane structures. In the Unicorn's region, east eugeocline arc elements converge, bound westerly by the Gilmore Sutures major regional kink, sweeping SSW into Victoria. This arose from the eugeocline collision against the miogeocline, suture closure against the OMB nucleus in the Ordo-Silurian assisting arc constriction locally and convergence with NW over SE thrusts providing structural splay preparation for Unicorn. Flexure of the suture about the OMB nucleus radiated cross splays in the border region that intersect, scribing polygonal elements, shown diagrammatically in regional and intermediate-camp scale in Figures 5 and 1. Saltpetre elements scribe the SSW trending Zulu corridor and WSW elements scribe the Empress Corridor. Unicorn and Mt Morgan porphyries occur in the intersection of the Zulu and Empress corridors. These structural elements form the basis of Dart's polygonal exploration model (PVM).

At local scale PVM elements control mineralisation and surface alteration shape within Unicorn's grid area, reflecting polygonal sericite and argillic alteration patterns following the Empress cross fracture polygons determined from HyChip grid spectral studies. An example for white mica alteration is shown in Figure 5. This is within scale order for fault bound sericite above Henderson (Figure 7). Henderson section also shows list to one side, due to convergence of the Precambrian faults reactivated in the Oligocene. Similarly Unicorn may list, possibly with NNW plunge based on surface geochemistry pattern, Saltpetre and other fault splay elements converging with the Gilmore Suture. In porphyry coppers, regional structures may not be apparent. In the Climax-type, regional structures are apparent in peripheral areas, seen in Unicorns collapse breccia (Figure 12), and may be obliterated by the rhyolitic host in central porphyry mineralisation, where radial and concentric structures, dykes and stockwork vein orientations predominate. At Unicorn Empress trending fractures persist in post SLC silicification mineral phase, pointing toward the Mt Morgan Porphyry some 7.5km to the WSW. This is consistent with potential for younger underplating mineralisation potential beneath Unicorn. Regionally, dextral trans-tensional torsion effecting reactivation of structures, with rotation of Unicorn's polygonal blocks during peak Late Silurian extension is the most likely emplacement mechanism of the Unicorn intrusion. A similar polygonal rotation mechanism has been proposed for emplacement at the giant Bingham porphyry, Utah, USA (Kloppenburg, 2010). An approximate Pridolian 420Ma peak thin OMB crust provides the most likely peak extension for Unicorn's emplacement, consistent with LFB wide crustal thickness age plots by Collins (2004). Significantly, similar aged deposits, commonly around 418 to 425 Ma, occur in the miogeocline, well into NSW and Qld (tear drops in Figure 1), as opposed to variable aged eugeocline volcanic arc mineralisation. Some mineralized granitic intrusive within arc show similar ages, indicting plate wide extension in the miogeocline also affected arc settings. This would indicate Unicorns formation necessarily involved a major tectonic plate wide roll back.

The central palaeogeographical-tectonic features to the Climax-type are "pull-apart" basins. Regionally the Mid-Late Silurian Tumut-Mitta basins follow the Gilmore Suture and its splays, demarcating the regional scaled kink and tensional jog (Figure 1), resembling the Rio Grande Rift basin setting in Colorado. The regional curved sialic OMB build also has parallels with the Laramide Colorado mineral belts Precambrian basement, sweeping in a wide arc between Silverton to the north and Leederville to the south. Furthermore the straight line element of the regional kink, the Zulu corridor, composed of the Saltpetre fault splays and other parallel SSW trending elements, has equivalence to the 'straight line' elements in the Rio Grande Rift, the so called "Climax Line", a relatively narrow zone along which the Urad-Henderson, Climax, Mt Emmons and Silver Creek Climax-type deposits cluster. Both the Zulu Corridor and the Climax Line are contained within regional gravity lows. Zulu corridor passes from

north through the Mt Elliott Goldfield, Mt Unicorn, Mt Morgan and Mammoth porphyry's to the south.

Conclusion

With Unicorn's maiden resource recently announced, initially from the top section to around Tea pot Creek level, this has resulted in the discovery of a newly defined Mo-Cu-Au province in NE Victoria. Genetic and domain modelling reveals Unicorns Climax-Type Mo porphyry parentage, with hybrid Cu-Ag additions attributed to near arc suture rift tectonics. Modelling continues to outline lateral and depth targets, analogues to Colorado's high palaeo level Urad deposit, with potential Henderson like giant depth target which under plated Urad. A nearby 1km diameter concealed depth cluster target near the Unicorn deposit also occurs as the eastern geochemical anomaly. Unicorn is the first Climax-type discovery in Australia and reason for its existence are discussed, including sialic build, splay radiation about an OMB nucleus and cross terrane structures within a specific blend of tectonic attributes. This features a regional jog about the Tumut-Mitta pull-apart basins with resemblance to the Rio Grande Rift jog of Colorado, USA, hosting the Climax Lines Mo porphyry clusters, and the Suture Rift environment of Quartz Hill, a supergiant Climax-type Mo metallogenic hybrids in SE Alaska. Such hybrid tectonics is discussed in relation to Unicorns Zr-Sr-Rb-Nb trace element similarity to the typical Climax-type, with some modification, also related to Unicorns higher Cu and Ag, for which temporal and spatial distribution of Cu-Ag relative to Mo is not entirely understood. In some way this may also relate to the Urad-Henderson inter-phase of the Red Mountain porphyry, which contains higher base metals centrally as opposed to typically distal shells, in that a coincident separate hydrothermal sulphurdation base metal phase appears. Of interest here, though more disconnected, is close temporal superposition of the pyrite phase with Mo disposition at Urad, compared with wide temporal separation at Henderson, given Urad deposit was closely followed by the Red Mountain porphyry pyrites, in an intrusion which venting Urad. As such, reconciliation of Unicorn hydrothermal base metals as a separate hydrothermal sulphidation phase with Mo autometasomatism will reveal insight to tectonic driven mineral domains on rifting and metal ratios, providing a direction for future research. Temporal and spatial separation of the Urad-Henderson pair was likely marked by a brief compression inter-phase then episodic rapid and overtly voluminous ejection of Urad porphyry containing weak Mo by not permitting convective cycling required for Mo autometasomatism and quenched hydrothermal deposition, followed by advent of Henderson's convective cycling, promoted by Red Mountain-Urad Porphyry pressure sealing and depth containment via continued decent in a major rifted jog. Given the marked regional rift environment in focused structures these are positive attributes for Unicorns combined Mo-Cu-Ag mineralisation. ▲▲

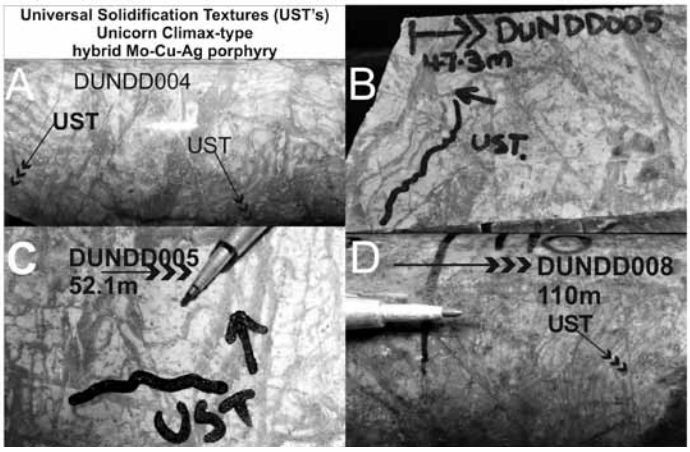

Figure 11

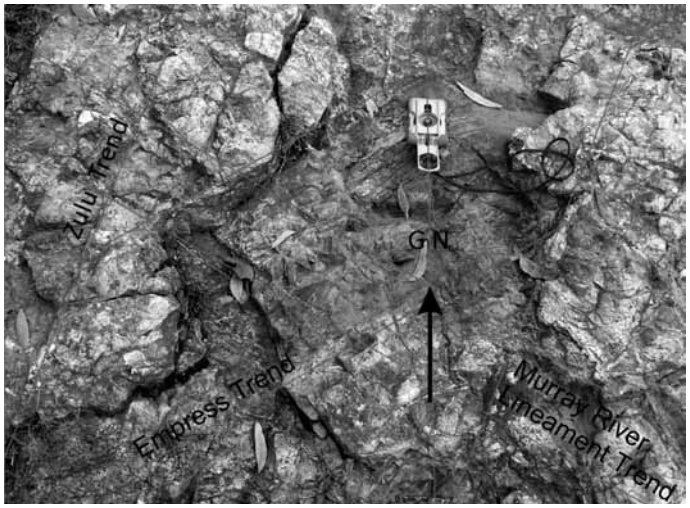

Figure 12

REFERENCES

Ashleman, et. al., (1997) in Laznicka, 2006, p 203, Giant Metal Deposits, Springer

Carten, R.B., et.al., 1988. Economic Geology Vol.83, p 296. Cyclic Development of Igneous Features and Their Relationship to High Temperature Hydrothermal Features in the Henderson Porphyry Molybdenum Deposit, Colorado.

Carten, R.B., et.al., 1993 in Laznicka. P., 2006. Giant Metallic Deposits, Springer-Verlage, Berlin, 2006.

Collins, B., 2004. Tectonics to Mineral Discovery, MORE-SGEG Conference

Freeport-McMoRan, 2010. Henderson Produces Billionth Pound of Molybdenum. HENDERSON, CO, press release, January 4, 2010: http://www.climaxmolybdenum.com/News/pdfs/henderson-010410.pdf

Laznicka, P., 2006. Giant Metallic Deposits, Springer-Verlage, Berlin, 2006.

Ludington, G. And Plumlee. S., 2009. Climax-type Molybdenum Deposits, Open File 2009-1215, US Dep. of Interior, US Geological Survey

Purvis, G., 2008. CSIRO Petrography Report on Phase 2 diamond drilling, Mt Unicorn, Internal Report for Dart Mining NL.

Seedorf, E. and Einaudi, M.T., 2004. Henderson Porphyry Molybdenum Systems, Colorado: I. Decoupling of Introduction and Deposition of Metal during geochemical Evolution of Hydrothermal Fluids. Economic Geology, Vol. 99, pp. 3-37.

Seedorf, E. and Einaudi, M.T., 2004. Henderson Porphyry Molybdenum Systems, Colorado: II. Sequence and Abundance of Hydrothermal Mineral Assemblages, Flow Paths of Evolving Fluids, and Evolving Style. Economic Geology, Vol99, pp. 39-72.

Shannon, JR, Walker BM, Carten RB and Geraghty EP. 1982. Unidirectional Solidification Textures and their Significance in Determining Relative Ages in Intrusions at Henderson Mine, Colorado, Geology 10, pp. 293-7.

Shinohara, H, Kazahaya K and Lowerstern JB. 1995. Volatile Transport in a Convecting Magma Column: Implications for Porphyry Mo Mineralization, Geology 23, pp. 1091-4.

Sinclair, E. D., 1995. Porphyry Mo (Climax-type) LO8 Mineral Deposit Profiles, Geological Survey of Canada., Ottawa.

Sinclair, 1995, in Ludington, G. and Plumlee, S., 2009, p6. Climax-type Molybdenum Deposits, Open File 2009-1215, US Dep. of Interior, US Geological Survey.

Sundblad, K.L. et.al, 2010. 100 Years of Indium Discoveries in the Fennoscandian Shield, Giant Ore Deposits Symposium, Adelaide, Australia.

Veevers, J.J. 2000. Billion-Year Earth History of Australia and Neighbours in Gondwanaland / edited by J.J. Veevers.

White, et. Al. 1981. Character and Origin of Climax-type Molybdenum Deposits. Economic Geology. 75th Anniversary Volume 270-316.

Wallace, et. al., 1978. Geology of Urad and Henderson Molybdenite Deposits, Clear Creek County, Colorado, with a Section on a Comparison of These Deposits with Those at Climax, Colorado. Society of Economic Geology, Inc.

Wallace, 1995, in Laznicka, P., 2006. Giant Metallic Deposits, Springer-Verlage, Berlin, 2006.