Mo DISCOVERY & EXPLORATION UNICORN Mo-Cu-Ag PORPHYRY



A back arc- Mo Climax type Rhyolite Dome in atypical intra arc-back arc boundary rift setting imparting hybrid arc metallogenic attributes in South Eastern Australia



Bernhard Hochwimmer & Dean Turnbull

IMPORTANT NOTICE AND DISCLAIMER



The information contained in this document is disclosed to you by Dart Mining NL (ACN 119 904 880) (the "Company").

Nothing in this document shall form the basis of any contract or commitment, or constitutes investment, financial product, legal, tax or other advice. The information in this document does not take into account your investment objectives, financial situation or particular needs.

The Company has prepared this document and is not aware of any errors in this document, but does not make any recommendations or warranty, express or implied concerning the accuracy of any forward looking statements or the likelihood of achievement or reasonableness of any assumptions, forecasts, prospects or returns contained in the information. Such assumptions, forecasts, prospects or returns are by their nature subject to significant uncertainties and contingencies.

This document is intended to provide background information only and does not purport to make any recommendation upon which you may reasonably rely without taking further and more specific advice.

Potential investors should make their own decision whether to purchase any share in the Company based on their own enquiries. Potential investors are advised to seek appropriate independent advice, if necessary, to determine the suitability of the investment. An investment in the Company should be considered speculative.

This document is not a prospectus or other disclosure document.

DART COMPANY HISTORY



- **Dart Mining NL (Dart)** Small company publicly listed on the Australian Stock Exchange (ASX), focused on base and precious metal discovery.
- Dart aims to be a major precious, base and transition metal miner.
- <2004 Research into prospective ground:

Develop early Polygonal Vortex Mineralisation Model (PVM) ideas. Ground selection with gold vein and porphyry, precious- polymetallic-RIR focus.

• 2007 Dart Mining NL is listed on the Australian Stock exchange in May (ASX code:- DTM)

Dart Mining NL – Exploring in NE Victoria Border Region





- Airport
- Well informed supportive community

NEMENTS



DART MINING NL TENEMENTS

GRANTED LICENCES

- Dart EL 4726
- Cudgewa EL 5058
- Buckland EL 4724
- Boebuck EL 5131
- Bunroy EL 5132
- Myrtleford EL 5123
- Mt Alfred EL 5194

TOTAL: 2,335 Km²





UNICORN GRID Mo-Cu-Ag PORPHYRY & REGIONAL Mo EXPLORATION

□ PVM METALLOGENIC MODELLING - REGIONAL PORPHYRY GENETICS >>→

SELECT TARGET FOR DETAILED GRIDDING

TEST PVM/PROSPECTS-Hydro geochemistry

GEOCHEMICAL GRIDDING & GEOPHYSICS-DOMAIN MODELLING.

DRILLING- REFINE DOMAIN & GENETIC MODEL

CALC REGIONAL CLUSTER EXPLORATION

Ri nov

Te ppm

RESOURCE Drilling











Increasing Early Silurian to Early Devonian trend of Hercynian to, Caledonian and anorogenic granite towards around Gilmore Suture & Cravensville Igneous Province, common indium indicative of rifting, highly

PVM Tectonic Concept Macro Elements

- Structural Preparation
- Gilmore Suture Splays from Suture Inflexion in Border Region: major PVM feature
- Reactivated Mid Silurian Extension- Troughs (green-blue) in Late Silurian
- Splay/trough 'symmetry' E-W of Suture
- Focused mineralization in Boggy Plains Supersuite, Cravensville - Kiandra volcanic province approximate 'Pridolian' 420Ma peak

Tectonics Background.



Dart tenements in

Australian-Antarctic Plate tectonic and Palaeogeographic

Compilation Neoproterozoic (west) to late Silurian (east), earlier extensional marine incursion dotted blue lines.

□<u>Murray River</u> <u>lineament</u>

Convergence of arc elements in Dart tenement area

PVM assumes Late Silurian extension reactivation effected porphyry mineralization in the Dart tenement

B.H & Asso.,2005, (base compiled from various sources including Veevers, 2000).

Tectonics Background-Detail

Tenement & mineralisation &in <u>Back Arc-Eugeoclinal / Miogeocline arc</u> <u>collage transition</u> and <u>Late Silurian trans-tensional tectonics</u>, PVM Pridolian metallogenic peak in Cravensville volcanic province , <u>proximity to Gilmore</u> <u>Suture</u> and wider <u>Tumut – Mitta Trough</u>



Late Silurian Extensional <u>Major Jog and Suture</u> <u>Inflexion in Border Region</u>

□Teardrops- disseminated deposit ~420-425 Ma, some reduced attributes, west of the Gilmore Suture compared to more oxide Cu-Au porphyry in 'arc'.

☐ Mid-Late Silurian marine incursion from south (dotted blue lines) & Benambra VMS. Eugeocline roots exposed. <u>Cravensville</u> <u>Underlain by Macquarie</u> <u>arc? Responsible for high</u> <u>metal in Boggy Plains</u> <u>Supersuite?</u>

NSW/VIC Tumut/Mitta troughs, Mitta trough.

☐ Thick to thin crust transition, critical in IR mineralization, reduced. BH & Ass. Pty Ltd 2005, (base compiled from various sources including Veevers, 2000).



PVM Tectonic Concept

Palaeogeography & Macro Structural jog Sinestral Structural Preparation & Late Silurian 'Pull Apart' Basin

Zulu- Saltpeter Fault Zone splays aligns with border region macro jog inflexion: > PVM Zulu Corridor (orange)

Extension focus about Ordovician Gilmore Suture

PVM – Dextral reactivation of Splay Radiation from macro 'Jogs' in 'Pull Apart' yields postulated 'Pridolian' Metallogenic Pulse, a Eugeocline/Myogeocline-plate boundary wide event

Geology base geology compiled from various sources including those in Veevers (2000). B H & Asso. Pty Ltd for DART Resources 2005.

PVM Tectonic Concept & Genetics



Extensional Basins PVM Pridolian ~420 Ma Metallogenic Pulsed Porphyry Fields Mo Unicorn-Morgan-Mammoth precious base metal systems

superimposed on thin crust roll over fluid model proposed by Collins, 2004.

Ce/Ye ratios proxy for LREE/HREE ratio indicator of depth to Moho against time showing distinct variations in crustal thickening and major mineralization associated after thickening events. B Hochwimmer & Associates, 2004 Based on sketch from Prof. Bill Collins slide, (2004); MORE-SGEG Conference: Tectonics to Mineral Discovery.

UNICORN GRID EXPLORATION



NE Victorian tenements and PVM corridors (left) reflect Silurian Benambra Orogeny structural preparation including NW over SE thrusting. Unicorn DUN grid HyChip SWIR white mica wavelength results (right), superimposed with partial Mo map for reference. Geochemistry and SWIR mica analyses follow PVM trends with the polygonal pattern suggesting 'boxed' sinistral rotation fractures, then dextral on extension and mineralisation. Similar polygonal fractures have recently been proposed to encompass Bingham and replicated internally (Kloppenburg, 2010).

UNICORN (DUN) GRID EXPLORATION



Molybdenum Geochemistry, Unicorn Grid, Dart EL4726.

Molydenum (ppm Mol contour plan and superimposed 30 surface map from the - 2.9 % 2.2 km Unicorn grid (DUN) comprising some 1312 soil, float and rock chip samples, initiality taken on a 100 X100 m grid. The central zone was in filled on 50m centres comprising some 298 samples of approximately equal soil to rock chip and float samples. Peak analyses were used in contouring in cases where both rock and soil were taken from a single location. Grey areas show null values. Data interpolated and smoothed to an approximate 25m grid utilising linear point Krigins. 8. hoch-immer, July 2008.

- Initial hydro geochemistry & regional geochemical track traverses in Empress-Zulu intersect
- Gridded Geochemistry
- SWIR spectral studies
- Geology and Alteration Mapping: extends into regional & satellite zones, new grid areas discovered at Boebuck/Bunroy
- CSAMT geophysics
- > 3D IP Survey (incomplete)
- > Domain Modelling-
- Targeting & Drilling
- Resource definition

Unicorn Rhyolite Dome Geology , Drilling & Geochemistry



Unicorn Drill Plan on Surface Mo Geochemistry



Drill trace of Phase 2 DUNDD004/4A, 5 & DUNDD006 design now underway to investigate southern breccia contact with silica cap & M1. Previous Phase 1 RAB and Diamond drilling (DUNDD001-003 on Molybdenum Soil / Rock Geochemistry Underlay.

Unicorn Grid Surface Geology and Geochemistry



Unicorn Grid (DUN) Surface Geology and Geochemistry

Central Rhyolite Breccia Plug, replaced by Mo-Silica Lithocap, surrounded by Porphyritic Rhyolite- Rhyodacite Apron



Unicorn Grid Surface Geology and Geochemistry

Mo-Rhyolite /Silica Plug **Brown** coarse Porphyry South Breccia Apron Porphyritic South Breccia Apron Rhyolite withvolity showing interna hasmatity as dependent alternation partz veislets, some clasts with internal quartz stinger zones. Moderaltly high Mo Apron nortalisem occurs in this apron between the Unicorns high Mo silca bluffs and central coarse grained brown porphyry surounding Mt Unicorn Mo-Silica /plug ellow Ferrimolybdi

View south from Mo-Silica bluff (450 - 1,380 ppm surface Mo) to lower "Falls" breccia and aplite-rhyolite apron

laminate UST, NW Silice Lobe

Unicorn Grid (DUN) Surface Geology and Geochemistry South Breccia Apron ~ 50-400 ppm Mo



Pervasive regional fracture trends, breaks down to radial and concentric fractures in silica cap and deeper drill core within rhyolite mineralsiation. Sub angular metasediment, coarse porphyry, porphyritic aplite/rhyolite clasts, haematite alteration, minor spaning quartz veins, most mineralisation is clasts internalised. Peripheral Cu and Pb anomalism, moderate increasing Mo from southern coarse porphyry to silica cap with some visible Mo in Quartz infiltrated coarse porphyry /breccia interface with silica Mo cap base. Compass base 12cm



Bismuth Geochemistry, Unicorn Grid, Dart EL4726.

Bismuth (ppm BI) contour plan, from the - 2.9 X 2.2 km Mt Unicorn (DUN) grid comprising some 1312 soil, float and rock chip samples. Samples were taken on a 100 X100 m grid. The central zone was in filled on 50m centres comprising some 298 samples of approximately equal soil to rock chip and float samples. Peak analyses were used in contouring in cases where both rock and soil were taken from a single location. Grey areas show null values. Data interpolated and smoothed to an approximate 25m grid utilising linear point Kriging. B. Hochwimmer, July 2008.

Gold Trace Element Geochemistry, Unicorn Grid, Dart EL4726.

f (in part per billion: ppb Au) contour plan, from the ~ 2.9 X 2.2 km Mt Unicorn (DUN) grid comprising same 1312 soil, float and rock chip ples. Samples were taken on a 100 X100 m grid. The central zone was in filled on 50m centres comprising some 298 samples of approximately al soil to rock chip and float samples. Peak analyses were used in contouring in cases where both rock and soil were taken-from a single tion. Grey areas show null values. Data interpolated and smoothed to an approximate 25m grid utilising linear point Krig ochwimmer, August 2008.

35





Tin (ppm Sn;- XRF analysis) contour plan, from the - 2.9 X 2.2 km Mt Unicorn (DUN) grid comprising some 1312 soil, float and rock chip samples. Samples were taken on a 100 X100 m grid. The central zone was in filled on 50m centres comprising some 298 samples of approximately equal soil to rock chip and float samples. Peak anolyses were used in contouring in cases where both rock and soil were taken from a single location. Samples with > 2ppm Sn via acid soluble analyses were reanalysed by the XRF method, comprising approximately 933 samples. Grey area show null values. Data interpolated and smoothed to an approximate 25m grid utilising linear point Kriging. B. Hochmimmer, August 2008.

Zinc Geochemistry, Unicorn Grid, Dart EL4726.

ic (ppm Zn) contour plan, from the - 2.9 X 2.2 km Mt Unicorn (DUN) grid comprising some 1312 soil, float and rock chip samples, inples were taken on a 100 X100 m grid. The central zone was in filled on 50m centres comprising some 298 samples of approximately val soil to rock chip and float samples. Peak analyses were used in contauring in cases where both rock and soil were tak@n?rom a single ation. Grey areas show null values. Data interpolated and smoothed to an approximate 25m grid utilising lisear point Kriging. Hochwimmer, August 2008.



- 2,9 X 2,2 km Mt Unicorn (DUN) grid comprising some 1312 soil, float and rock chip samples 77 ° Che Zekm Mt Unicorn (DUN) grid comprising some 1313 soil office 208 south to the south of the south of the 1997 South of the sout

Tellurium Trace Element Geochemistry, Unicorn Grid, Dart EL4726.

Tellurium(ppm Te) contour plan, from the ~ 2.9 X 2.2 km Mt Unicorn (DUN) grid comprising some 1312 soil, float and rock chip samples. Samples were taken on a 100 X100 m grid. The central zone was in filled on 50m centres comprising some 298 samples of approximately equal soil to rock chip and float samples. Peak analyses were used in contouring in cases where both rock and soil were taken from a single location. Grey areas show null values. Data interpolated and smoothed to an approximate 25m grid utilising linear point Kriging. B. Hochwimmer, August 2008.



Bariaum (acid soluble) Geochemistry, Unicorn Grid, Dart EL4726.

Barium (ppm Ba) contour plan, from the ~ 2.9 X 2.2 km Mt Unicorn (DUN) grid comprising some 1312 soil, float and rock chip samples. Samples were taken on a 100 X100 m grid. The central zone was in filled on 50m centres comprising some 298 samples of opproximately equal soil to rock chip and float samples. Peak analyses were used in contouring in cases where both rock and soil were taken from a single location. Grey areas show noll values. Data interpolated and smoothed to an approximate 25m grid utilising linear point Kriging. B. Nochwimmer, August 2008.

Antimony Trace Element Geochemistry, Unicorn Grid, Dart EL4726.

Himony (ppm Sb) contour plan, from the - 2.9 X 2.2 km Mt Unicorn (DUN) grid comprising some 1312 soil, float and rock chip samples. Samples ere taken on a 100 X100 m grid. The central zone was in filled on S0n centres comprising some 298 samples of approximately yual soil to rock chip and float samples. Peak analyses were used in contouring in cases where both rock and soil were taken/Agm a single cation. Grey areas show null values. Data interpolated and smoothed to an approximate 25m grid utilising linear point Kriging. Histohimmer, August 2008.

Unicorn Grid (DUN) Surface-Drill SWIR Spectral Alteration Studies



White Mica (WvMica) histogram for the Unicorn Grid surface and drill samples. Wavelength varies from toward 'paragonite' and 'phengitic' though are neither, comprising two white mica phases (phase 1 –red, phase 2-blue) with inflexion around 2204.6um



GDA94 Datum, MGA Zone 55

Unicorn Grid (DUN) Surface SWIR Spectral Alteration Studies

Mica Classification Map Unicorn Grid.

Spectral Mica Wavelength, partially superimposed Mo geochemistry

Distal polygonal low wavelength phase 2 higher Al mica enveloping central ring of higher (near phengitic mica in places) phase 1 with internal phase 1 & 2 mica

Remote sensing diagnostic aim with vegetation removal in combination with RAD/MAG²⁶

HyChips spectral analysis-white mica composition (wavWtmica) Unicorn Grid, Dart EL4726.

Contour plan of AusSpec Pty Ltd Hychips spectra for white mica composition (wavWtmica), from the - 2.9 X 2.2 km Mt Unicorn (DUN) grid comprising some 504 float and rock chip samples. Sample distribution for spectral analysis ranged from 50 to 200 m centres within the central molybdenum anomaly area previously reported. Phase 1 micas are muscovitic, Phase 2 are muscovitic-paragonitic and show distinct spatial distribution. Average analyses were used in contouring duplicates with about 25m from a single location. Grey areas show null values. Spectral data interpolated and smoothed to an approximate 25m grid utilising linear point Kriging. B. Hochwimmer, Nov 2008.





HyChips spectral parameter (ReKaolinite) for kaolinite, Unicorn Grid, Dart EL4726.

Contour plan of AusSpec Pty Ltd HyChips Spectra parameter for kaolinite (ReKaolinite) from the - 2.9 X 2.2 km Mt Unicorn (DUN) grid comprising 504 float and rock chip analyses. Sample distribution ranged from 50 to 200 m centres toward the central molybdenum anomaly area previously reported. ReKaolinite Spectra parameter measures the relative propartion of kaolinite to white mica; the value the less kaolin <1 white mica is dominant, >1 is kaolin dominant. More specifically values < 0.96 are dominated by white mica and values > 0.0998 are dominated by kaolinite. (AusSpec Nov 2008). Partial Mo contour overlay for comparison. This plot shows there is a zone of kaolin proximal to molybdenum-bearing silicipied (Ithocap, which may be associated with enhanced weathering due to acid dissolution from sulphides. Note white mica association with less Mo grade gradient and generally lower values. An outer ring (polygonal/ring fault control?) of high white mica relative to kaolinite with a southern margin reflecting the NE Empress Corridor trend. This forms part of a more polygonal outer controlling context to the system highlighted by an outer 2-7 Mo ppm zone (blue hatch). Average analyses were used in contouring duplicates. Spectral data interpolated and smoothed to approximate 25m grid utilising linear point Kriging. B. Hochwimmer, Nov 2008. Unicorn Grid (DUN) Surface SWIR Spectral Alteration Studies

Kaolinite verses White Mica index Map: Unicorn Grid

Distal polygonal mica bounding and central kaolinite

Remote sensing diagnostic aim with RAD/MAG combination & vegetation removal

Unicorn Grid Geophysics: Surface Map - Magnetic Susceptibility



Analytical Signal (AN) – enhances magnetic gradient model

Low MAG susceptibilities reflect Reduced Intrusive Related fluids, fine magnetite in oxide zones

Cardinal points reflect the bounding polygonal structure

50 ppm Mo contour 450 ppm Mo contour

Unicorn Grid Geophysics: Magnetic Susceptibility



contoured in Surfer. Based on raw data supplied and reprocessed By Southern Geoscience Pty Ltd, utilising GSV 1995 flown magnetic data Data was kriged on approximately 25 m grid Nov 2008, B Hochwimmer. Magnetic Susceptibility Section (top): Mt Unicorn Summit Sec7300mN. Central higher susceptibility in highly pyritic-haematite altered aplites. > Remnant high pyrite shell to porphyry system?

RL +630m section Mag suseptability data kriged to 25m grid, surface (Bottom). Magnetic extinction in Mo-Bi-South Cu zones?

Unicorn Grid Geophysics

Controlled Source Audio-Frequency Magneto Telluric Survey



Mt Unicorn CSAMT Grid Line 7900mN

Survey: January 2009. Specifications: Zonge multipurpose GDP-32II receiver Zonge GGT-30 geophysical transmitter XMT-32 Signal frequency and synchronisation controller: Porous ceramic receivers. 25m dipoles.

CSAMT data frequency range 2048 to 8192 Hertz.

Unicorn Grid Geophysics

Controlled Source Audio-Frequency Magneto Telluric Survey (CSAMT) 8100mN Diamond Drill Design, RAB09 Result



Unicorn Grid Mo-Cu-Ag Climax Genetic Model

A back arc- Mo Climax type Rhyolite Dome in atypical intra arc-back arc boundary rift setting imparting hybrid arc metallogenic attributes in South Eastern Australia

(Refer to abstract for attribute details)



Deep 3-4 km depth passive fluid and bubble escape promotes magma convection and Mo assent from protolith.

Contemporaneous, <50 year
 UST- Autometasomatised
 associated porphyry rhyolite Mo
 compared to late porphyry
 <300K year in tin porphyry eg

Climax model with hybrid arc copper attribute and high silver

Model based on Carteen





Interpreted Alteration - Mineralization - Lithology Domains

Primary Magmattic Intrusive Lobe Zones: rhyolite breccia host, autometasomatised (dykes, sill, and appolyses), some intense silica-adularia alteration and USTs, moderate to possible intense Mo-Cu-Ag mineralization Mixed Lithocap. Magmatic Intrusive Lobes: zones of hydrothermally altered rhyolite breccia host with some automatasamatised primary magmatic intrusive lobes, (dykes, sill, apophyses) with moderate silica-adularia alteration, USTs, some strone Mo-Cu-Ad mineralization

Undifferentiated: Possible Porphyry Core zones and under plated mixed Hydrothermal Silica replacement of myolite breccia & autometasomatised Primary Magmatic lobes with Mo-Cu-Ag mineralization.

Transition Zones: Hydrothermally to Magmatic lobe. Silicified Rhyolite Breccia host to Primary Magmatic Intrusive Lobes (dykes, sill, apophyses) partly autometasomatised;- minor silica-adularia, UST's & minor to strong Mo-Cu-Ag mineralization. Some sedimentary clasts and bursts.

Silica-Lithocap: silica - sericite - argilite alteration. Hydrothermal replacements of intyofile breccis host, Intense upper Quartz stockwork, moderate Mo-Cu-Ag mineralisation. Possible minor basal autometasomatised primary magmatic intrusive lobes, dykes & sili with silica-adularia alteration, UST's & minor strong Mo-Cu-Ag Rhyolite-Aplite: Porphyritic, acid to dacitic, quartz & sulphide stringers, some gossanous surface & breccia zones. Sub volcanic apron.

Porphyry Dykes: Quartz-feldspar, coarse grained, haematitic, unmineralised

Dacitic Dykes: fine to medium grained, early protoith, anomalous Mo-Cu-Ag

Ring Fracture: (Schematic inner and outer set),concentric & radial fractures

SAULTPETRE FAULT SPLAY Thrust silvers and wedges (conceptual)

Sediments: Ordovician Adaminaby Group; siltstone sandstone slate

Porphyry Core phases, coarse grained, unmineralised

Unicorn Mo-Cu-Ag Porphyry-Rhyolite Dome Conceptual Domain Model Section 8100mN

Silica Mo Cap

>Hydrothermal silica zones

Quartz Mo Stockwork in UST rhyolite

Saddled sill/pipe Mo complex Sub coeval protolith- porphyry dykes.



Unicorn Mo-Cu-Ag Porphyry Drilling



Drill trace of Phase 2 DUNDD004/4A, 5 & DUNDD006 design now underway to investigate southern breccia contact with silica cap & M1. Previous Phase 1 RAB geochemical and diamond drilling (DUNDD001-003) on Molybdenum Soil / Rock Geochemistry Underlay.

Unicorn Mo-Cu-Ag Porphyry Drilling



Aerial Photo View of Drill Rig and Approximate Diamond Hole DUNDD004 path

Unicorn Mo-Cu-Ag Porphyry Drilling



Northern porphyry ranges from haematitic coarse porphyry to fine silica sericite altered aplite/rhyolite, surrounded by tin anomalism shelling about the Mo Silica cap and apron rhyolite Mo stockwork, forming a ridge/saddle area with deep NW fractures controlling topography. The view shows current DSE scheduled control burn which covered parts of Unicorn and the Biggara Valley in the background (north view). Teapot Creek (ephemeral) lies west and passes through a relatively narrow flat into the Biggara Valley. This could serve as a 'capture point' if future mining were to be possible on the NW slopes of Unicorn, easily adit accessible from creek level for drilling or mining.

Unicorn Phase 1 Geochemical RAB Drilling-Apron Rhyolite





Unicorn Phase 1 Mo Silica Cap Scout Diamond Drilling

DDDH001

85m @ 445 ppm Mo 88m @ 1,709 ppm Cu 68 m @ 9.35 g/t Ag

DDDH002

44M @ 584 ppm Mo

Entire DUNRAB09

48*m* **of @ 648 ppm Mo and 0.13% Cu** including 11m @ 990ppm Mo.

UST in base of DUNDD002 and hydrothermal silica Mo cap vector depth grade in autometasomatised zones.

Unicorn Grid Phase 2 Diamond Scout Drilling (incomplete) Summary

Confirmed Unicorn is a Climax Type porphyry rhyolite with autometasomatised crenulation textures (UST) Very limited drilling, (1250m, some assays pending) on the first section (**5,978,100mN**) drilled significant combined Mo-Cu-Ag grade and size, highlights include:

DUNDD004 (29m @ 0.11% Mo, 89m @ 0.13% Cu and 163m @ 7.4 ppm Ag); DUNDD004A (24m @ 0.07% Mo, 46m @ 0.11% Cu and 46m @ 4.8 ppm Ag) and DUNDD005 (46m @ 0.09% Mo, 86m @ 0.2% Cu and 106m @ 4.5 ppm Ag). Recent deep intersection in DUNDD005 returned 1m @ 0.63% Mo indicating some higher grade exist. Commonly high grades occur in rhyolite domes at depth

Hole No.	Hole No. Hole Dip		MGA East (m)	MGA North (m)	RL AHD (m)	Total Depth (m)	
DUNDD004	-68.5	270	588,811	5,978,100	830	321	
DUNDD004A*	-68.5	270	588,811	5,978,100	830	508.7	
DUNDD005	-85	70	588,807	5,978,102	830	574	

* DUNDD004A Starts at 154m down DUNDD004.

Collar co-ordinates are measured by GPS location.

Hole	From	То	Significant Intersections	Significant Intersections	Significant Intersections
No.	(m)	(m)	Un-cut (Mo)	Un-cut (Cu)	Un-cut (Ag)
DUNDD004	0	163	163m @ 0.06% Mo	163m @ 0.11% Cu	163m @ 7.4 ppm Ag
	72		Inc: 29m @ 0.11% Mo		
	35			Inc: 89m @ 0.13% Cu	
DUNDD004A	154	278	124m @ 0.04% Mo	124m @ 0.03% Cu	124m @ 1.23 ppm Ag
	154			Inc: 24m @ 0.06% Cu	
	247		Inc: 5m @ 0.1% Mo		
	278	347	69m @ 0.04%	69m @ 0.13% Cu	69m @ 6.4 ppm Ag
	347	414	67m @ 0.05% Mo	67m @ 0.09% Cu	67m @ 4.2 ppm Ag
347 414 46			Inc. 24m @ 0.07% Mo	Inc 46m @ 0.11% Cu	Inc. 46m @ 4.8 ppm Ag
		468	54m @ 0.05% Mo	54m @ 224 ppm Cu	54m @ 0.9 ppm Ag
	468	508.7	40.7m @ 11 ppm Mo	40.7m @ 68 ppm Cu	40.7m @ 2.6 ppm Mo
	478				Inc. 2m @ 46 ppm Ag
DUNDD005	0	106	106m @ 0.08% Mo	106m @ 0.15% Cu	106m @ 4.5 ppm Ag
	50		Inc: 46m @ 0.09% Mo		
	106	393	287m @ 0.04% Mo	287m @ 0.02% Cu	287m @ 1.77 ppm Ag
	198		Inc: 34m @ 0.06% Mo		
	393	531	ASSAY DATA AWAITED		
	531	574	43m @ 0.05% Mo	43m @ 0.01% Cu	43m @ 1.3 ppm Ag
	533		Inc: 2m @ 0.48% Mo		

Analysis performed on 1/4 or 1/2 HQ core (predominantly 1/2 HQ) and 1/2 NQ over nominal 2m intervals. Sample intervals are also determined by geology.

Unicorn Mo-Cu-Ag Porphyry Phase 2 Drilling 8100mN



Sec: 8100mN: DUNDD004 (509m), DUNDD005 (574m)

Extensive molybdenite in porphyritic rhyolite, most of which averages ~ 500ppm Mo, significantly higher in combined Mo-Cu-Ag equivalents with strong copper and silver in some zones.

>Zones of higher grades in sill like porphyry rhyolite with Universal solidification textures (UST) including 'brain UST'.

Some narrow zones of very high grade Molybdenite quartz stockworks eg 2m @ 0.48% Mo including 1m @ 0.63% Mo from 538m in DUNDD005 infiltrating porphyry dykes (photo 1 with higher W, minor gold in basal zones.



DUNDD005 (HQ core, 47.5m). UST's. Up and down pointing termini indicative of sill layering. Photo shows up pointing UST.

DUNDD004A (NQ Core, 367m). Extensive UST 'Brain Rock' ,quartz termini point centrally east on section 8100mN.

Unicorn Mo-Cu-Ag Porphyry Phase 2 Drilling 8100mN (incomplete)



Unicorn Mo-Cu-Ag Porphyry Phase 2 Drilling 8100mN (incomplete)



DUNDD004, 86 to 97 m (HQ) part of **M1** high grade Mo layer sills, sericite -epidote altered rhyolite -quartz Mo stockwork ranging from 800 to 4,600 ppm Mo, 2.4 to 30.5 ppm Ag, 938 to 3,100 ppm Cu. Elevated Al and K accompany the high grade below the silica cap.



DUNDD004A: 347m-373m (NQ) section of M3 shows typical alteration **with 380**-**900ppm Mo, 650 to 1,300ppm Cu, 3.5-8.5 ppm Ag**. Higher grades correlate with silicasericite altered rhyolite compared with chlorite-argillite +/- carbonate epidote and haematite-magnetite in more oxidized zones.

Morgan Grid Geochemistry, SWIR, Drilling Phase1



SUMMARY

Northern Mo *geochemical ringlet* Larger southern Mo ring

Septum structures with anomalies Au-Aq chip assays, indium peak up to 55ppm In

Drilling Trace in Mo ring -DMMDD01 and DMMDD02 across Ringlet

Ubiquitous Tin

Some high peaks 2.14%Sn and 0.69% Mo 43

Morgan Grid As ppm Geochemistry, SWIR





Contour plan of AusSpec Pty Ltd HyChips spectra for white mica composition (wavWtmica), from the - 2.9 X 2.2 km Mt Morgan (DMM) grid comprising some 337 float and rock chip samples. Sample distribution for spectral analysis ranged from 100 to 200 m. Phase 1 micas are muscovitic, Phase 2 are muscoviticparagonitic and show distinct spatial distribution. Average analyses were used in contouring duplicates within about 25m from a single location. Null results conform to montmorilanite and have been adjusted to Zero, shown as Grey stipple. Most background micas appear muscovitic with mid range AI compositions possibly sediment related. A column of NE Zulu Corridor trending paragogic micas corresponds broadly to Morgan's wider Intrusive complex, with muscovites approaching the phengitic low AI spectrum forming two NW cross cutting Conjugates approximating the conjugate Fe oxide trend (see FeOx map). Broadly the same class of low AI muscovitic mica (very light grey to white) form quadrants about the metallic Northern Ringlet, the cardinals of which describing a NE Empress Corridor trending polygon. The southern zone of this feature is wavelengths exceeding 2206 nm conforming in orientation and area with the most intense mineralisation along the common broad zone between the Northern Ringlet and Morgan's Intrusive lobe to the south It should be noted definition at up to 200m HyChip sample spacing is not as defined as the 25-50 m Infill geochemical spacing. A Central zone of phengitic to higher AI muscovitic micas (dark band) occurs in the northern ringlet, along 5972800mN. A similar compositional band of ring appearance marks Morgan's main intrusive lobe centre, surrounded by a ring of lower AI elevated AI muscovite (light shades). The features centre also marks the paragonitic Conjugate and NNE Zulu trend intersections, near Morgan's topographic high and intrusive centre, possibly the centre of Morgan's intrusive column at depth, the regional intersection marking the centre of the intrusion, here of granodiorite composition. Interpretations other than mica include 47 % montmorilanite 16% kaolinite and other mixed species, these appear to ring the igneous complex, the northern sector in the Northern Ringletmain Igneous lobe junction Spectral data interpolated and smoothed to an approximate 25m grid utilising linear point Kriging. B. Hochwimmer, Nov 2008.



HyChips Spectral Analysis-White Mica Crystallinity (wxWtmica) Unicorn Grid, Dart EL4726.

Contour plan of AusSpec Pty Ltd HyChips Spectra parameter "FeOk intensity" for iron oxide intensity for the - 2.9 X 2.2 km Mt Morgan (DMM) grid comprising 337 float and rock chip analyses. Sample desiribution id generally 100 to 200 m centres. FeOk intensity Spectra parameter measures the iron oxide content via charge transfer slope in visible red wavelength, giving iron oxide its characteristic red colour, AusSpec., 2008. Values < 0.25 usually represent samples with negligible to no Fe oxide content. An outer polygonal shaped low FeOk zone with NE Zulu trend Envelopes the Morgan intrusive complex, with a column of moderately oxidized zone about 700m wide between, in addition to two cross cutting NW Conjugate trends, the northerm one beginning in the east near the SE grid corner, the southern band from mear the central south grid boundary. A circular moderate oxide with internal high oxide intensity forms a ring feature some 700m. In diameter, its northern boundary coinciding with the Northern metal Ringlets southern EW orientated zone interests the ring facture marks probably marks the outcropping SE arm of Morgan's Main Intrusive lobe, along a SE conjugate. Spectral data interpolated and smoothed to approximate 25m grid tuillising linear point Kriging. B. Hochwimmer, Nov 2008.

Morgan Grid Geochemistry, SWIR



Lead Geochemistry, Morgan Grid (DMM), Dart EL4726.

Barium (acid Soluble) Geochemistry, Morgan Grid (DMM), Dart EL4726.

Morgan Grid Geochemistry, SWIR



Tellurium-Tin: Polygonal Zulu-trend

Tellurium Geochemistry, Morgan Grid (DMM), Dart EL4726.

Morgan Grid Geochemistry, SWIR



Bismuth Geochemistry, Morgan Grid (DMM), Dart EL4726.

Bismuth focus around Northern Ringlet and Septum

Distal Zn: Polygonal Empress. & Zulu –

47



Morgan Mo-Cu-Ag-Sn-Bi-Au porphyry Diamond Drilling

Conceptual Model

NW Section (along drill hole looking east) through Northern Ringlet & Septum

Pencil porphyry at depth?

Morgan Mo-Cu-Ag-Sn-Bi-Au Porphyry Diamond Drilling Results

Hole No.	MGA East (m)	MGA North (m)	mRL AHD (m)	Hole Dip	Hole Azimuth (MGA Grid)	Total Depth (m)
DMMDD001	582,776	5,972,567	985	-80	176	529.8
DMMDD002	583,073	5,972,434	1045	-70	315	673

Collar Survey based on GPS (10m accuracy) - MGA94 Grid System.

Hole No.	From (m)	Significant Intersections Mo	From (m)	Significant Intersections Bi	From (m)	Significant Intersections Ag
DMMDD001	0	68m @ 134.2 ppm	498	6m @ 2276 ppm	498	4m @ 35.8 ppm Ag
	48	Including 4m @ 400 ppm	500	Including 2m @ 3010 ppm	500	Including 2m @ 50.1 ppm

Hole No.	From Significant Intersections (m) Mo Mo > 40 ppm		From Significant Intersections (m) Au Au > 0.01 ppm		From (m)	Significant Intersections Ag Ag > 0.2 ppm
DMMDD002	409	23m @ 210 ppm	340.9	10.2m @ 0.096 ppm	340.9	10.2m @ 5.7 ppm Ag
	410	Including 2m @ 0.1%	340.9	Including 3m @ 0.18 ppm	349.3	Including 1.8m @ 26.7 ppm

Morgan Grid (DMM) Phase 1 Diamond Drilling DMMDD001

ANALYSES DRILL HOLE DMMDD001 DEPTH M	Ta ppm Ce ppm 0000 0000 0000 0000 0000 0000 0000	Ba ppm Acc	Au ppm Acc	Mo ppm Acc 9 9 00 9 9 00 10	wvMica 00000 001002 001002 001002 001002 001002 001002 001002 001002 001002 001002 001002 001002 001002 001002 001000 001002 001002 001000 001002 001000 00100 0000 0000 0000 0000 00000 0000	Wt / xtWt Chlorite Comp a 000000000000000000000000000000000000	WtMica Min A vs cb/chl 8 % % % 8 000000000000000000000000000000000000	Class Na Class Ca Ca Ca Ca Ca	% Mg% % Fe% % S%	2 r ppm 2 r ppm 2 r ppm 2 r ppm 4 r 000 2 r ppm 4 r 000 2 r ppm 4 r 000 2 r ppm 5 r 000 5 r	Se Sppm	24.000 24.000 28.000 28.000 29.000 29.000 40.000 40.000 40.000
0 30 30 30 30 30 30 30 30 30 3								te meastaointe carbonite c				- 50 - 50 - 100 - 150 - 150 - 200 - 250 - 300 - 350 - 350 - 400 - 450 - 550
BX-SED-SIL: Breccia with BX Breccia Unspecified F Fault -minor OH Open Hole; CY Collar HyChip Oxides: Hae (haematite); Goe (go		Cuppmi 2n.ppmi	Leippm Leippm Sn ppm		mdd i1 2300	Fe %	I/ SA/SI/SL: Interbedded/ 5 POF/POM/POF Qz-Feld. Pc SLC/SL Silica resembling si Rhyodocita/SL indeterminat Oddicatia/SL indeterminat Oddicatia/SL indeterminat Oddicatia/SL indeterminat Oddicatia/SL indetermination Oddication Oddication COL/AL: Coluvium/alluvium CAD: BH	Sandstone/Siltstone/Silte orphyry-Fine/M/course illicitied ithocap, product y ex is original Lithology (LITH) iger zone (Includes SIL)	% ZD 6.00 7.00 7.00 7.00	Leg e e e e e e e e e e e e e e e e e e		Gr bbin

Morgan Grid (DMM) Phase 1 Diamond Drilling DMMDD002

		Taippm	ို Pb ppm ္စ		Mo ppm Acc	wvMica °	Wt / xtWt Chlorite Mica Comp	WtMica	Min Assemblage Class	Na % Mg	3% 000000000000000000000000000000000000	00000 00000 00000 00000 00	Y o ppm o	2000.G 4000.G 6000.G	
			0,00 6000 6000 6000	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;		ي سام xtWtMi	ca e e e e e e e	00 00 00 00 00 00 00 00 00 00		Ca% S				Mn ppm	L
DEPT	Ή			່ _{ຣຼ} Ag ppm _{ຼ ອ}	300,00 00 00 00 00 00 00 00 00 00 00 00 0	2200.0 2200.0 2205.0 2205.0 0.00 2.50 5.00	7.50 200.00 1200.0 2200.0 4200.0 2250.5 2255.5	8,8,8,8			j Th r	e strugering in Strugering S	g j se gppn guilig i lig	Sm ppm	8
м						<u>, 1999</u> , 19999, 1999, 1999, 1999, 1999, 1999, 1999, 1999, 1999, 1999, 1999, 1	ահարուրուրություն ապրորություն	Rel Kaoli	nite			² , ² , W, ² , ppm, ²		8 9 9	8 4-1-1-
0	ISISL								White mica+kaolinite+carbona	te		/			0
									White mica						
- 50	ISASI ISISL ISISL						E 12		White mica+kaolinite+carbona	te	< <mark>1</mark> 6 g			2 -	50
									White mica+carbonate Kaolinite+white mica	<u> </u>			S ₁ S ₁	(, E	
-	ISASI ISASI ISASI								White mica+kaolinite+carbona				PIST	ł E	
- 100	ISLSI	- 							White mica+kaolinite+chlorite+carb White mica+kaolinite+carbonat White mica+carbonate+chlorit	e i	- 1 9		¥. %!	ξ –	100
	ISISA	_							White mica+carbonate White mica+kaolinite+carbona				▶==	4 -	
450	POF V	Ľ.							White mica+carbonate		<u> </u>		《 길	ς F	450
- 150_	SA	Ē					E		White mica+carbonate White mica+carbonate+kaolini					ι F	150
	ISISL SA ISISA	\$ 			5 S I I I				White mica+carbonate White mica+carbonate+chlorit	🛋 († 🛉	. · · · · · · · ·				
- - 200	SI	· P	the second s						White mica+carbonate White mica+carbonate+chlorit		is <mark>i</mark> ≩		1 + -		200
-	ISISA								White mica+carbonate White mica+carbonate+chlorit White mica+chlorite+carbonate White mica+carbonate+kaolini		5 J. L		₹'≦'	{{ [
- 8	ISISA SA	· 1			E E E E				White mica+carbonate White mica+carbonate+chlorit White mica+carbonate				1, ' _2		
- 250	ISASI	' <u>i</u>							White mica+chlorite White mica+carbonate+chlorit White mica+carbonate white mica+carbonate+chlorit				约一一	名 -	250
-	SA ISASI	<u> </u> {							White mica+carbonate+kaolini White mica+carbonate+kaolini	• 7 • •	F F ž			<u>f</u>	
- - 300	ISASI								White mica+kaolinite+carroona White mica+carbonate+kaolinite White mica+kaolinite		- <u>}</u>	5	<u>L</u> <u></u>	ΪL L	300
-	SA RHY ISASI	li an							White mica+kaolinite+carbonate		5 X 5	┈╬	\$F72	ζ L	
-	SA BOM	•7							White mica+carbonate		 }		le l <u>C</u> l - l	<u>ן</u> ב	
- 350	ISASI	- <u>1</u>							White mica+carbonate+kaolini						350
-	BRM QFP	é.							White mica tarbonate White mica tarbonate White mica tarbonate +kaolini		- 5			<u> </u>	
- 400	ISISA	R.							White mica+carbonate+chlorit White mica+carbonate+kaolini White mica+carbonate+kaolini White mica+carbonate		우리 우리			<u> </u>	400
	ISASI ISTSI	<u> </u>							White mica+carbonate+kaolini White mica+carbonate				ا <u>ح</u> _ ا		-00
-	ISASI							F - i	White mica+carbonate+chlorit						
- 450	ISLSA	•							White mica+carbonate+chlorit White mica+chlorite+carbonat		<u>- 4</u> 4	<u> </u>			450
-	ISISL	3							White mica+carbonate+chlorit		- 55		ч <u>S</u>	<u>4</u> F	
- 2		2			- F				hite mica+chlorite+carbonate+ka White mica+carbonate White mica+carbonate+kaolini		2 2 2		장문 !	<u>i</u> ξ –	-
- 500	ISISA	_ {}							White mica+carbonate+chlorit		<u> </u>		14 3	[▲ F	500
-	SI	5				-			White mica+carbonate Chlorite+white mica		C SS.		┋╘╧╸		-
- 550	ISISA	<u>}</u>							White mica+carbonate+chlorite White mica+carbonate+kaolini White mica+chlorite+carbonat		र हे हैं दे		ו יצי או	12 -	550
-	v v v								White mica+carbonate		- E				
-	ISISL SI	- { · · ·							White mica+carbonate+chlorit hite mica+chlorite+carbonate+ka White mica+chlorite+carbonat		- I Z	` _ 77	N I 문 I		
- 600			5		Ĩ				White mica+carbonate+chlorit Chlorite+white mica White mica+carbonate+chlorit Chlorite+white mica		1 1 1 1 2 3 3		. کے {		600
-	10101						┿┫╴┝┇╞══╤┦		White mica+chlorite+carbonat	• { -				2 -	
- 650		_							White mica+carbonate+chlorit Chlorite+white mica	344 4	·			} <u>+</u>	650
-									White mica+chlorite+carbonat White mica+carbonate+kaolini White mica+carbonate+chlorit				<u>l</u> 2 .	<u>н</u>	
	1	0 10 10 0													
STRUCTUR SX-SED-SIL SX Breccia Fault -min	E : Breccia with LI Jnspecified or Le: CX Collor	Mel .			Repp	0.00 2500.0 5000.0	7500. 7500. 720. 720. 720. 720. 720. 720. 720. 7	LITHOLOGY I/ SA/SI/SL: Inte POF/POM/POF: SLC/SIL Silica re Rhyodacite/SII	erbedded/ Sandstone/Siltstone Qz-Feld. Porphyry- Fine/M/con sembling silicified lithocap, pro determinate original Lithocom	v/Slate 000000 urse 000000 bably ex 0 us 1 (LITH)	12:00 12:00 12:00 12:00 12:00 12:00		ة R % 5		Sr ppn
HyChip Oxi Hae (haema	des: tite); Goe (goeth		^e Zn ppm		0.0 0.0 1	Ti ppm	Fe %	Qz/QzSt Quartz/ DY: Dyke COL/AL: Coluviu CAD: BH	Quartz stringer zöne (Includes m/alluvium	QZ %	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0				19.00 19.00

Morgan Grid Geochemistry and Geophysics





Mt Morgan MAG anomalism: magnetic data "reduced to the pole (field inclination correction), some contours to show relief, Mo ring for comparison.

Morgan Grid Geophysics



IP line plan on arsenic map and corresponding isometric (looking SW) of Induced Polarization *chargeability* anomalism (100mGrid, screen grab).

REGIONAL EXPLORATION

UNDEREXPLORED Mo-Cu METALLOGENIC PROVINCE



Regional RAD /MAG Aerial Geophysics: Unicorn-Morgan Empress-Zulu Intersect

First vertical derivative return to pole MAG geophysics (RTP1VD, Eshade) ZULU Corridor: Conjugate trends

Bunroy and Boebuck track PDV 6000 field geochemical traverse, following hydrogeochemical anomalism.

NW conjugate -Bunroy MAG anomaly – Cu -intersecting Saltpetre Fault in vicinity of Unicorn.

Boebuck Adamelite aureoles: Diagnostic MAG Ring Anomaly. Systems also have RAD anomalism

NNS Bismuth anomalism lines up western Unicorn Bi anomaly , grid 1km

NORTH MAMMOTH & CONCEALED DONOVAN HILL Multi Ring Geochemical Anomaly





DONOVAN HILL-NORTH MAMMOTH PROJECT

Geophysics Regional RAD /MAG DONOVAN HILL

Subtle TMI first impression of ring anomaly under NW over SE Saltpetre Fault thrust sheet elements



Geophysics Regional RAD /MAG Analytical Surface DONOVAN HILL



REGIONAL EXPLORATION A NEW METALLOGENIC PROVINCE – AN UNEXPLORED Mo-Cu DISTRICT



SOUTH DART-CUDGEWA EL's

Geology – Very simplified PVM Corridor :

Empress - Dart Pluton string internal polygons; Zulu-Empress;Mammoth; Glendart ; Cudgewa; Alfred-Paynter-Carboona; Silvertop; Dinner-Buckwong treneds.

Geochemical provenance zones in Corridors

Unicorn-Morgan area selection from intersection of Empress and Zulu PVM corridor intersection.

□Others Selections: Dart pluton String, Donovan Hill-Mammoth Molybdenum, increasing >20 prospects /areas with widespread Mo-W-Sn-Au in Cudgewa Dart – Boebuck and Bunroy EL's

□Hydro geochemistry –track traverses

DUN-DMM Geochemical grids-geophysics



DART PLUTON STRING PROJECT Empress Corridor

Regional Geophysics & geochemistry

Dart I-Type Pluton
 String, anomalous in base
 -precise metal

Thilluna and Pipe porphyry, partial cover by andesitic Dartella volcanic and pyroclastics

Mountain View and Dart Gold mine line of reefs.

Grid 1km

MAORGAN Geophysics MAG Anomalies





61

Analytical Signal on 3D MAG Susceptibility Model Mt Morgan, Map and WSW section looking SSE. Note low susceptibility iso-surfaces. Vertical Exaggeration 1.5X

Unicorn to Morgan Grid Empress Trend Geophysics



Analytical Signal on 3D MAG Susceptibility Model NE Section

Vertical Exaggeration 1.5%



SOUTH DART EL 4726 CUDGEWA EL 5058

Historical geochemistry, hydrogeochemistry, RAD/MAG assisted PVM Modelling & area selections

Detailed selections

SE : Dinner –Buckwong Corridor prospects (old Indi Goldfield)

Dartella volcanic cover
 Over Pipe-Thilluna porphyry

Donovan Hill Mo target – Mammoth Cu-Mo-Ag-Au system

END

APPENDIX - IMAGES



PVM Regional Exploration

Guides exploration target area and prospect selection

Cross terrain lineaments , Splays and Gilmore Suture Zone.

Macro PVM vortices modelling in NE Vic- SE NSW explains goldfield distribution (diagrammatic only) B Hochwimmer & Associates Pty Ltd, 2003.

GENETICS



Oxidation State Verses Tectonics Position

Figure 5.2 Degree of fractionation and oxidation state of magmas associated with different dominant assemblages. Modified after (after Thompson 1999) to incorporate Vortex Model: Intra Arc/ Back ark/arc or Eugeoclinal / Myogeoclinal - Suture boundary Rift and Splays in different tectonic regimes. B Hochwimmer & Associates 2004, 2007.



Unicorn Scout Drilling Phase 1:- Silica Cap Petrography -2009



Sample 436 backscattered SEM images, molybdenite and gangue minerals



DEPOSIT GENETICS & DOMAIN MODELLING

Climax Model Comparison

Evolution of multiple rhyolite intrusive lobes at Henderson, Colorado, forming caps and saddle *alteration-mineral domains*

FIG. 14. Time-ordered sequence of molybdenite mineralization in cross section B-B (Fig. 2). Frames on the left side of the figure depict ore zones related to individual stocks; frames on the right side depict composite ore zones at different periods of time in the development of the orebody. Dikes have been omitted for clarity (see Fig. 7). The Ute stock is postore. Estimates of total grams of Mo added by each intrusion are shown in Table 3. From Carteen, 1985, p290