PARTIAL RELINQUISHMENT REPORT
For EPM 26141

FOR THE PERIOD ENDING
4 February 2020

NOVA STRATEGIC MINERALS PTY LTD

A.C.N. 604 969 673

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SUMMARY

EPM 26141 located in northwest Queensland, is approximately 10 km west of Mount Isa.

The tenement was granted for a period of 5 years commencing 25th July 2016 and consists of 28 sub-blocks. It covers an area of 89.66 square kilometres.

The tenement was taken up to investigate known mineralisation within the Western Succession of the Mount Isa Proterozoic Inlier and is located in and around the Sybella Granite suite of intrusives, including the mineralised Mica Creek pegmatite suite.

The Goya-Frida area is located on May Downs Station land, immediately west of the City of Mount Isa and the world class Mount Isa Cu-Pb-Zn mining operations. These prospects have been historically explored for copper and with the increasing resource prices is regarded as a host to significant copper mineralisation.

The Mica Creek area to the south west of Mount Isa has historically been prospected for a wide range of exotic elements including beryllium, tantalum, tin and white muscovite mica. This range of elements is associated with a suite of northwest-southeast trending pegmatites and is also considered to be prospective for lithium, an increasingly significant element contributing to the recent surge in renewable energy “battery metals”.

Detailed geochemistry analysis of the Mica Creek pegmatites has revealed an LCT pegmatite (Lithium-Caesium-Tantalum) association know elsewhere to be prospective for lithium mineralisation.

Nova Strategic Minerals was notified by the DNRME that EPM26141 had to be reduced by 40% of the original EPM26141 area as part of the NSM grant conditions.

The area to be reduced falls within the Mica Creek portion of the tenement and is shown in the relinquishment Map showing the 11 sub blocks to be relinquished.

The associated relinquished sub block table is provided below the relinquishment map.

Object of Report is to document the results of exploration activities carried out on the 11 sub-blocks relinquished from EPM 26141 in 2019

INTRODUCTION

EPM 26141 located in northwest Queensland, is approximately 10 km west of Mount Isa (Figure 1).

In the first year of tenure included a site visit to the copper prospective Goya and Frida prospects where a geological evaluation was made including the collection and analysis of a wide range of rockchip samples. These prospects have been historically explored for copper and with the increasing resource prices is regarded as a host to significant copper mineralisation.

A similar site visit and geological investigation was made to the Mica Creek prospect area that has historically been prospected for a wide range of exotic elements including beryllium, tantalum, tin and white muscovite mica. This range of elements is associated with a suite of northwest-southeast trending pegmatites. Detailed geochemistry of the pegmatites indicates an LCT pegmatite (Lithium-Caesium-Tantalum) association know elsewhere to be prospective for lithium mineralisation.

The construction of the Jemena Energy gas pipeline through Mica Creek (2018/19) prevented Nova Strategic Minerals further exploration access in this area for one year.
In view of the anomalous Geochemistry uncovered, NSM had planned to do some geochemical drilling to see if the Lithium minerals at depth contained Lepidolite.
This was abandoned due to the gas pipeline access road intersecting the planned drill site.

LOCATION

The tenement EPM 26141 centred approximately 10 kilometres west of the city of Mount Isa (Figures 1 and 2)
It is located on the Mount Isa 1:250,000 sheet (SF-54-01) and the Mount Isa (6756) 1:100,000 sheet (Figure 3).

Good accommodation, general supplies and fuel are available in Mount Isa, the city that serves the large Mount Isa mining operations and local cattle country. Mount Isa is connected to the coast via the sealed Barkly Highway and rail.

The climate is semi-arid tropical and is hot and wet in the summer (the main rainfall season). The winters are cool and dry.

TENEMENT

The tenement EPM 26141 was granted for a period of 5 years commencing 25th July 2016 and consisted of 28 sub-blocks (Figure 4).
It covered an area of 89.66 square kilometres.
The 28 sub-block details are listed in Table 1.

Sub Blocks to be Relinquished are shown in:
fig: 4 Green Shaded sub blocks to be dropped, *in page 7*
Sub Blocks relinquished are tabled in:
EPM 26141 Relinquished sub block table, *in page 7*

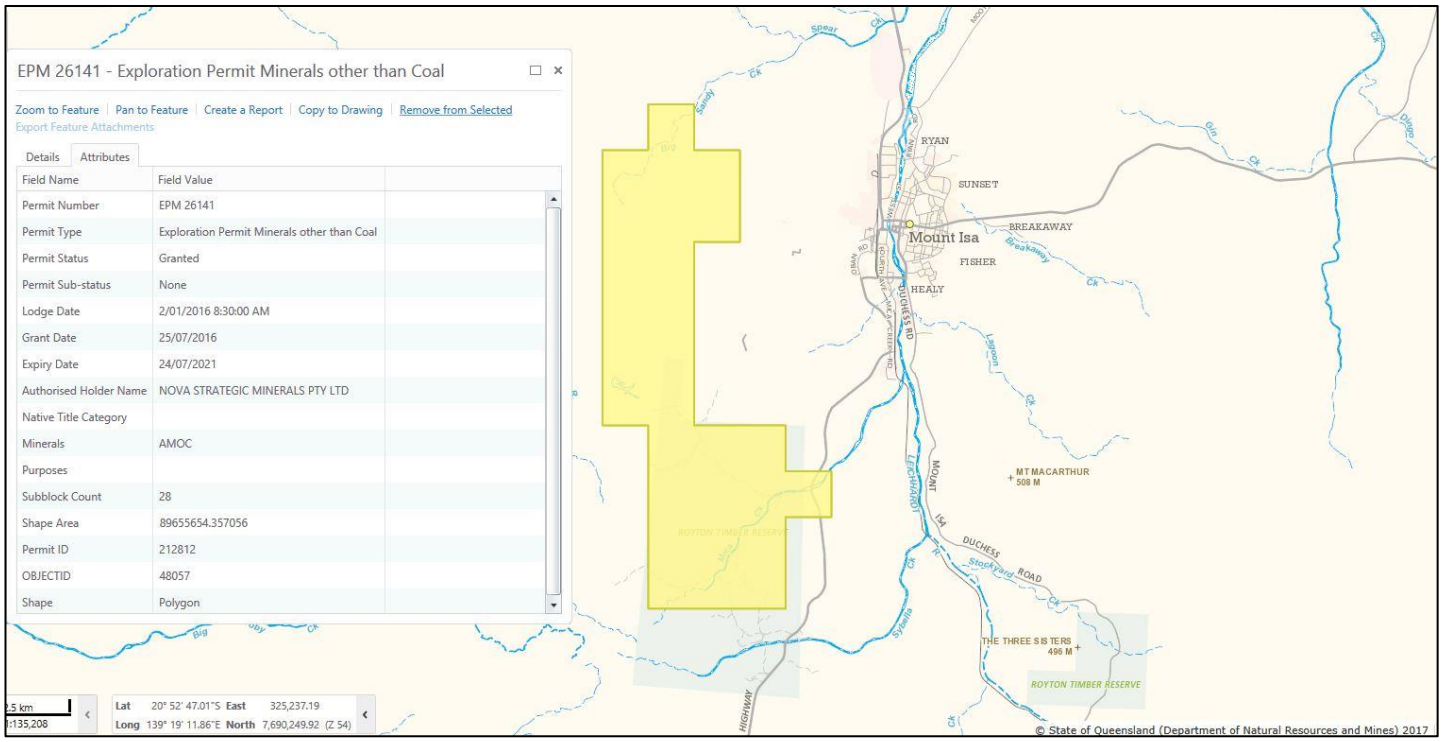


Fig: 1 locality map A

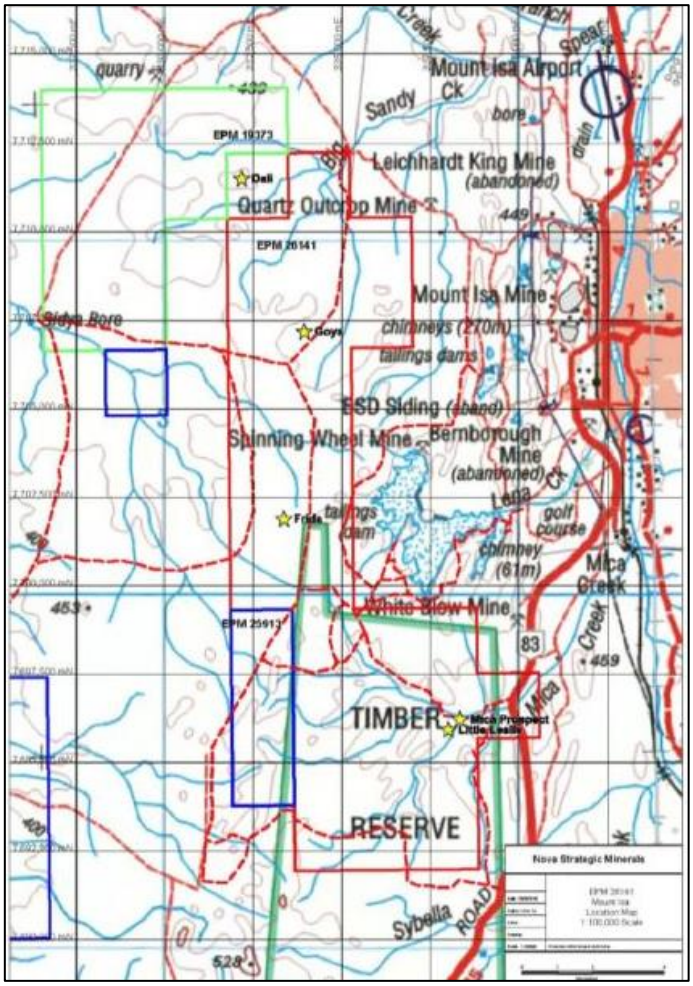


Fig: 2 Locality map B

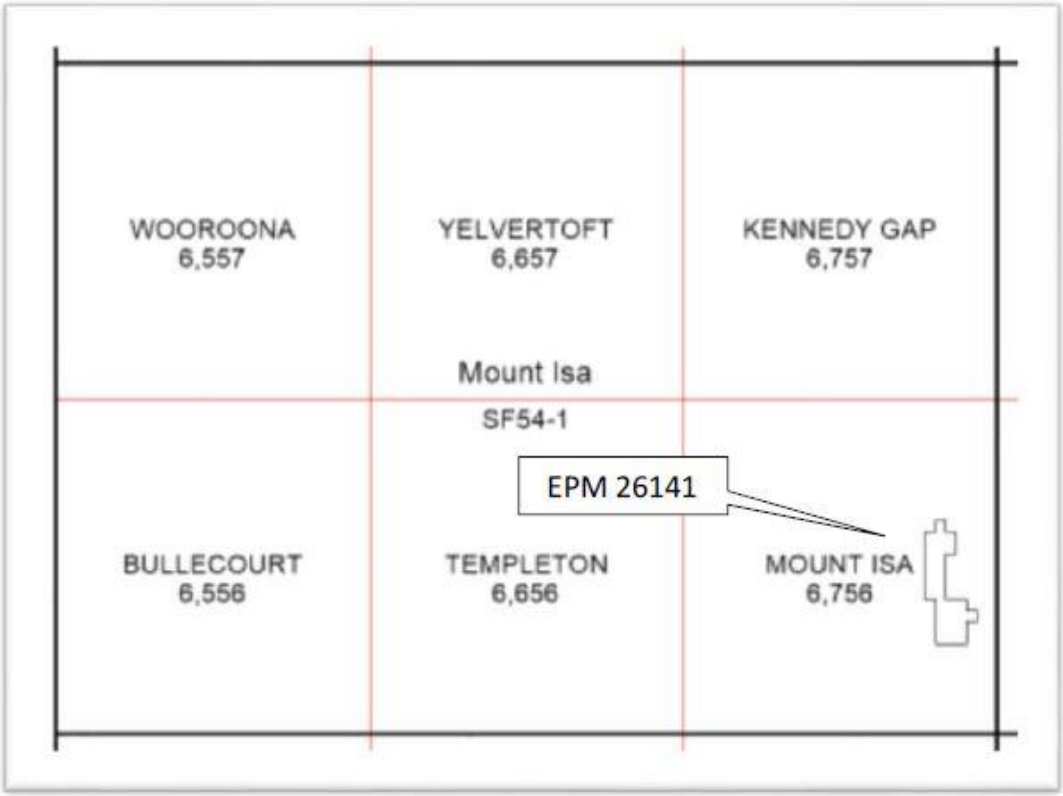


Figure 3. EPM 26141 Map Indexes
(Qld Govt Geology 1:250,000 (black) and 1:100,000 (red))

BIM	BLOCK	SUB-BLOCK
CLON	593	K, O, P, T, U, Y, Z
CLON	594	L, Q
CLON	665	D, E, J, K, O, P, U, Z
CLON	666	Q, R, V, W, X
CLON	737	E, K
CLON	738	A, B, F, G

Table 1. EPM 26141 Tenement Block Identifiers (Clermont) – 28 Sub Blocks

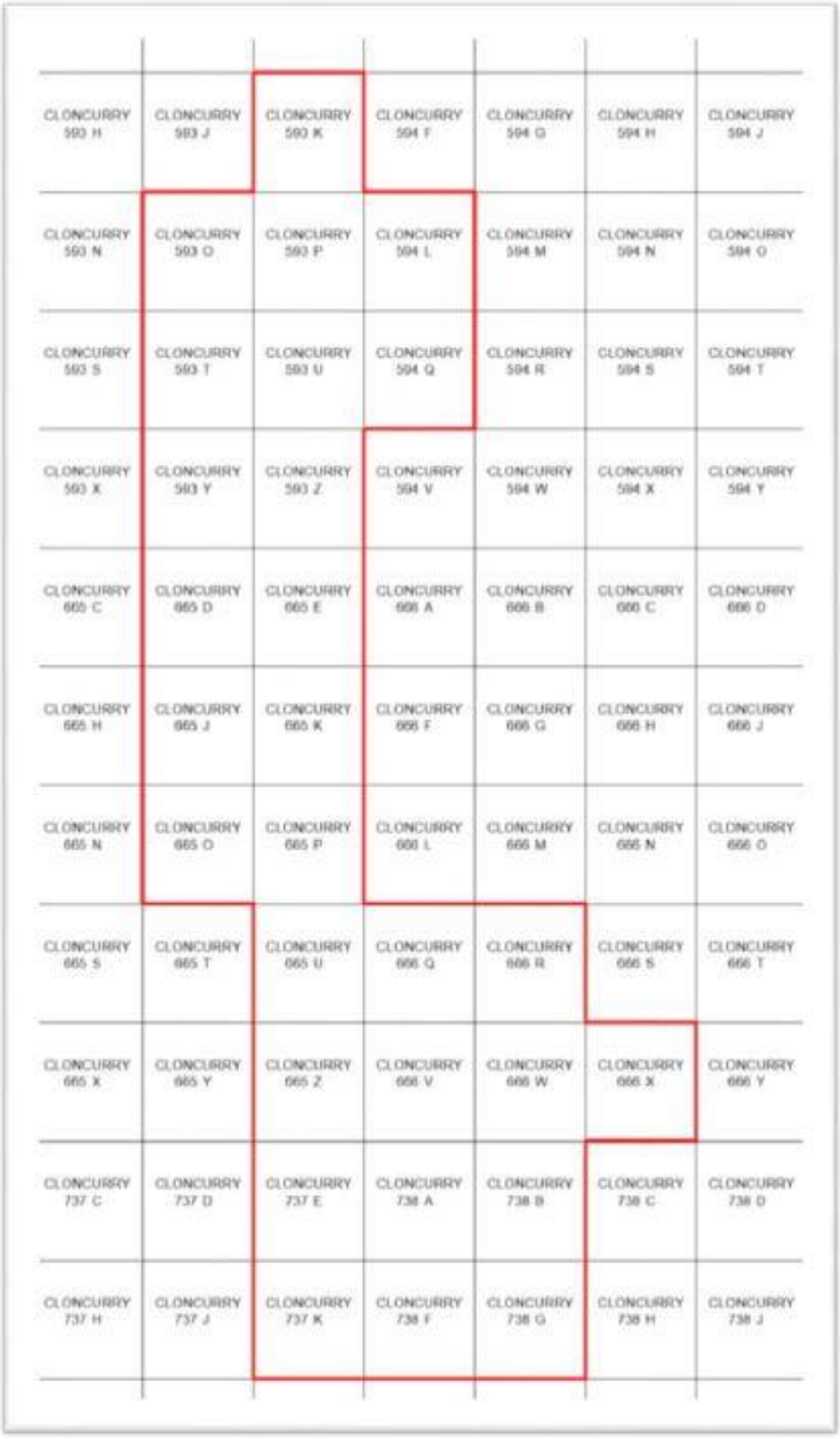
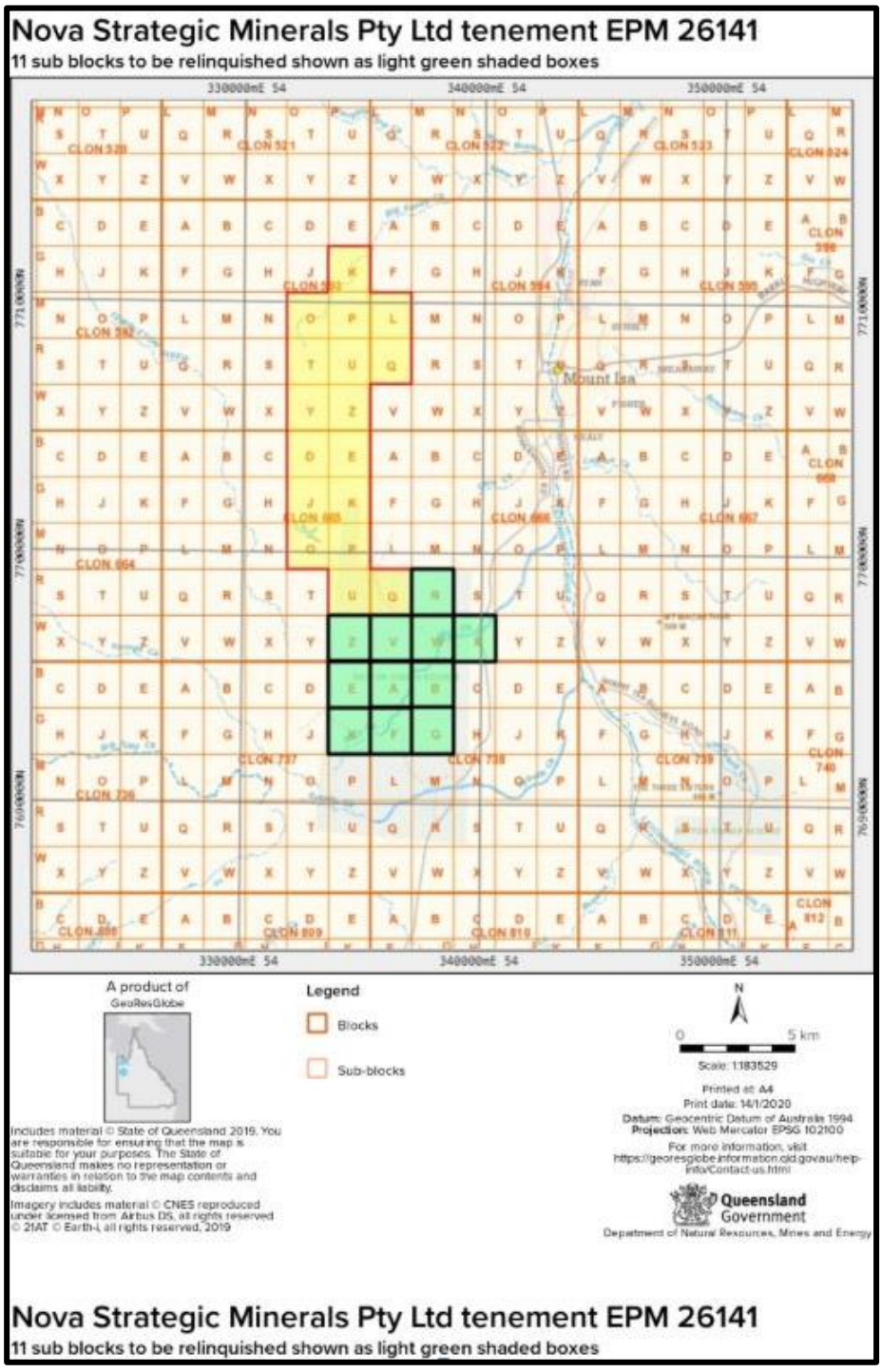


Figure 4. EPM 26141 Tenement Details - Sub-Block Distribution

fig: 4 Green Shaded sub blocks to be dropped



EPM 26141 Relinquished sub block table

EPM 26141 table of 40% Sub Blocks to be reliquished			
BIM	**BLOCK**	**SUB BLOCK/S**	**Number**
CLON	665	Z	1
CLON	666	R,V,W,X	4
CLON	737	E,K	2
CLON	738	A,B,F,G	4
		TOTAL	***11***

EXPLORATION RATIONALE

The history of exploration in the Western Succession of the Mount Isa Inlier, particularly immediately west of the Mount Isa Fault confirms a prominent mineralised province in part associated with the extensive Sybella Batholith and associated diverse pluton styles, influenced also by post intrusive multiple deformation events that are thought to have mobilised and focussed mineralisation including copper, gold and uranium.

Suites of mineralised pegmatites add to the regional exploration potential for beryllium, tin, tungsten, tantalum, niobium, mica, and more recently, lithium uncovered by NSM.

Substantial clean quartz outcrops are a potential supply of High Purity Silica.

Both MIM and more recently Xstrata/Glencore have regarded this region as having potential for the discovery of economic copper-gold mineralisation.

Xstrata has focussed mainly on intrusion and volcanogenic related copper-gold metasomatic mineralisation styles considered in part to be genetically related to granitoid components of the Sybella Batholith.

Based on a coincident gravity and magnetic anomalies associated with the Sybella Granite Complex, MIM Exploration targeted iron oxide copper-gold (IOCG style) similar in style to both the Olympic Dam copper-gold-uranium-REE deposit in South Australia and the Ernest Henry copper-gold deposit in the Eastern Succession of the Mount Isa Inlier north of Cloncurry.

Locally, their main area of focus was centred on of the Dali prospect.

As the Sybella Granite intrudes members of the Haslingden Group which includes the metasedimentary sequences of the May Downs Gneiss, the Mount Guide Quartzite (recently renamed Alpha Centauri Metamorphics), the Eastern Creek Volcanics and the overlying Myally Sub-group, these sequences have been regarded as having potential to host economic mineralisation.

Recent reporting by Xstrata has confirmed significant copper-gold associated with the Eastern Creek Volcanics and reported anomalous stream sediment gold geochemistry indicating potential for shear-vein hosted gold mineralisation within the Haslingden Group which trend through the eastern corridor of the current tenement area.

Copper-gold mineralisation has also been identified associated with sheared albite metasomatised pegmatites (albitites) hosted meridionally within the May Downs Gneiss at the Dali prospect adjacent to the Easter Egg Granite (recently renamed, and part of the Sybella Batholith); located on the north-eastern margin of the Sybella Batholith and at the northern end of tenement EPM 26141).

These copper bearing pegmatites trend southwards and host the copper anomalous Goya and Frida prospects. Along this trend, copper mineralisation also occurs on and adjacent to redox contacts between the pegmatite and subparallel intrusives of dolerite.
Based on previous exploration and reported mineralisation occurrences and styles to date, NSM regard this latter style as having the potential for the discovery of a potentially economic copper resource both as a source of acid-leachable secondary copper carbonate mineralisation (malachite) and also primary bulk low-grade disseminated copper-(gold) sulphide mineralisation.

As previously mentioned, NSM is also targeting not only the May Downs Gneiss hosted sodic (albite feldspar) pegmatites, but mineralisation, in particular, lithium in and around the pegmatites of the Mica Creek area.

Beryl, tantalum and niobium bearing minerals, cassiterite, monazite, fluorite and bismuth minerals have been reported within the pegmatites. In an earlier phase of beryl exploration in 1965, MIM also identified lepidolite during beneficiation of beryl ore, indicating that lithium is also associated with these pegmatites.

These significant beryl deposits occur in tourmaline pegmatites located in contact metamorphics (Mount Guide Quartzite now renamed Alpha Centauri Metamorphics) adjacent to local intrusives of pegmatitic biotite granite and muscovite-biotite granite. Stream sediment samples taken by Xstrata along the metamorphic contacts assayed around 500 ppm Cobalt.

Tin as cassiterite (SnO_2) was historically mined at the Little Leslie tin prospect (Figure 2) where it is associated with quartz-muscovite veins in north-west trending pegmatite dykes immediately west of the contact with the recently termed Mavis Granodiorite.

This contact corridor where the granitic rocks are locally altered and silicified, correlates with a prominent thorium radioactive anomaly reported as caused by monazite ((cerium, lanthanum, neodymium, thorium) PO_4) rare earth mineralisation, identified by MIM and confirmed in local heavy mineral sediments and reported prospect.

Lithium is a significant target in the Mica Creek area as the local elemental geochemistry may indicate Lithium-Caesium-Tantalum/Niobium (LCT) style pegmatites. These are characterised by an association of lithium-caesium-tantalum as well as rubidium, beryllium (beryl), tin (cassiterite), boron (tourmaline), phosphorus (monazite) and fluorine (fluorite). All, (apart from caesium and rubidium) have been previously reported from the Mica Creek pegmatite area.

PREVIOUS EXPLORATION

Table 2 on the following page summarises the key explorers that have had tenements intersecting EPM 26141 and associated publicly available reports available on the Queensland Government QDEX mining and exploration reporting portal.

Year	Prospect	Reports	Company	Mineralisation
1965	ATP 218M	GSQ008132CA, GSQ008379CA	Mount Isa Mines Limited	Beryl, Ta, Nb,
1969-1971	ATP 467M	CR3468	Queensland Mines Ltd	U, Cu, Pb, Zn
1969-1971	ATP 620M	CR3788	Eastern Copper Mines	U, Cu, Pb, Ag
1970-1972	ATP 967M Spear Creek	CR4211	Esso	U
1973	ATP 1132M	CR4463	Exoil NL, Transoil NL	Be
1973	ATP 1193M	CR4837	Savage Exploration Pty Ltd	U
1980-1983	EPM2264 Sybella	CR8279, CR8666, CR9287, CR10377, CR11103, CR11104, CR12319	Mount Isa Mines Limited	Cu, Sn
1991-1996	EPM6001M Mount McArthur	CR 22224, CR22274, CR34221, CR24519 CR24933, CR25509, CR25946, CR27989	Mount Isa Mines Limited	Cu, Ag-Pb-Zn, Au
1994-2012	EPM9585 Slaughteryard	CR35112, CR38571, CR39868, CR44448, CR47774, CR53179, CR58649, CR63549, CR64422, CR68364, CR68364, CR68591, CR73838	Mount Isa Mines Limited	Cu, AuInt
1997-1998	EPM9987 (&9585)	CR29639, CR29717, CR29824	Mount Isa Mines Limited	Cu, Au
2005-CURRENT	EPM12886	CR40159, CR71803, CR78521, CR92636	Xstrata Copper Exploration, (Glencore) Deep Yellow Ltd	U, Cu, Au
2009-2011	EPM15174 Vortex	CR58815, CR68575	Mount Isa Mines Limited, Xstrata Copper Exploration	

Table 2: EPM 26141 Previous History

The earliest reported exploration was the discovery in 1914 of the muscovite micas pegmatites in the Mica Creek area. Beryl, cassiterite, mica, tantalum and niobium minerals were mined intermittently since 1922 and about 80 tons of beryl (beryllium) was mined between 1943-1958 from pegmatites, also in the Mica Creek area.

Between 1963-1964, Mount Isa Mines Ltd explored ATP 218M (EPM 218) located in the Mica Creek area and reported beryl, tantalum and niobium bearing minerals (tantalum/niobium occurs within black illmenorutile), cassiterite, monazite, bismuth minerals, muscovite, quartz and feldspar occurring within pegmatites. Interestingly, lepidolite was identified in the beneficiation of beryl, indicating the presence of lithium associated with the pegmatites.

Minor uranium was first discovered in the early 1950's and up until 1974, most exploration companies focussed on uranium.

Queensland Mines Ltd, Eastern Copper Mines, Esso and Savage Exploration focussed on exploration for uranium, but also variously covered copper, lead, silver and zinc. Many airborne and ground magnetics and radiometric surveys were completed to identify

radioactive mineralisation. Regional stream sediment geochemical anomalies were followed up by mapping and in some cases, with soil and rock-chip sampling. Some anomalies were thought to be caused by smelter fallout contamination. Recently, (2011-2015) Deep Yellow Ltd (JV with Xstrata) revisited exploration for uranium mineralisation similar to the Valhalla deposit located about 20km north of the tenement. The Valhalla mineralisation is hosted in a soda metasomatised unit within metasediments bounded by Eastern Creek Volcanics (Haslingden Group).

In 1973, Exoil NL explored for beryllium in pegmatites at Mica Creek which included detailed geological mapping and the collection of 233 rock chips on 1000m spaced lines from 11 prospects. They also collected 6 stream sediment samples.

MIM completed work on ATP 2264M 'Sybella' between 1980 and 1982 in the Mica Creek area, identifying anomalous tin, tungsten, tantalum and niobium. Exploration included stream and rock chip surveys, geological mapping and geophysical surveys.

Tin bearing pegmatite phases within the Sybella were identified. The known cassiterite deposits include the Paman and Little Leslie. Results from rock chip sampling from the Sybella Granite in the Mica Creek area were up to 281ppm Sn, 210ppm Nb, 1665ppm W, and 30ppm Ta. Known tin deposits have associated monazite.

Regional stream sediment and rock chip sampling surveys for Sn, Ti, Ni, Ta were carried out over the Queen Elizabeth pluton, concentrating mainly on the thorium-rich rim. This eastern rim of the granite pluton is also strongly silicified.

The results of exploration delineated a new 2km by 400m zone of anomalous (>60ppm) tin mineralisation south of the Mica Creek Tin mine (Lithgow Tin Mine?) (over the Little Leslie Tin deposit).

By the 1990's MIM had begun to focus mainly on copper-gold. Exploration up until the late 1980's was carried out by Carpentaria Exploration until the MIM Exploration unit was set up based in Mount Isa.

Although EPM 6001 covered a portion of the current tenement area between 1991 and 1996, exploration was focussed elsewhere in their tenement.

Between 1997 and 2012, exploration at the contiguous Slaughteryard EPMs 9585 and 9957 was directed towards the search for copper-gold metasomatic mineralisation associated with intrusive phases of the Sybella Granite Complex. Two styles were targeted including those related to coincident gravity and magnetic anomalies typical of IOCG style mineralisation, as well as shear/vein hosted copper-gold all within the Haslingden Group. From 2008, Deep Yellow Ltd in JV with Xstrata explored for uranium with Xstrata maintaining interest in the gold-copper mineralisation.

Initially, exploration included detailed gravity centred around a local high intensity aeromagnetic anomaly.

A stream sediment sampling program located anomalous gold which was followed up with soil sampling grids targeting shear/vein hosted gold, but no further gold anomalism was located. In 2010 a soil sample assayed 11.9 g/tonne Gold at the Frida West prospect.

Detailed geophysical surveys confirmed the predicted coincident gravity and aeromagnetic anomalism, however an EM survey failed to locate any significant coincident conductors and follow-up detailed soil sampling did not highlight any significant anomalies.

MIM modelling implied that a deeper mafic differentiate rather than the surface granodiorite accounted for the gravity anomaly and the magnetic anomalism was a near surface feature possibly caused by more magnetic rocks occurring as xenoliths in the diorite phase of the Sybella Granite or as separate discrete bodies.

In 2003-2004, detailed geological mapping, soil, and rock chip sampling within the Slaughter Yard tenement located a 2km by 1km zone of copper-gold mineralisation called the "Dali prospect" which returned rock chip samples with elevated copper and gold values up to 3.85% Cu and 0.59ppm Au, hosted in May Downs Gneiss adjacent to the Sybella Granite.
.
In November 2005, coincident MIMDAS MT conductive, IP chargeability and resistivity anomalism located under the "Dali hill" with surface 1265ppm copper and 55ppb gold rock chip anomalism was tested by a 584.2m deep drill hole, (Dali 1, -60 to 360 (AMG) at 331973mE 7711366mN-GDA84zone54), minor chalcocite mineralisation was intersected and appears restricted to redox zones between oxidised and reduced rocks such as along pegmatite contacts and along contacts between gneiss and mafic intrusives. It is noted that inversions using other software failed to define the originally targeted conductivity and chargeability anomalies.

It was concluded from the radio metrics that potassium (K) radio metrics correlated with biotite altered zones and may assist with locating copper mineralisation (due to biotite alteration association with copper mineralisation).

It was also concluded that the geological and geochemical data obtained to date indicated a low sulphide mineralised system, demonstrating that caution be required when utilising IP data in isolation.

In the period 2008-2012, Deep Yellow Ltd in JV with Xstrata Copper Exploration explored the Slaughteryard tenements for uranium, copper and gold. Further radiometric surveys located radiometrically anomalous pegmatite zones within the May Downs Gneiss.

In the southern-most sub-block of EPM 9585 (Now part of EPM 26141), interpreted demagnetised intersecting D3 structures were targeted by rock chip sampling but copper values were low with best at 115ppm Cu. EPM 12886 straddled the Goya and Frida prospects extending south of the EPMs 9585 and 9957. Xstrata continued its focus on copper and gold with Deep Yellow, focussing on uranium. Geochronology dating the pegmatites in the area as D_3 (syn-Isa copper mineralisation).

This was considered support the possibility of hidden Williams-Naraku style intrusions that may be associated with Eastern Succession style metasomatic Ironstone copper-gold (IOCG) mineralisation (e.g. Ernest Henry).

Evaluation of Goya Prospect by DYL, included geological mapping, rock chip sampling and ground radiometric surveying. Two small radiometric anomalies trending north-south corresponded to outcrop and sub crop of biotite-quartz-feldspar pegmatite within a biotite quartz-feldspar gneiss. Malachite (and meta-torbernite?) was visible as patches within the pegmatite.

DYL tested the prospect with two reconnaissance RC drill holes in 2008 for a total of 180m which intersected thin zones of mineralisation.

In 2011-2012, Xstrata did further exploration over the Goya and Frida prospect completing detailed geological mapping and soil surveys and rock chip sampling.

Identified copper mineralisation was associated with sheared pegmatites. No targets were identified by IP geophysical surveys. Subsequently this area was relinquished from the EPM.

GEOLOGY AND MINERALISATION

EPM 26141 is situated in the Western Fold belt of the Mount Isa Proterozoic Inlier. Exposures of the Sybella Granite Complex occur within the tenement where it intrudes members of the Haslingden Group including the May Down Gneiss Member and the Mount Guide Quartzite (renamed Alpha Centauri Metamorphics) and Eastern Creek Volcanics (oldest to youngest sequence).

The Haslingden Group, which is part of Cover Sequence 2 (deposited 1790-1720Ma) is regarded as deposited during a rift-sag fill tectonic cycle. Parts of the tenement are covered by Cainozoic and Quaternary alluvium.

Geological maps of the prospect areas are presented as follows:

Figures 5: Regional geology from published 1:250,000 geology (Australia geoscience,1987).

Figure 6: Recent detailed 1:100,000 geology compiled by the Queensland geological Survey.

Figure 7: Detailed geology of the Mica Creek area derived from the 1:50,000 Mica Creek 1:50,000 geology map published Sept 2014.

Figure 8: Legend of the Mica Creek 1:50,000 geology map, including the geological symbols.

The Sybella Batholith occurs as a large meridional elongate-lobate zone that covers an area of over 1600km^2. It is described as an A-type composite granitoid complex with several phases of differing composition. It is regarded as having intruded in an extensional phase during the development of the Mount Isa Basin. The western contact of the batholith is fault bounded by the May Downs Fault against the McNamara Group (Mount Isa Group equivalents).

In the tenement area the host sediments tend to parallel the contact zones and have normal intrusive contact characteristics. In the geological legend, (Figure 6) elements of the Sybella batholith have been reassigned the prefix “Lg”.

The targeted copper mineralisation that occurs at the Frida-Goya (and Dali) prospects is hosted within the May Downs Gneiss Member (Lhs), reported on the 1:50,000 Mica Creek geological map as an undifferentiated zone of plagioclase-K-feldspar-quartz gneiss containing biotite, sillimanite, and muscovite and migmatitsed cordierite-K-feldspar gneiss.

The copper mineralisation occurs along a north-south trending corridor and is closely associated with pegmatitic zones as outlined in Figure 4. Based on preliminary field observations, the copper mineralisation identified from anomalous copper-(gold) rock chips is most prominent in contact zones between variably brecciated and deformed dolerite and quartz-feldspar pegmatitic contacts thought to represent zones of redox mineralisation.

The copper mineralisation occurs as blebby and disseminated chalcocite, and possibly bornite in veins of quartz or quartz-feldspar, often associated with selvages of very coarse biotite, especially within pegmatites.

In metadolerite, the mineralisation occurs as thin stockwork quartz-feldspar veins with blebby chalcocite and bornite. These pegmatites appear to have been intruded before peak D_2 deformation (1532+/-7 Ma). and now are deformed and altered possibly in part by peak D_2 axial plane deformation and shearing.

Copper (chalcocite) mineralisation appears to be associated in part by quart-feldspar stockwork veining associated with potassic alteration suggesting post deformational mineralisation (D_3?).
These pegmatites are variable in grainsize but generally characterised by the occurrence of *white albitic feldspar*.

In the Mica Creek area, a younger pegmatite phase postdates D_2 deformation and has a reported emplacement age of 1480+/-14Ma. These pegmatites are characterised by *pink potassic feldspar* and common tourmaline. They have historically been mined for beryl.

MI Xstrata surmised that they were not genetically related to the Sybella batholith, but rather, derived from a non-outcropping deeper granitic system thought to equate with the Williams-Naraku granites located in the Cloncurry district of the Eastern Succession of the Mount Isa Inlier.

The recent 1:50,000 geological map of the Mica Creek area maps the tourmaline-beryl pegmatites as associated with a pegmatitic biotite and biotite-muscovite granite intrusive (Lgs/p) forming a separate element of the Sybella Granite complex (see legend for relative age-related intrusive stratigraphy).

In the Western Fold Belt. multiple phases of deformation, metamorphism and metasomatism have altered and mineralised local rocks. Locally, metamorphic grades increase westwards ranging from greenschist near the Mount Isa Fault zone to amphibolite facies in the Sybella Granite and adjacent May Downs Gneiss.

During D_2 peak metamorphic conditions reached 600°C and 4Kbar producing upper amphibolite facies low P, high T metamorphism which persisted post D_2 possibly through to the D_3 deformation event. Local northwest and northeast trending fault/shear zones that show alteration and displace uranium mineralisation are equated with this cycle of deformation and may be equivalent in age to the Mount Isa base metal sulphide deposits.

Research reporting (see bibliography) about the Isan Orogeny (1610-1480 Ma) describe several deformation phases:

D_1 folds and cleavages which are rare in the country rocks and don't occur within the granite. S_1 is in places parallel to S_0.

D_2 folding on all scales and a penetrative S_2 cleavage, which is the dominant fabric across the entire Mount Isa Block.

D_3 comprised of initial D_{3a} shearing followed by mesoscopic to megascopic.

D_{3b}folding which is observed in large scale folds in the southern portion of the batholith.

D_4 & D_5 recognised only in the country rocks and not in the batholith.

Reported age dating of main events is as follows:

1.83+/- 0.05Ga Eastern Creek Volcanics (Re-Os dating)

1657+/-7Ma Sybella granite

1.670+/-9Ma Kitty Plains microgranite; possible source of uranium? later disturbance at 1,589+/-29Ma

1591+/-10Ma Peak D_2 deformation and metamorphism (monazite in syn D_2 garnet)

1577+/-48Ma, 1573+/-12M Quartz-tourmaline veins, (boron metasomatism occurred soon after peak metamorphism)

1565+/- 5Ma, 1532+/-7Ma and 1480+/-14Ma Mica Creek pegmatites (U-Pb zircon age dating but zircons metamict)

1590-1500 eastnortheast-westsouthwest shortening and Mount Isa base metals deposit formation (D_3?)

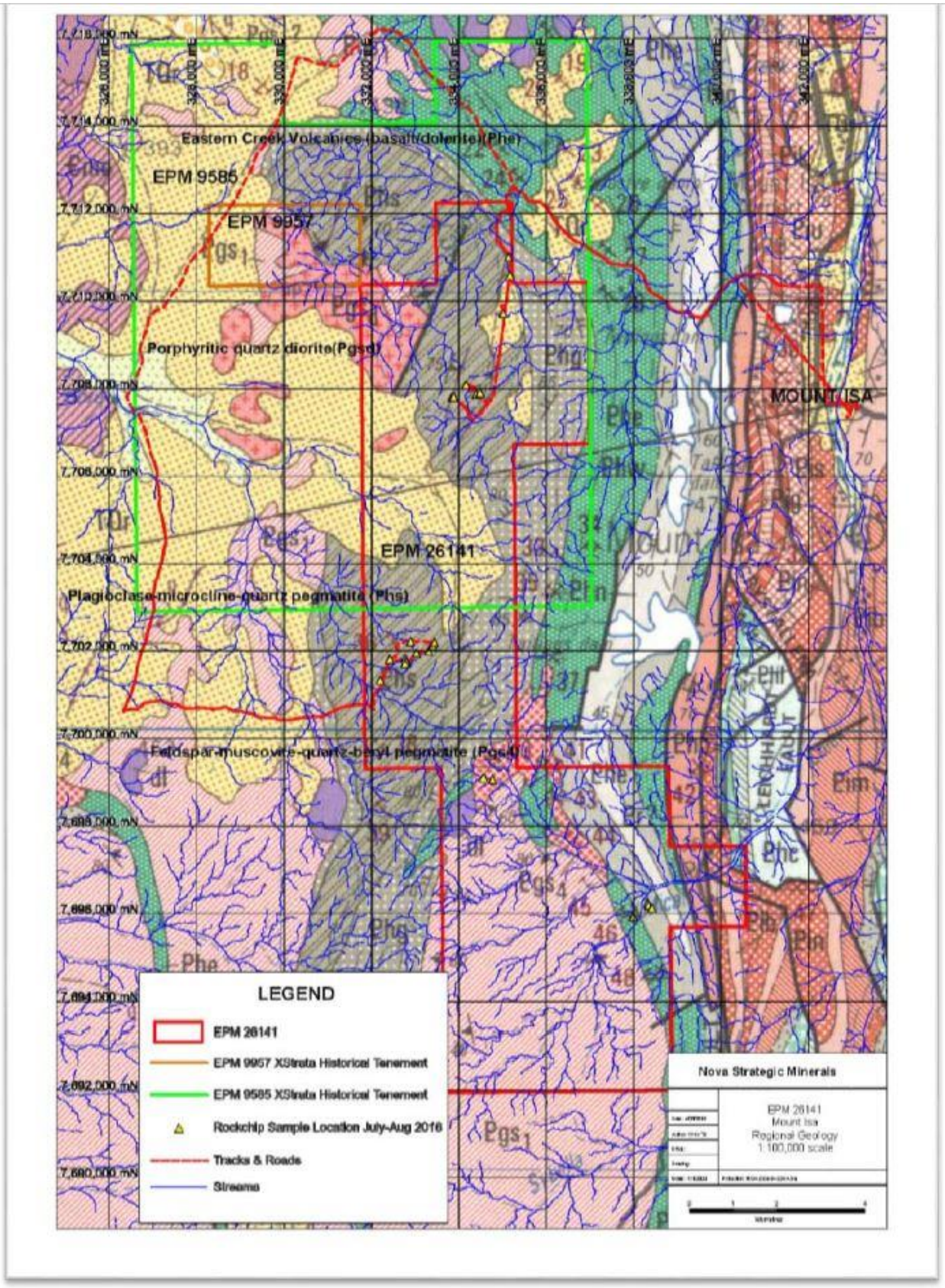


Figure 5. Regional Geology (Aus Geosc 1:250,000)

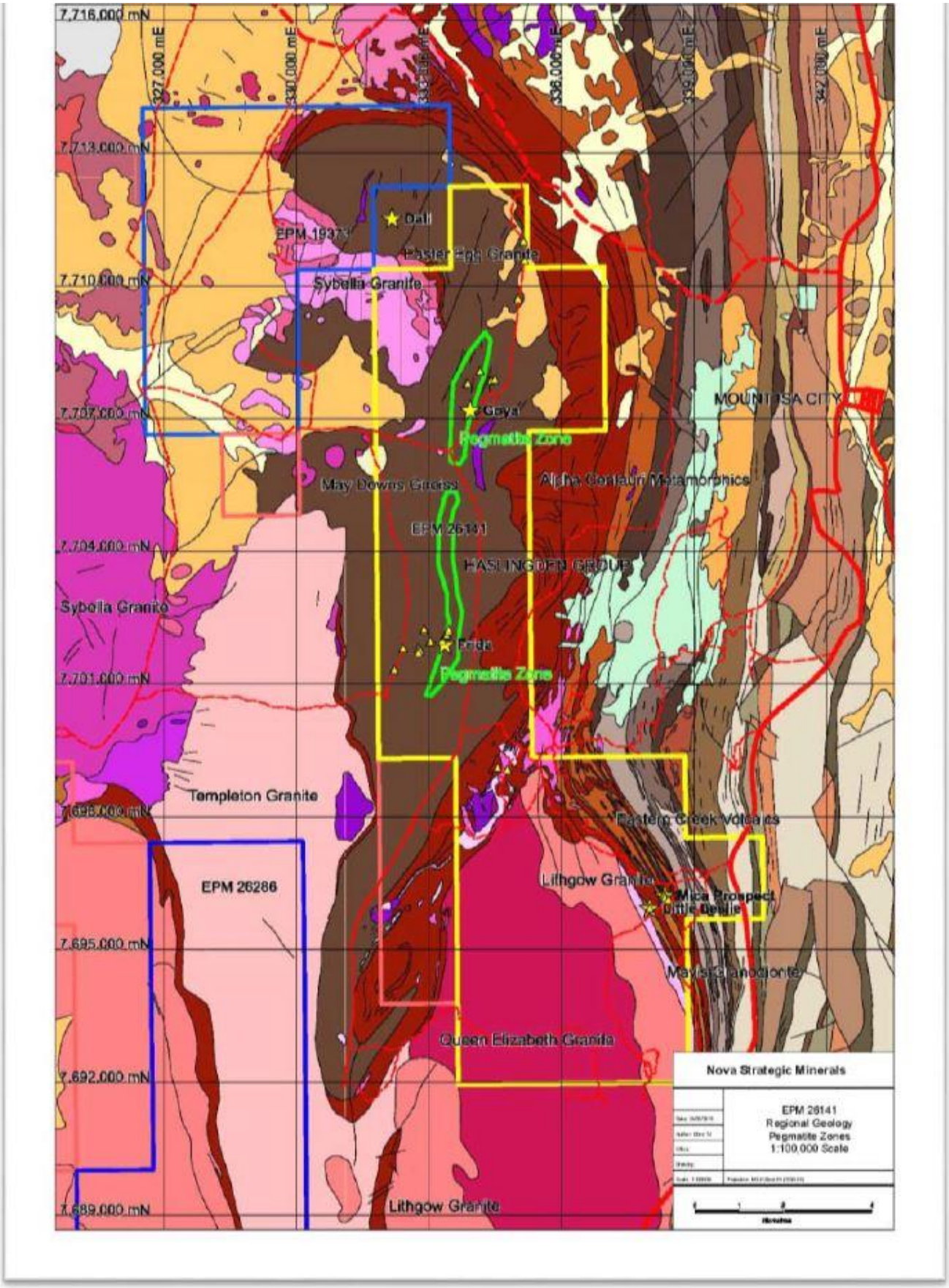


Figure 6. Geology: 1:100,000 (GSQ)

SYMBOL	ROCK UNIT NAME	AGE	LITHOLOGY SUMMARY
Qhh	Qhh-QLD	Holocene	Gravel, sand, silt - man-made deposits generally associated with land-fill or mining (tailings, dumps and rehabilitated areas)
Qha	Qha-QLD	Holocene	Sand, gravel, silt and clay; active stream channels and low terraces
Qalc	Qalc-QLD	Quaternary	Clay; commonly 'black soil'; flood-plain alluvium
Qa	Qa-QLD	Quaternary	Clay, silt, sand and gravel; flood-plain alluvium
TQr-Lgw	TQr-QLD+Widgeawarra Granite	Late Tertiary - Quaternary	Clay, silt, sand, gravel and soil; colluvial and residual deposits (generally on older land surfaces)
TQr-Lgh	TQr-QLD+Hay Mill Granite	Late Tertiary - Quaternary	Clay, silt, sand, gravel and soil; colluvial and residual deposits (generally on older land surfaces)
TQr	TQr-QLD	Late Tertiary - Quaternary	Clay, silt, sand, gravel and soil; colluvial and residual deposits (generally on older land surfaces)
TQals	TQals-QLD	Late Tertiary - Quaternary	Sand and mud; high-level alluvium and colluvium
Cbc	Beetle Creek Formation	Cambrian	Chert, siliceous shale with trilobite fossils, basal conglomerate
Lgmv	Mervis Granodiorite	Mesoproterozoic	Medium-grained, hornblende-biotite granodiorite; locally strongly deformed
shz	Shear Zone-Mt	Proterozoic	Shear zone
dz/X	dz/A-Mt	Proterozoic	Medium to coarse-grained dolerite or gabbro, pyroxene-bearing, commonly olivine-bearing, ophitic texture; minor amphibolite and metadolerite
dz/U	dz/U-Mt	Proterozoic	Metadolerite, amphibolite; minor schistose amphibolite, biotite or chlorite schist
dz	dz-Mt	Proterozoic	Metadolerite and metagabbro of various ages passing into amphibolite and local biotite or chlorite schist; rare pyroxene-bearing dolerite
Lsr	Surprise Creek Formation	Palaeoproterozoic	Quartzite, sandstone, calcareous sandstone, conglomerate, siltstone, shale
Lpc	Paradise Creek Formation	Palaeoproterozoic	Stromatolitic dolomite, dolomitic siltstone, some limestone interbeds; dolomite with chert nodules after anhydrite; minor pink to grey fine tuff
Lgc/Sf	Gunpowder Creek Formation/Sf	Palaeoproterozoic	Ferruginous siltstone, sandstone, minor conglomerate
Lgc/S	Gunpowder Creek Formation/S	Palaeoproterozoic	Brown-weathering flaggy dolomite and dolomitic siltstone overlain by grey carbonaceous siltstone
Lgc/2	Gunpowder Creek Formation/2	Palaeoproterozoic	Fine-grained micaceous siltstone and shale, interbedded fine-grained quartz sandstone and siltstone
Lgc/1	Gunpowder Creek Formation/1	Palaeoproterozoic	Orthoquartzite, conglomerate
Lgc	Gunpowder Creek Formation	Palaeoproterozoic	Laminated siltstone, dolomitic and carbonaceous siltstone, fine sandstone, feldspathic and pyritic quartzite, pebbly clayey sandstone
Lcp	Torpedo Creek Quartzite	Palaeoproterozoic	White to medium orthoquartzite, with gypsum pseudomorphs locally
Lfs	Yaringa Metamorphics	Palaeoproterozoic	Quartz - muscovite and quartz - sericite schist and phyllite, quartz - muscovite - biotite gneiss, minor migmatite
Lwr	Warrina Park Quartzite	Palaeoproterozoic	White medium-grained feldspathic to predominantly quartzose sandstone, pebbly sandstone and minor conglomerate, minor siltstone
Lur	Urquhart Shale	Palaeoproterozoic	Grey pyritic siltstone, tuff marker beds
Lsp	Spear Siltstone	Palaeoproterozoic	Laminated dolomitic siltstone and shale
Lnb	Native Bee Siltstone	Palaeoproterozoic	Dolomitic siltstone, dolomite, siliceous siltstone, chert
Lmb	Moondarra Siltstone	Palaeoproterozoic	Cream to red-brown laminated siltstone, fine sandstone, dolomitic siltstone and dolomite
Lmk	Kennedy Siltstone	Palaeoproterozoic	Dolomitic siltstone, dolomitic quartzite
Lmg	Magazine Shale	Palaeoproterozoic	Thin bedded calcareous sericitic shale with minor pyrite
Lmb	Breakaway Shale	Palaeoproterozoic	Grey siliceous siltstone and shale
Lm1	Mount Isa Group/1	Palaeoproterozoic	Orthoquartzite to micaceous quartzite to psammite(commonly cross-bedded; local basal conglomerate (West of Mt Isa Fault)
Lhv	Whitworth Quartzite	Palaeoproterozoic	Massive medium to coarse feldspathic to quatzose sandstone, fine purple sandstone and mudflake conglomerate
Lfm	Mary Downs Gneiss Member	Palaeoproterozoic	Plagioclase-K-feldspar-quartz gneiss containing minor biotite, sillimanite and muscovite and migmatised cordierite-K-feldspar gneiss
Lfd	Carters Bore Rhyolite	Palaeoproterozoic	Porphyritic rhyolite, minor basalt
Lfp?	Pickwick Metabasalt Member?	Palaeoproterozoic	Grey-green metabasalt, red-brown trachybasalt, orthoquartzite, feldspathic quartzite, amygdaloidal metabasalt, flow-top breccia, tuff
Lfp	Pickwick Metabasalt Member	Palaeoproterozoic	Grey-green metabasalt, red-brown trachybasalt, orthoquartzite, feldspathic quartzite, amygdaloidal metabasalt, flow-top breccia, tuff
Lfmsq	Myally Subgroup/q	Palaeoproterozoic	Quartzite, micaceous quartzite and psammite; crossbedded
Lfmsp	Myally Subgroup/p	Palaeoproterozoic	Brown, fine-grained psammite to metasiltstone
Lfms	Myally Subgroup	Palaeoproterozoic	Variably feldspathic and lithic sandstone, siltstone and minor conglomerate
Lfd	Lena Quartzite Member	Palaeoproterozoic	Feldspathic quartzite, orthoquartzite with rare pebbles
Lfq	Mount Guide Quartzite	Palaeoproterozoic	Quartzite, feldspathic and micaceous quartzite, minor gneiss
Lfa?	Eastern Creek Volcanics?	Palaeoproterozoic	Metabasalt, amygdaloidal basalt, quartzite, tuff, pelitic schist
Lfecs	Eastern Creek Volcanics/s	Palaeoproterozoic	Pelitic schist, cordierite schist, quartzite and amphibolite
Lfecsq	Eastern Creek Volcanics/q	Palaeoproterozoic	Quartz sandstone, feldspathic quartzite, conglomerate, pebbly quartz sandstone, epidote quartzite; minor dolomitic sandstone
Lfecp	Eastern Creek Volcanics/p	Palaeoproterozoic	Micaceous psammite, psammopelite, pelite, minor schist
Lfecsq	Eastern Creek Volcanics/eq	Palaeoproterozoic	Quartzite, epidote-quartzite (epidosite)
Lfec	Eastern Creek Volcanics	Palaeoproterozoic	Metabasalt, amygdaloidal basalt, quartzite, tuff, pelitic schist
Lfa/q	Cromwell Metabasalt Member/q	Palaeoproterozoic	Feldspathic sandstone, epidote sandstone, quartzite, conglomerate
Lfa	Cromwell Metabasalt Member	Palaeoproterozoic	Metabasalt, amygdaloidal metabasalt, flow-top breccia, tuff
Lfb	Bortala Formation	Palaeoproterozoic	Flaggy, fine feldspathic sandstone, siltstone, micaceous siltstone, dolomitic sandstone, tuffaceous siltstone, grey - green chert
Lfa	Alsace Quartzite	Palaeoproterozoic	Fine to coarse feldspathic sandstone and orthoquartzite, minor siltstone
Lgw	Widgeawarra Granite	Palaeoproterozoic	Foliated coarse porphyritic biotite granite
Lgk	Kaithys Granite	Palaeoproterozoic	Medium to coarse-grained slightly porphyritic biotite granite, microgranite
Lgeq	Queen Elizabeth Granite	Palaeoproterozoic	Variably porphyritic medium to coarse biotite granite, leucocratic granite, gneiss
Lgtn	Tangleton Granite	Palaeoproterozoic	Foliated coarse-grained porphyritic biotite granite
Lgyk	Lithgow Granite	Palaeoproterozoic	Leucogranite, banded pegmatite and aplite
Lgyk	Hay Mill Granite	Palaeoproterozoic	Variably porphyritic medium to coarse biotite granite
Lgw	Easter Egg Granite	Palaeoproterozoic	Foliated coarse porphyritic biotite granite, porphyritic quartz diorite with quartz ocelli
Lgpb	Sybella Granite/p	Palaeoproterozoic	Pegmatitic biotite granite and muscovite-biotite granite, tourmaline and beryl-bearing pegmatite
Lgvleq	Sybella Granite/eq	Palaeoproterozoic	Fine to medium-grained, equigranular (muscovite)-biotite granite, locally abundant xenoliths
Lgs/1	Sybella Granite/1	Palaeoproterozoic	Foliated coarse-grained porphyritic biotite granite
Lgs	Sybella Granite	Palaeoproterozoic	Foliated coarse-grained porphyritic biotite granite
Lgbt	Big Toby Granite	Palaeoproterozoic	Adamellite, medium biotite granite, minor foliated coarse granite and zyenite
Lac?	Alpha Centauri Metamorphics?	Palaeoproterozoic	Layered calc-silicate rocks, fine-grained amphibolite and quartzite
Lac/s?	Alpha Centauri Metamorphics/s?	Palaeoproterozoic	Feldspathic and micaceous quartzite, minor gneiss
Lac/s	Alpha Centauri Metamorphics/s	Palaeoproterozoic	Feldspathic and micaceous quartzite, minor gneiss
Lac/q	Alpha Centauri Metamorphics/q	Palaeoproterozoic	Quartzite, feldspathic and micaceous quartzite, minor gneiss
Lac/p	Alpha Centauri Metamorphics/p	Palaeoproterozoic	Pelitic schist, cordierite-quartz schist, andalusite-sillimanite schist, quartzite and amphibolite
Lac	Alpha Centauri Metamorphics	Palaeoproterozoic	Layered calc-silicate rocks, fine-grained amphibolite and quartzite

Figure 8. Geology, Mica Creek Area, 1:50,000 (GSQ):Legend and Geological Symbols

CONCLUSIONS AND RECOMMENDATIONS

Eleven sub blocks have been relinquished from EPM26141 to conform with the requirement to reduce 40% of EPM26141 area in sub block reductions which are shown within this report.

Expediting applications for mining licenses is highly recommended in EPM 26141, for areas identified, where commercially viable extraction warrants these applications to be made.

Future exploration*:*

NSM are planning to conduct a geophysical survey over the EPM 26141 "Frida" copper mineralised area in H1 2020, of course this is dependent on weather and the availability of survey team.

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