GOLD FIELDS AUSTRALASIA PTY LTD

Mt Morgan Project

EPM18502 - Tomlin

Final Report for the Period
31st August 2011 to 30th April 2013

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DEEDI	(1)	AUTHOR:	S. Oxenburgh
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APPENDIX 1: Rock Sample Results — MM_QLDSG4_ROCK2012A.txt

LIST OF DIGITAL FILES

File name	Description
EPM18502_Final_Report_2013.pdf	Text, figures & tables
MM_QLDSG4_ROCK2012A.txt	Rock sample description and assays

Keywords: Tomlin, Gold, Copper, Rock Sample, Argoon Copper workings, E.D. Gold Mine.

Map sheets:
1:250k ROCKHAMPTON
1:100k MOUNT MORGAN
1:100k BILEOLA
1:100k BANANA

Executive Summary

This report describes the work undertaken by Gold Fields Australasia (GFA) on EPM18502 (Tomlin) tenement from the 31st of August 2011 until 30th of April 2013. The rock chip result (1 only) were returned during this reporting period for the sample collected during the August 2011 reconnaissance field trip. These rock chip results from the Argoon workings confirmed those taken by Asarco (Australia) Pty. Ltd. with 16.6% Cu and significant 0.11ppm Au.

Attempts were made to acquire tenements or Joint Venture agreements for the areas identified from the GRAS study that lie in the vicinity of the Mt Morgan deposit, however, these efforts failed to secure the most prospective ground. Gold Fields decided without access to its primary GRAS targets that the Mt Morgan Project was not an opportunity that they wished to continue to pursue. Thus no further work was completed for this tenement and the tenement has been relinquished.

Introduction

As part of Gold Fields Australasia (GFA) strategy to discover large and long life gold mines within Australia, it completed a Grass Root Assessment Study (GRAS). This process highlighted the Mt Morgan area for further investigation. The notable mineral occurrences in the area includes the major Mt Morgan Mine that produced approximately 8 Moz Au, 400kt Cu and 0.75 Moz Ag, as well as the Moonmera Cu-Mo porphyry deposit, which was only mined on a small scale for the supergene mineralisation. Previous exploration has focussed on the VMS genesis of the Mt Morgan ore-body and this has guided the exploration effort. GFA believes that there is an opportunity to discover Intrusive Related Gold (IRG) or porphyry Cu-Au related systems by shifting the exploration rationale and employing modern analytical techniques.

Gold Fields acquired a large tenement holding on the available open ground in an effort to secure a large tenement package to effective explore the Mt Morgan area. This strategy relied on the subsequent acquisition or Joint Venture (JV) agreements to obtain tenements over the identified GRAS targets. The inability to secure the tenements over the primary GRAS targets led GFA to withdraw from the Mt Morgan Project.

1.1 Title Details

EPM18502 (Tomlin) was granted to Gold Field Exploration Ltd Pty for a five year term on 31st of August 2010, see Table 1 for tenement details. This tenement is located approximately 45km south of Mt Morgan and 32km south-east of the township of Dululu, Figure 1. The licence covers an area of approximately 313km^2 (100 sub-blocks) and is part of GFA's Mt Morgan Project, which also includes (EPM18688, EPM18500 and EPM18503). The acquisition of this tenement was part of the strategy to acquire a large tenement holding to effectively explore the greater Mt Morgan area for Au-Cu porphyry related systems and Intrusive Related Gold deposits. The tenement was relinquished on 30th April, 2013.

TABLE 1 - TOMLIN (EPM18502) TENEMENT DESCRIPTION.

BIM Code	Block Number	Sub-blocks
BRIS	4	- - - - E - - - - K - - - - P - - - - - - - - -
BRIS	5	A B C - - F G H J K L M N O P Q R S T U V W X Y Z
BRIS	6	- - - - - F G - - - L M - - - Q R S T U V W X Y Z
BRIS	7	- - - - - - - - - - - - - - - Q R S T U V W X Y Z
BRIS	8	- - - - - - - - - - - M N - - Q R S - - V W X - -
BRIS	77	A B C D E - - - J K - - - O P - - - - U - - - - Z
BRIS	78	A B C D - F G H J - L M N O - Q R S T U V W X Y Z
BRIS	149	- - - - E - - - - - - - - - - - - - - - - - - -
BRIS	150	A B C D E - - - - - - - - - - - - - - - - - - -
ROCK	3388	- Z
ROCK	3389	- V W - - -
Current number of sub-blocks held: 100		

1.2 Project area and Access

The tenure on EPM18502 includes Don River State Forest, freehold and leasehold land with the primary productive activities involving cattle grazing and cereal cropping. Topography varies within EPM18502 from undulating in the west to rugged in the eastern portion. This tenement can be accessed from the Burnett Highway on the western side but the eastern region can only entered by farm/ forestry tracks off the Inverness road. The larger area is well serviced by road, rail, port and energy facilities.

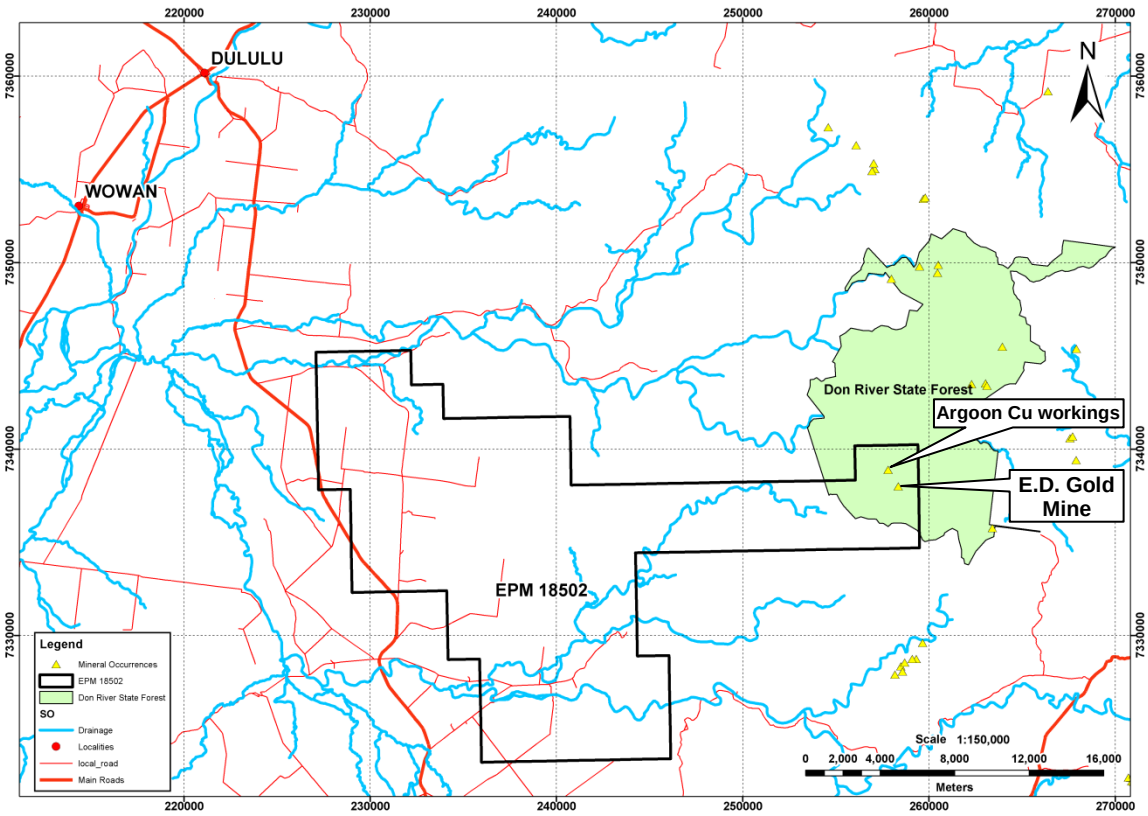

Figure 1 Location Plan

1.3 Exploration Rationale

Gold Fields Australasia has been actively exploring in Queensland since 2007, when it entered the Mt Carlton JV with Conquest Mining Limited. The focus of exploration in Queensland has been to discover low-cost and long life gold mines. This includes but is not limited to Intrusion Related Gold deposits (IRG), Au-Cu porphyry and their associated deposits.

The Mt Morgan Project area was highlighted in the GFA internal metallogenic study, which identified it as containing the right elements with the potential to be a world class porphyry camp. The presence of a number of sub-economic Cu-Mo porphyry deposits along with small scatter skarn occurrences confirms a favourable geological setting for the of discovery porphyry related deposits. It has been debated that the genesis of the Mt Morgan deposit is related to a buried intrusion (Arnold, 1989) rather than the previously interpreted VMS origins. If this theory is correct it helps shift the focus away from stratiform or volcanic relationships to intrusive bodies and magmatic hydrothermal systems.

Due to the focus of previous explorers on the VMS model and hence base-metal potential of the area, it is anticipated that the shift in genetic ore-model along with utilisation of modern analytical techniques will aid in discovering previously undetected porphyry and IRG systems.

2 Geological Description

2.1 Regional Setting

The Mount Morgan Project is situated in the north-west trending Calliope Volcanic Arc within the Tasman Orogenic zone. The Calliope Volcanic Arc is comprised of the Capella Creek, Mt Holly and Barmundoo Formations, which are predominantly composed of shallow marine limestone and volcaniclastics with minor volcanic units (Morand, 1993). In the Mt Morgan Mine corridor, the Late Silurian to Middle Devonian andesitic to dacitic volcano-sedimentary package of the Mt Hoopbound Formation is intruded by the Late Devonian Mt Morgan tonalite (Arnold, 1989), Late Permain quartz-diorite to granite bodies and Middle Triassic layered gabbros. West of the Mt Hoopbound formation is the Balaclava formation, which is comprised of Late Devonian to Early Carboniferous rhyolitic volcano-sedimentary package and it is intruded by the Middle to Late Permain Kyle Mohr Igneous Complex.

To the south of Balaclava Formation is the Late Carboniferous to Early Permian Youlambie polymictic volcanic conglomerate, which contains clasts of both rhyolite and granite. This conglomerate is intruded by the Late Permain Mount Gerard Complex, which is made up of quartz-diorite to granitic bodies. This intrusive complex has generated a hornfels contact aureole in the order of a 100m (Taube, 1989). The Early Permain Smoky Beds are interpreted to mostly cover the Mount Gerard Complex, which are primarily composed of andesitic conglomerate, sandstone, mudstone with minor andesite lava units.

The western edge of the Mt Morgan Project area is bounded by an Early Tertiary basin containing Biloela Formation, which is comprised of mudstone, siltstone, sandstone, limestone, oil shale and coal measures. Quaternary alluvium and colluvium deposits unconformably overlie all of the aforementioned stratigraphic units and are associated with the recent drainage.

2.2 Local Setting

The Tomlin (EPM18502) tenement is situated on the eastern margin of the Youlambie Conglomerate, Figure 2. The Mt Gerard complex consists of quartz-diorite to granite intrusions with the largest exposed unit observed is the Craiglands quartz-monzodiorite. However, most of the Mt Gerard Complex remains obscured by the Early Permian andesitic volcaniclastics and minor volcanics. This suggests that only a small amount of the Mt Gerard Complex was unroofed. To the west of this the Early Tertiary Biloela Formation has been recognised but it is partially obscured with Quaternary alluvium and colluvium, which is related to recent drainage.

2.3 Mineralisation

The most significant mineralisation within the Mt Morgan Project is the Mt Morgan Mine, which has produced approximately 8 Moz Au, 400kt Cu and 0.75 Moz Ag. The origin of this deposit has been in conjecture since its discovery in 1882 with various authors putting forward, VMS, Replacement and Intrusive related ore models. Other notable mineral occurrences observed in the larger area include the sub-economic Cu-Mo porphyry deposits of Moonmera and Many Peaks. Argoon Cu working and E.D. Gold mine are the only two mineral occurrences that have been historically mined within the current tenement.

Both of the Argoon and E.D. Gold workings are very small with only 8 ounces of Au won from the east-west oriented saddle reefs at E.D. Gold Mine and 10 tonnes of high grade copper material from Argoon Cu workings. This copper mineralisation was mainly related to secondary copper mineralisation associated with a north-north-west striking sub-vertical shear zone (Taube, 1989).

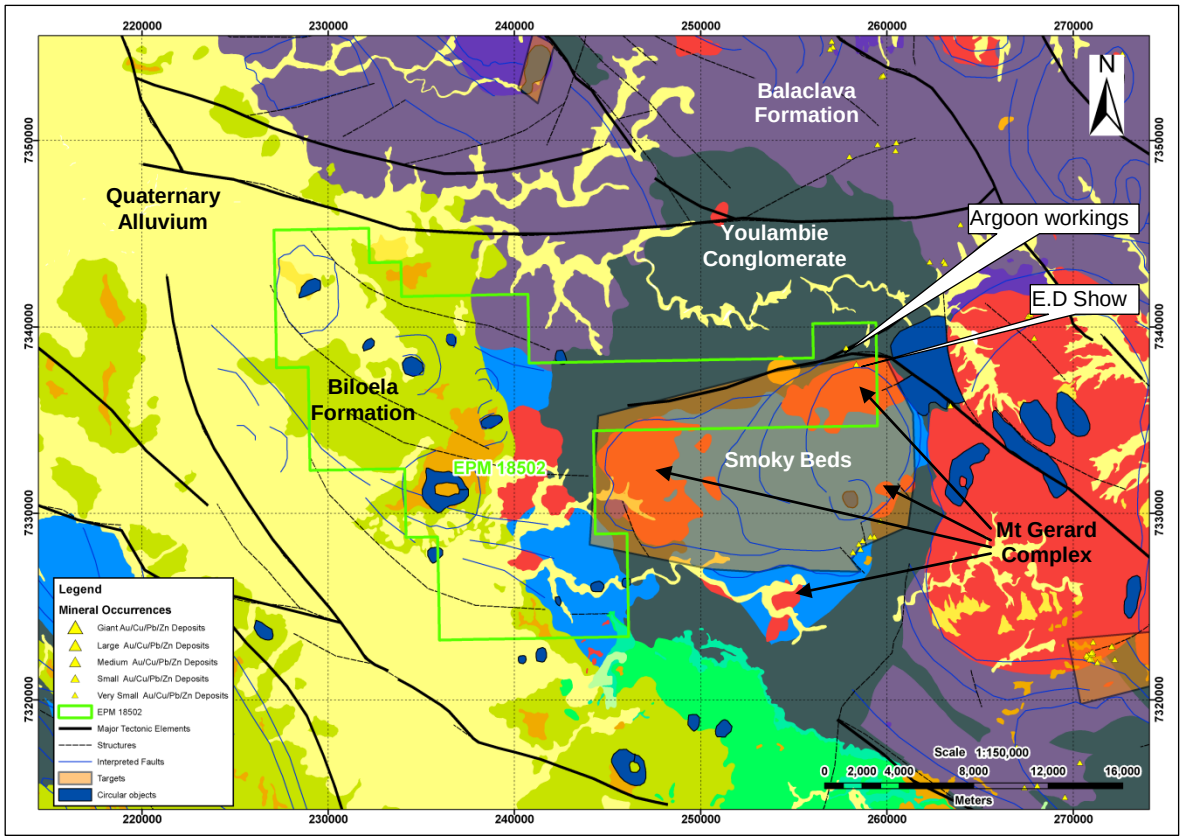

Figure 2 Geology Plan

3 Previous Exploration

3.1 Previous Exploration

The Mt Morgan Project has had a long focus of exploration since the discovery of alluvial gold in Gavial Creek, in 1865. Since then the Mt Morgan deposit was discovered in 1882, which was initially exploited for gold then for copper from 1902. Subsequent explorers focussed on the south-east trending Mt Morgan Mine Corridor in hope of discovering another deposit similar to it. This work primarily included regional mapping, magnetic surveys, electrical surveys, stream sediment sampling, follow up soil sampling and very limited drilling. As the focus was on VMS ore model the search was restricted to electrical conductive bodies or those which gave a base metal signature in geochemical sampling. This exploration failed to locate any significant economic ore bodies.

Geopeko held Authority to Prospect (ATP) 508 in various forms from 1968 until 1984, where it was completely relinquished with a total expenditure of A$5.6 million (Jones, 2007). In this period a vast amount of mapping, stream sediment sampling and aerial geophysical surveys were carried out. A total of 23 stream sediment samples were taken within the current bounds of EPM18502, which Cu, Pb and Zn were routinely analysed. None of these stream sediment samples were considered anomalous with the maximum values returned 80ppm Cu, 50ppm Pb and 170ppm Zn. A detailed 10mx50m soil sample grid was undertaken approximately 650m south-east of the historic E.D. Gold workings. A total of 224 samples were collected from this survey, which were analysed for Au, Cu, Pb, Zn and Ag. The peak values from soil samples were 40ppb Au, 85ppm Cu, 175ppm Pb, 200ppm Zn and 2ppm Ag. Only the gold values from this survey were considered significantly anomalous, however, this soil survey failed to delineate a coherent gold anomaly.

EPM583 was granted to Broken Hill Propriety Company Limited (BHP) in 1969. Exploration carried out included aerial radiometric and magnetic surveys, followed by regional stream sediment sampling, which involved 921 stream and 912 bank samples within the Monto 6 project. The Mining Lease (ML) 280 near Back Creek was chosen for a detailed soil survey, which indicated several patchy copper anomalies up to 1400ppm in amplitude. This anomalism was associated with previously recognised gossans and the lack of widespread anomalism failed to motivate further exploration. Due to the deficiency of significant mineralisation or anomalism the tenement was relinquished in 1971.

Homestake Gold Limited was granted EPM4599 for a two period from 24th of February 1987. A regional Bulk Leach Exactable Gold (BLEG) stream sediment survey was employed to screen from gold mineralisation. A total of 88 samples were taken during the survey with 20 samples falling inside the current area on EPM18502. All of the anomalous areas from the BLEG survey were outside EPM18502 and were followed up by 500m spaced stream sediment sampling, which were sieved to less than 80 mesh and included concurrent rock chip sampling. The tenement was relinquished in 1987 due to the lack of significant Au anomalism in the geochemical sampling.

EPM4937 was granted to Felstone Investments Pty. Ltd in 1987. They primarily carried out exploration for alluvial gold to north of the current EPM18502. A resistivity geophysical survey was undertaken in order to map out the older water courses that might contain alluvial gold. Subsequently, Felstone Investments Pty. Ltd. drilled 24 shallow percussion holes to test the resistivity lows, which produced a peak gold anomaly of 320mg/m^3. Although the result was significant, the continuity and volume of these results were deemed insufficient to continue exploration. Thus the tenement was surrendered in the same year it was granted.

In 1989 Placer Exploration Limited undertook stream sediment sampling on EPM5438 to explore for gold and Platinum Group Elements (PGEs). A total of 18 stream sediment samples were taken within the current extent of EPM18502. The initial results returned in one of the batches from Fox Laboratories indicated strong gold anomalism (6.22 to 31.2 ppm). However, the pan concentrate values were not considered significantly anomalous (0.039 to 0.099ppm Au). Two of the strongly anomalous gold sample sites from the suspect batch were re-sampled and they returned values of 0.7 & 0.5ppb Au. The initial strongly elevated gold results were attributed to contamination of the entire batch. Outside of these spurious assay results only one sample had a significant gold assay (72605: 0.528ppm Au) returned. PGE samples were also collected from the change of energy sites and were submitted to Fox Laboratories for analysis. None of the results returned were considered significant. Due to the lack of encouraging results from stream sediment sampling this tenement was relinquished in 1989.

In 1990, EPM7327 was granted to Asarco Gold Pty. Ltd. for a period of two years. They initially carried out a reconnaissance stream sediment sampling survey, in which 376 samples were sieved to less than 80 mesh and analysed for Au, As, Cu, Zn and Bi. Of these samples only 48 samples were within the current EPM18502 tenement and the peak results were 49ppb Au, 52ppm Cu, 72ppm Zn, 16ppm As and 3 ppm Bi (limit of detection was 2ppm). All but one of the stream sediment results greater than 10ppb Au that are within the current EPM18502 were in the catchment of the Argoon Copper and E.D. Gold workings. Soil and rock chip sampling were carried out follow-up the anomalous stream sediment at Gunpowder Creek and Kapai Creek prospects, however, they both occur outside the current bounds of EPM18502. This tenement was relinquished in 1990.

Probe Resources NL acquired EPM9131 from Evan Ryan in 1992, which covered the historic Argoon Copper and E.D. Gold workings. Only three rock chips samples were collected by Probe Resources NL, which returned a maximum gold result of 0.05ppm. The lack of significant gold in the rock chip sampling along with the review of the intensive exploration work carried out by Endeavour Resources Ltd. on ML374 motivated them to relinquish the tenement in 1995.

4 WORK COMPLETED

During the reporting period previous stream sediment, soil and rock geochemical samples were compiled into a dataset for the entire Mt Morgan Project area. The previous magnetic, radiometric and gravity geophysical survey data was acquired and reprocessed to help in the target generation phase. Geophysical interpretation was undertaken on this reprocessed data to identify areas for further work. This work is discussed in more detail in Dunn (2011). A two day reconnaissance field visit to E.D Gold mine and Argoon historic workings was carried out in August 2010. A more detailed review of the previous prospect scale exploration is required. However, the limited alteration and small size of the workings at both E.D. Gold mine and Argoon Copper workings, along with poor access has lead to the targets being downgraded.

4.1 Rock Chip Results From August 2011 Field Visit

The E.D. Gold mine and Argoon Copper workings are within the Don River State Forest on the Tomlin (EPM18502) tenement. The only access was via Four Wheel Drive (4WD) tracks, which consumed a significant portion of the time for the field visit. This was carried out from the 6th to 7th of August 2011 in which one rock sample was collected from the Argoon Copper workings.

4.1.1 Argoon Copper Workings

One rock grab sample was taken from the Argoon Copper workings during the August 2011 reconnaissance field trip, which the results were returned during this reporting period. The sample was described as a malachite-azurite-limonite altered gossan with box-work textures. This sample returned very significant copper (16.6%) and silver results as well as elevated Au (0.1ppm), As and Zn values, Table 2 and Appendix 1 for full results. These results were comparable to the channel sampling conducted by Asarco (Australia) Pty Ltd (Dunn, 2011 and Dunn, 2012).

TABLE 2 – MOST SIGNIFICANT ASSAY RESULTS FOR THE ROCK SAMPLE FROM ARGOON WORKINGS

Sample ID	GDA94 East (m)	GDA94 North (m)	Au (ppm)	As (ppm)	Ag (ppm)	Bi (ppm)	Cu (%)	In (ppm)	Pb (ppm)	S (%)	Te (ppm)	Zn (ppm)
MM011	257832	7338877	0.11	138	32.4	6.1	16.6	0.44	10	0.05	0.15	1290

from the GRAS study, it has been decided to withdraw from the Mt Morgan Project.

5 ENVIRONMENT, HEALTH & SAFETY

The program of activities for the permit were complied with, and there were no ground disturbing activities.

6 CONCLUSIONS AND RECOMMENDATIONS

The current literature review of the E.D Gold Mine and Argoon Copper historic workings coupled with observation made from reconnaissance August 2011 field trip suggests that there is little potential to grow these deposits to a significant size. The historic stream sediment sampling appears to suggest that there is not a significant outcropping mineralised system within the tenement. However, due to the spurious results in one batch from Placer Exploration Limited programme the actual reliable gold stream sampling is less comprehensive. In another batch from the same survey the sample 72605 returned a value of 0.528ppm Au, which appears to be dependable. This area should be investigated to validate the anomalism and to locate its source.

The presence of any significant gold deposits is likely to be sub-cropping or concealed due to the lack of encouragement from previous surface geochemistry. Any IRG or porphyry related mineralisation is likely to be associated with the Mt Gerard Complex. If the interpretation that the Smoky Beds cover part of the Mt Gerard Complex rather than the intrusion being several discrete bodies than, it is reasonable to infer that this may be a stock intrusion to mineralised apophyses. Furthermore, the fact that the Mt Gerard complex has not been unroofed suggests that the erosion level is such that any porphyry deposits that might exist may be preserved or could even be concealed.

Underneath the Biloela Formation in the western portion of EPM18502 there may be an opportunity to discover previous undetected mineral deposits. This area has predominately been the focus for coal and oil shale exploration. Due to the thickness of the Tertiary sequence (up to 200m) the conventional surface geochemical techniques would be inadequate to search for mineral deposits. However, systematic exploration of this area would be time consuming and expensive due to the employment of grid pattern drilling through hundreds of metres of the un-mineralised cover sequence. Any exploration in this area should be focussed on mineral systems that have a geophysical response that could be selectively drilled.

Due to the inability of GFA to secure tenure for the GRAS targets surrounding the Mt Morgan deposit and the lack of encouragement from the August 2011 reconnaissance field trip, it has decided to withdraw from the Mt Morgan Project. Aforementioned areas of prospectivity remain within the tenement, however, due to inaccessibility of these targets or thickness of post mineral cover they have been downgraded.

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