AMALGAMATED ANNUAL REPORT FOR MLS 150 & 151 WHITE RANGE GOLD MINE NORTHERN TERRITORY FOR THE YEAR ENDED 20th March 2019

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Tenement :	MLS 150 & 151
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Map Sheets :	Alice Springs 1:250,000 (SF5314) Riddoch 1:100,000 (5851)

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FIGURES

ATTACHMENTS

1.0 INTRODUCTION

This Annual Report documents activities undertaken for the Year 2018 / 19 on MLS 150 and MLS 151.
MLS 150 is the White Range Gold Mine.
MLS 151 is a bore field and pipeline easement to service a water supply for MLS 150 and the Accommodation Site.

2.0 LOCATION and ACCESS

These Tenements are located just east of Arltunga in the Eastern MacDonnell Ranges, approximately 97km east north east of Alice Springs in the Northern Territory and covers portions of the Mt Riddoch (SF58-51), 1:100,000 map sheet (Fig. 2.1). The tenement lies within the Ambalindum Perpetual Pastoral Lease on the Tropic of Capricorn.

Access is via the all weather Ross Highway for approximately 80km to the Arltunga Tourist Drive turnoff. Arltunga is a further 33km on a well formed unsealed road to the Ruby Gap Road turnoff. Approximately 10km down the Ruby Gap Road there is a turnoff to the White Range Gold Mine which is approximately a further 10km.

3.0 TENURES

Table 1: MLS 150 & 151 Summary

MLS	Area: Hectares	Grant Date	Expiry Date
150	558	21st March 1989	20th March 2034
151	20	17th June 1996	16th June 2021

4.0 GEOLOGY

In Report CR87/253 from Rocks Prospecting on behalf of, J.R.Bruce, J.H.Mules and Endras Pty Ltd, S & B Carthew reported…

"*The White Range Goldfield is located within the Arltunga Nappe Compex which is a group of basement-cored nappes formed during the Early Carboniferous Alice Springs Orogeny. This involved overthrusting and sliding together with subordinate recumbent folding of the basal Adelaidean sediments. These nappes lie within a deformed zone some 80kms from east to west along the northern margin of the Amadeus Basin (Shaw et al 1971) and straddles an intracrustal suture as defined by regional gravity surveys (Anfiloff and Shaw 1973. The basement rocks are part of the Arunta Block which extends approximately 1,000 km east – west and 400 km north – south. It consists of a cratonised complex of igneous, sedimentary and metamorphic rocks of Archean to Lower Proterozoic age, that have been intruded by granites early in the Carpentarian. The rocks have been divided into three divisions on the basis of gross lithological differences and are tentatively regarded as chronological or stratigraphic correlatives (Stewart and Warren 1977), (Stewart et al 1984). They were deposited in three major, east – west trending, fault bounded tectonic zones (northern, central and southern).*

Division 1 consists of mafic and felsic granulites interpreted as chemical equivalents of a volcanic sequence that was deposited in a developing east-west graben structure on ensialic crust. In the Harts and Strangeways Ranges, this granulite sequence is succeeded unconcormably by rocks of amphibolite facies as part of the Central Tectonic Zone.

Division 2 consists of an argillaceous sequence in part sandy, now metamorphosed to greenschist facies that pass laterally into amphibolite facies equivalents of the Harts Range Group (Joklick 1955) and to granulite facies equivalents of Reynolds Range. This division was deposited with waning volcanic activity in troughs flanking the graben.

Division 3, which unconformably overlies Division 2, consists of more mature quartz rich sediments with minor volcanics and completes the cycle of sedimentation.

The metamorphic grade varies between low greenschist and granulite facies. Isotope dating indicates four widespread episodes of regional metamorphisim resulting from tectonism and/or granitic emplacement. The first, of granulite grade, is the Strangeways Metamorphic Event, which occurred about 1,800m yers ago. The second and third, (Chewings Phase) generally of amphibolite grade, accompanied the granite intrusion of 1,500 to 1,600m years ago (Hurley et al 1964, Armstrong and Stewart 1975, Offe and Shaw 1983). The fourth, the Ormiston Event of 1,000 to 1,100m years ago, produced migmatisation at a number of centres in the central part of the southern zone, and was closely followed by intrusion of syntectonic granites, dolerite dykes and gabbroic bodies.
Following uplift and erosion, the Arunta Block forms basement to several intracratonic shallow-marine sedimentary basins of Adelaidean to Paleozoic age. Epicontinental sands of the Heavytree Quartzite and equivalents were deposited unconformably over basement, and sedimentation continued with minor disconformity into the Upper Paleozoic, when the Alice Springs Orogeny (400m years ago) deformed both the basement and cover rocks. Widespread thrust faulting, isoclinal folding nappe complexes were produced around the northern margins of the basins, accompanied by widespread metamorphism of the basement rocks. Carboniferous continental molasses material was then deposited together with the extensive peneplanation and localized ferricrete and silcrete formation. The tertiary peneplain surface has since been uplifted and active erosion has resumed.

LOCAL GEOLOGICAL SETTING

The White Range Goldfield is found in quartzite on the eastern flank of White Range where basement of the Arunta Block over-rides the Heavytree Quartzite. Here the thrust sheet dips northerly at about 20°, so the gold was deposited in an upthrust zone of a nappe that had moved southwards. The intersections of prominent landsat features converge in this area to influence the thrust-nappe development and later the deposition on mineralization. Thrust nappe development is interpreted by Stewart and Warren (1977), and Shaw et al (1979) to have overturned the lower limb of the uppermost thrust sheet of the White Range napps. Their evidence is inverted ripple marks and cross-bedding in the basal conglomerate member underlying the basement. The inference is that the Bitter Springs Formation would lie beneath the White Range antiform."

Further detail of the geology of Arltunga and White Range can be reviewed in reports listed at the end of this report,

4.1 GEOPHISYCS

In August 1969, Consulting Geophysicist Roger W. Gedde, MSc, SEG, of Seigel Associates Australasia Pty Ltd, was engaged by Central Pacific Mnerals N.L. to undertake an Induced Polarization (IP) and Magnetometer Survey on White Range. This entire report was lodged with the Department as a part of Report CR 69/80. A map indicating the locations of this survey is attached as Figure 3.
The report concluded and recommended that :
" Minor IP anomalies are observed associated with reef and fracture zones. The anomalies are weak and represent only a very small amount of sulphide, probably less than one volume percentage. Drilling to test these minor anomalies is not considered warranted on the basis of the present data alone.
One anomaly of some significance is observed within the schists but its possible relationship to gold bearing quartz – pyrite reefs is not known. However, as the quartzites dip very gently, this anomaly may present a quartz – pyrite reef within quartzite dipping under the outcropping schists. This possibility should be checked out.
The magnetic traverse run gave only a total of 80 gammas variation over 4,200 ft. It is therefore concluded that no magnetite or magnetic pyrrhotite is associated with either the gold bearing reefs on the quartzite.

In 1977 there was a Detailed Airborne Magnetic & Radiometric Survey conducted over Arltunga by R. J. Taylor, however, we do not have a copy of this report.

In 1988 a Geophysical Survey was undertaken at White Range by T. V. Harvey & Associates, however, we have not yet been able to source a copy.

In 2008 a Skytem Electro-magnetic, (EM), survey was undertaken over White Range MLS 150 by Geoforce. As a result of not being able to locate any interpretation of the survey, we forwarded the data to Mr David McInnes of Montana GIS to provide us an interpretation. A copy of this report is attached.

5.0 ORE RESERVES AND RESOURCES

At the commencement of mining by White Range Gold NL in 1989, the probable ore reserves were stated as :

850,000 tonnes @ 4.7 g Au/t *(M Rogers & Associates December 1989*)

Mining from 1989 to1991 was approximately 530,000 tonnes.
In November 1991, the remaining reserves were quoted as :-

Proved Ore Reserves :	*160,000 tonnes*
Measured Resource :	*180,000 tonnes*
Total Reserves and Resource	***340,000 tonnes***

Ore reserves and resources are based on drill intercepts with an average spacing of 7.5m on sections at 10m intervals. Approximately 65% of total drilling was open hole percussion and 35% reverse circulation percussion. Samples were split at one metre intervals and open hole percussion samples were assayed for gold by acid digest on 40g charges with Atomic Absorption Spectrometry (AAS) determination. Reverse circulation samples were assayed by fire assay on 50g charges and economic grades are checked by acid digest on 35g charges with AAS determination. At various stages assays are repeated by splitting primary drill samples. Open hole drill collars were surveyed and reverse circulation drill holes were surveyed at the collar and down the hole. Geology and assays were plotted on cross sections, ore lenses were rationalized and interpreted by plotting level plans using customized Surpac mining software. Criteria for the limits of ore lenses were 2 g Au/t cutoff over minimum 2m horizontal width and 10m strike length. Ore volumes were computed from lens shapes on bench plans at 5m vertical intervals. Tonnage conversion was based on an average specific gravity of 2.5. Grade estimate of ore lenses on bench plans was based on the arithmetic mean of drill intercepts using a top cut of 15 g Au/t. Global pit grades are tonnage weighted on a bench by bench basis.

In 1987, S & B Carthew of Rocks Prospecting & Associates estimated Possible Ore Resources as follows :

Luces	1.4m cubic meters
Excelsior	0.54m cubic meters
Extended	0.27m cubic meters
North	0.27m cubic meters

In 1985, J. Stephenson of Placer Prospecting Pty Ltd offered the following estimations :

Excelsior	1.1m cubic meters
Extended	0.57m cubic meters
East Block	0.57m cubic meters

6 HISTORIC MINING.

Mining commenced in the Arltunga region around 1886 after the mistaken perception that Rubies had been discovered at Ruby Gap approximately 35km away causing a “Ruby Rush” of hopeful miners. When it was discovered that the Rubies were actually Garnet, attention was diverted to Quartz reefs around Arltunga and in particular White Range.
Mining occurred in the following areas of MLS 150 :

AMALGAMATED
BILLYCAN
BOULDER
CENTRAL
EXCELSIOR
EXCELSIOR EXTENDED
HOLLY OAK
LUCES
NORTH BLOCK
OVERSIGHT
SOUTH BLOCK
WEST BLOCK

Mining at White Range, between 1886 and 1970 was by shaft mining, predominantly, on specific quartz veins.
Modern mining from 1989 to 1991 by White Range Gold NL was by open pit method undertaken on the side of a steeply sloping quartzite range some 200 metres in vertical height. Some 530,000 tonnes of ore was extracted from 5 open cut pits in the regions of :

EXCELSIOR
EXTENDED
LUCES
NORTH BLOCK
WEST BLOCK

7.0 PREVIOUS EXPLORATION (1985 to 1989)

Whilst most of the drilling undertaken from 1987 to 1989 concentrated on "Resource" drilling, exploration drilling was undertaken in the following regions which have not as yet been mined.

REGION	HOLES	METRES
Black Devil	15	648
Boulder	1	34
Central	11	404
Eastern Schist region	8	466
Excelsior South	8	343
Holly Oak	33	1095
North Block East	19	702
Oversight	13	468
South Block	30	1093
West of West Block	20	598

8.0 PROPOSED EXPLORATION

To date, the boundaries of mineralization of the White Range deposit have not been established. The exploration potential of the White Range Mineral Lease has been reviewed by Independent consultants :

J Gilfillan Associates Pty Ltd (1991)
Dr Chris Giles (1991)
Dr David Kirschner & Dr Christian Teyssier (1991)

J Gilfillan's February 1991 assessment indicates " *a high likelihood of success in defining a resource in the order of a further 400,000 tonnes. The potential ore would be of similar grade and at a similar waste to ore stripping ratio to that previously mined. An additional 100,000 to 200,000 tonnes of resource potential beneath the barren metatonalite cover is also indicated, albeit at a slightly higher waste to ore stripping ratio.*
Most of the potential 400,000 tonnes of additional resource is located within a one kilometer radius of the ROM Pad and is mineable by open pit. The main target areas are mapped but undrilled quartz veins in gullies between existing pits and in an area immediately west of the present open pits ".

With the aim of defining further ore resources at White Range, Chris Giles was commissioned in August 1991 to assess and to plan a drilling program. Giles' report proposes a drilling program with " *good potential for the discovery of*

200,000 tonnes of additional ore mainly from one area and at currently mined grades. Giles report was prepared following two site visits, inspection of targets in the field and a review of geological interpretations.
The main target areas are exposed quartz veins mineable by open pit methods and located within one kilometer of the ROM Pad ".

Dr David Kirschner was a PhD student of Dr Christian Teyssier and later became Professor at St Louis University. In February 1991, Dr Kirschner provided a very detailed report, which forms part of Annual Report CR1993/027, titled "Deformation History of the White Range Duplex, Central Australia, with Implications for Fold Reorientation", with attached appendix 2 "Structural Geology Report". David Kirschner also confirmed the likelihood of defining further resources in the region immediately east of existing workings east of the Quartzite Metatonalite contact

Dr Christian Teyssier is a professor in the Department of Geology and Geophysics at the University of Minnesota and has undertaken several published geological studies and papers on Central Australia. We had Dr Teyssier visit the site in July 2014 together with Dr Donna Whitney, who is a metamorphic petrologist also at the University of Minnesota, to consult further in respect of our interest in further exploration for this site. They have introduced us to Tectonicist Professor Dr Patrice Rey from Sydney University who visited with us in August 2015 to discuss bringing some of his students to site to assist with new site mapping.

9.0 Activities 2018 / 2019

During the past twelve months the site has been on care and maintenance.

Waste Rock Sampling.
The old 'Heap Leach Waste Rock Stockpiles' were drilled and costeaned in order to obtain sample material for laboratory assay to establish that they do not present any contamination risk. This would allow us to continue using this material for local repairs and maintenance both on site and off site and for sale. This work has been undertaken and a report is currently under preparation by Low Ecological Services Pty Ltd for the Departments review.

Metalurgical Sampling.
A sample of 141.7kg of material from waste rock stockpile 'West Block D' was dispatched to Freemantle Metallurgy for testing. A copy of their report is attached.

Ongoing Weed Control.
We have continued the removal of any Athol Pine Trees in the Tailings Storage Facility. Of more recent times herbicide has been applied in case some of the regrowth may relate to partial root systems that may have remained as a result of removal. At last application we had reduced the population to 5 very small trees. Our program addressing any outbreaks of Ruby Dock (*Acetosa vesicaria*) and Kapok Bush (*Aerva javanica*) continues.

Water Sampling.
No water sampling was undertaken this year due to there being no rainfall.

10.0 Proposed Activities 2019 / 2020

Continued weed control will be maintained along with adequate erosion control as advised by Low Ecological Services Pty Ltd along with the immediate removal of any class A & B Declared Weeds.

Any rocks containing sulphides or which seem to be releasing acid will be retrieved and placed in temporary safe storage in the Tailings Storage Facility.

A copy of the report currently under preparation by Low Ecological Services Pty Ltd, as a result of the Waste Rock Stockpile Sampling to establish it's non-contaminate status, will be provided to the Department as soon as it is available.

We understand the previous owners of this site, Intermin Resources Ltd, are planning to have the ALS material removed from site and taken to the Alice Springs Council refuse centre during this coming year.

An MMP application is currently under preparation for the installation of a small pilot plant.

11.0 Geological Reports of Arltunga & White Range

Report on a Journey from Adelaide to Hale River.	Brown H.Y.L.	1889
Geological Examination of Country in the Neighbourhood of Alice Springs.	Brown H.Y.L.	1890
Report on the White Range Properties.	Davidson A.A.	1890
Arltunga Goldfield & Harts Range Mica Field.	Brown H.Y.L.	1896
Record of Mining in the Northern Territory.	Playford, & Copley E.	1900
Reports of Arltunga Government Battery.	Corbin H.B.	1902
The Gold Discoveries near Winnecke's Depot & Mines on the Arltunga Goldfields.	Brown H.Y.L.	1903
Report on the Arltunga & Winnecke's Goldfields.	Matthews W.H.	1905
Arltunga Battery & Cyanide Works Records.	S.A. Dept. Mines	1913
Report on a Visit to the Excelsior Lease White Range.	Robinson A.D. TheBon C.R.	1932
The Geology of the Eastern MacDonnell Ranges	Madigan C.T.	1932
Report No: 20 Eastern Portion Arltunga Area.	Hossfield P.S.	1935/6
Report No: 28 The White Range Gold-Field.	Hossfield P.S.	1937
Report No: 39 The Glankroil Mine, Winnecke Gold-field, Eastern MacDonnell Ranges District. Aerial Geological & Geophysical Survey.	Hossfield P.S.	1937
Bulletin 26, The Geology & Mica-Fields of the Harts Range.	Joklik G.F.	1955
Report on the Examination of the White Range Gold Field.	Blockley	1957
A Report on the White Range Gold Prospect	Shepherd J. & Grenning P.J.	1962
Preliminary Examination of McIntyre's Adit & Nearby Workings Excelsior Lease, White Range.	Woolley D.R. & Rochow K.A.	1963
The Geology of the Amadeus Basin,	Wells A.T Ranford L.C.	

Central Australia	Cook P.J. Forman D.J. 1967
Geology of the Northeastern Part of the Amadeus Basin.	Wells A.T. Ranford L.C. Stewart A.J. Cook P.F. Shaw R.D. 1967
Regional Geology & Structure of the North-eastern Margin of the Amadeus Basin, NT.	Forman D.J. Milligan E.N. & McCarthy W.R. 1967
Progress Report on the Arltunga Nappe.	Stewart A.J. 1969
Final Report on A.P.1724.	Ransom D.M. 1970
Progress Reports on detailed studies in the Arltunga Nappe Complex.	Shaw R.D. Stewart A.J. Yar Khan M. Funk J.L. 1971
Potassium-Argon Dates from he Arltunga Nappe.	Stewart A.J. 1971
The Arltunga Nappe Complex MacDonnell Ranges N.T.	Forman D.J. 1971
Annual Report EL 49	Centamin Ltd. 1971
The Structure & Microfabric of a Part of the Arltunga Nappe Complex, Central Aust.	Yar Khan M. 1972
Deformation of the Crust & Mantle in Central Australia.	Forman D.J. & Shaw R.D. 1973
The Gravity Effects of three large uplifted granulite Blocks in Separate Australian Sheld Areas.	Antiloff W. & Shaw R.D. 1973
Summary of Information on Mineral Deposits of the Arunta Block.	Stewart A.J. Shaw R.D. Warren R.G. 1974
Rubidium-Strontium dates & Extraneous Argon In the Arltunga Nappe Complex.	Armstrong R.L. & Stewart A.J. 1975
Precambrian Structures & Metamorphic of Central Australia & Tennant Creek.	Stewart A.J. Warren R.G. Langworthy A.P. Offe L.A. Glikson A.Y. Wells A.T. LeMessurier P. Gardner J.E.F.1976
The Mineral Potential of Arunta Block	Stewart A.J. Warren R.G. 1977
The Age of the Stuart Dyke Swarm & it's Bearing on The Onset of Late Precambrian Sedimentations in Central Aust.	Black L.P. Shaw R.D. & Offe L.A. 1980
Geological Evolution of the Arltunga Nappe	Shaw R.D. Stewart A.J. Black L.P. 1981
Geology of the Arltunga - Harts Range Region.	Shaw R.D. Stewart A.J. Rickard M.J. 1982

Study of a Polymetamorphic Complex in the Arunta Complex, Central Aust.	Allen A.R. & Stubbs D. 1982
Detailed Description of the Geology of the Arltunga Historic Reserve & a Review of the Gold Mining Potential of the White Range Gold Field NTGS 1983 / 16	Mackie A.W. 1983
Metamorphic & Tectonic Evolution of Granulites, Aruntu Block, Central Aust.	Warren R.G. 1983
Geo-chronology of Proterozoic Events in the Arunta Inlier, Central Australia.	Black L.P. Shaw R.D. & Stewart A.J. 1983
The Arunta Inlier.	Shaw R.D. Stewart A.J. & Black L.P. 1984
Ages of the Arunta, Tennant Creek & Georgetown Inliers of Northern Aust.	Black L.P. & McCulloch M.T. 1984
A Crustal Thrust System in an Intracratonic Tectonic Environment.	Teyssier C. 1985
High Strain Zones in the Continental Crust: the Central Australian example.	Teyssier C. 1985
White Range Property Examination Report.	Stephenson J. 1985
Structural Evolution of the Harts Range Area & It's Implication for the Development of the Arunta Block, Central Aust.	Ding P. & James P.R. 1985
Explanatory Notes Illogwa Creek 1:250,000 Geological Series 2nd Edition SF 53 / 15.	Shaw R.D. & Freeman M.J. 1985
Geology & Fluid Inclusion Decrepitation Studies at the Arltunga Goldfield N.T.	Burlinson K.G. & Mackie A.W. 1985
Arltunga Geology & History.	Mackie A.W. 1986
The Geology of White Range Gold Mineralization.	Carthew S. & B. 1987
Explanatory Notes Huckitta 1:250,000 Geology Series, SF 53/11.	Freeman M. 1987
Annual Report Exploration License 4799	Rogers M.C. 1987
Crustal Scale Ductile Fault Systems in the Arunta Inlier, Central Australia.	Collins W.J. & Teyssier C. 1987
The Iwupataka Complex: A Key Area of the Proterozoic & Paleozoic Thrust System in the	Amri C. Hobbs B.E. &

South Arunta Block & it's Kinematic Significance.	Ralser S. 1987
Structural Control on the Gold Mineralisation Arltunga, N.T.	Wilson C.J.L. 1987
Annual Report Exploration of EL 4799.	Ogierman J. & Rogers M.C. 1988
Structural & Lithological Controls on the Gold Mineralisations at Arltunga, N.T.	Dirks P.H. Wilson C.J.L. 1988
White Range Gold Preliminary Environmental Report.	McIntosh A.H. 1988
Annual Report EL4799.	Rogers M.C. 1989
Relationships Between Deformation & Basin Evolution In the Intracratonic Amadeus Basin, Central Aust.	Korsch R.J. & Lindsay J.F. 1989
Tectonic Evolution of the Arltunga Nappe Complex.	Dunlap W.J. Teyssier C. & McDougall I. 1990
Annual Report 21/3/89 to 20/3/90.	Wakelin-King G.A. 1991
Geological Report on Gold-Bearing Quartz Veins Of White Range.	Kirschner D.L. 1991
Deformation History of the White Range Duplex,	Kirschner D.L. 1991
Analysis of Dislocation Creep Microstructures in Heavytree Quartzite Deformed in the Ruby Gap Duplex, Central Aust.	Hirth G. Dunlap W.J. & Teyssier C. 1991
Structure, Kinematics & Cooling History of the Arltunga Nappe Complex, Central Aust. Central Aust. with Implications for Fold Reorientation.	Dunlap W.J. 1992
Vein Growth Mechanisms & Fluid Sources Revealed by Oxygen Isotope Laser Microprobe.	Kirschner D.L. 1993 Teyssier C. & Sharp Z.D.
Orthorhombically Arranged Vein Arrays	Kirschner D.L. Teyssier C. 1993
Effect of Deformation on Oxygen Isotope Exchange In the Heavytree Quartzite, Ruby Gap Duplex.	Kirschner D.L. Teyssier C. Gregory R.T. & Sharp Z.D. 1995
Thermal & Structural Evolution of Intracratonic Arltunga Nappe Complex, Central Aust.	Dunlap W.J. Teyssier C. McDougall I. & Baldwin S. 1995

11.0 REFERENCES

Geological Report on Gold-Bearing Quartz Veins of White Range (Central Australia) (Feb 1991) D. L. Kirschner

Deformation History of the White Range Duplex, Central Australia, with Implications for Fold Reorientation. (Feb 1991).
D. L. Kirschner & Dr C Teyssier

Technical Audit of W.R.G. Mine Ore Reserves As At 30th June 1990 (Aug 1990) M Rogers & Associates

The Geology of White Range Gold Mineralization (1987) (CR87/253) S. & B. Carthew, Rocks Prospecting Pty Ltd

Property Examination Report (July 1985) J Stephenson, Placer Prospecting Pty Ltd

Exploration Report (Aug 1991) C. Giles

Information Brochure (Nov 1991) White Range Gold Mine Ltd
Ron James
J Gilfillan & Associates

Report on Induced Polarization & Magnetometer Surveys, Rankins Prospect & White Range (1969) Seigel Associates Australasia P/L
Gedde R.W.