

ML30414

Replacement Title

for

MCS's 245; 246; 247; 248; 249

**EASTERN HARTS RANGE REGION, N.T., STRADDLING
NORTHEAST EDGE - ALICE SPRINGS SF 53-14
NORTHWEST EDGE - ILLOGWA CREEK SF 53-15**

**1st ANNUAL REPORT
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REPORT COMPILED BY:

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SUMMARY

On the 20th September 2004 MCS's 245 – 249 were granted to Chambigne Resources Pty Ltd, Corporate Developments Pty Ltd and Mr. John Bengier, a joint venture of the parties on EL7914. Chambigne Resources Pty Ltd later bought out the interests of Corporate Developments and Bengier. Inminerals Pty Ltd subsequently bought out the interest of Chambigne Resources Pty Ltd in these Mineral Claims and then owned a 100% interest.

In July 2014 the Department of Mines notified Inminerals the five mineral claim titles MCS's 245 – 249 had been replaced with a single mineral lease title ML30414. The accompanying title map was incorrect and this was brought to the department's attention and the correct coordinates were subsequently found and re-mapped.

The original exploration license for this title was EL7914 and is dominated by the Irindina Gneiss and its various compositionally heterogeneous members, subunits and enclaves. The gneiss proper, and the Riddock Amphibolite Member, are both garnetiferous, and comprised the source of garnets in the EL and mineral claims/lease. Garnets from the Irindina Gneiss are principally almadine-pyrope solid solutions, with minor grossular and spessartine components.

These garnets are harder than almandine-rich garnets from other localities in Australia and overseas, and occur in relatively large detrital grains, in economic concentrations in various alluvial and other detrital deposits. The mineral lease area is quite viable as part of the garnet sand operation planned by Inminerals Pty Ltd in the Harts Range area.

INTRODUCTION

LOCATION AND ACCESS

The mineral lease is approximately 240km northeast of Alice Springs, on the eastern edge of the Harts Range area, to the south of the Plenty Highway. The then EL comprised 70 blocks and encompassed 225km²; the mineral lease comprises a total of 139.62ha.

Access to the north is via the Plenty Highway; travel 29km east past the Harts Range Police Station, turn south on crossing Entire Creek and pass through a gate; head south past Valley Bore towards Inkamulla Bore, but turn west onto the track to Spriggs Creek Bore; turn south and head towards New Lizzie Bore; this track runs parallel to, and crosses the feeder creeks to Lizzie Creek.

Access to the south is via the Arltunga Tourist Road [The Gardens Road]; follow this road to Ambalindum Station; pass Ambalindum and then head east, cross the Hale River, and head towards the Plenty Highway signpost [but not towards Claraville Station]; at the signpost, head ENE through a gate and follow the road to Brumby Bore; continue east and then take the next north fork to reach the southern parts of Lizzie Creek.



GEOLOGY

The regional geology of the then EL and area relative to the mineral lease is adequately summarised in the map commentary accompanying the Arltunga-Harts Range N.T. 1:100,000 Geological Special map [Shaw, Stewart & Rickard, 1984, Australian Government Publishing Service]; there was no equivalent in print for the Quartz Geological map at the time of the work being done to this area by owner/managers of these tenements prior to Inminerals Pty Ltd purchase, however the compilation notes appear as BMR Record 23, 1982, [Shaw *et al.*].

Apart from small localised patches of Cainozoic cover and a minor [and questionable] inlier of Bruna Gneiss near the eastern protrusion of the then EL, at 23°14'20", the exposed rocks over the entire EL comprise the Irindina Gneiss, its two named subunits - the Stanovos Gneiss Member and the Riddock Amphibolite Member - and several unnamed subunits. The Irindina Gneiss is Proterozoic, and occurs midway up the Harts Range Group, the so called Division Two sequence of Shaw *et al.*, 1984.

The Irindina Gneiss proper is a fairly schistose garnet-biotite-quartz-plagioclase gneiss which is quite heterogeneous in both grain size and the relative proportions of the dominant minerals. Additionally, there are extreme compositional enclaves on various scales within the Gneiss, giving rise on the one hand to near monomineralic assemblages of each of the dominant minerals, and to "new" pelitic assemblages which may contain sillimanite, cordierite and/or gedrite, or corundum and/or kornepine on the other. There are a number of thin [0.2 to 2m] localised bands or lenses of calc silicate rocks throughout the unit, similar to a more massive outcrop of this type outside the northeastern part of the EL, but these are essentially non-garnetiferous and volumetrically insignificant. Most of the Irindina Gneiss proper is garnetiferous, with garnets ranging in size from 0.5mm to 12mm, [but locally to 28cm *sic*]; the garnet on average comprises around 15 mode% of the rock volume.

The above mentioned calc-silicates grade compositionally into a more massive para-amphibolite unit, the Riddock Amphibolite Member, in the southern part of the EL. This contains massive amphibolite "lenses", but for the most part is compositionally banded on a variety of scales with intercalated para-amphibolites, calc-silicates and pelitic assemblages. Most of the pelitic subunits of this member are garnetiferous, as are some of the para-amphibolites.

The Irindina Gneiss and its subunits have been metamorphosed a number of times; the relict highest-grade assemblages represent the uppermost amphibolite facies, and locally, lowermost granulite facies. Compositionally, the protoliths comprised a sequence of silicic to intermediate pyroclastics, altered during diagenesis, with local deposition of chemically derived calcareous/magnesian carbonate components added to the detrital silicates; the massive amphibolites were probably basaltic. The Gneiss is the principal source for the detrital and alluvial garnet accumulations throughout both the 1:100,000 map sheets referenced in this report.

GARNET MINERALOGY

Garnet compositions from a number of random samples collected from the Irindina Gneiss proper in the northern portions of the EL were analysed on a 4-spectrometer Jeol 8800 Superprobe at the Centre for Microscopy & Microanalysis, University of Queensland, using a ZAF correction algorithm. The data were deconvoluted for the constraints of garnet stoichiometry using MINFORM, a proprietary computer program written by S.K. Dobos. On average, the garnet grains are relatively unzoned, and have the following molar composition expressed as percentages:

Almandine	56.2
Pyrope	38.8
Grossular	3.0
Spessartine	1.5
Andradite	0.5

This composition is representative of the garnet derived from the pelitic gneisses, but will probably not apply to those from the Riddock Amphibolite Member, which is currently unsampled. In detrital grains, garnet is quite fresh, and most grains contain one or more inclusions, predominantly of biotite and quartz.

The hardness of detrital garnet grains from the Stones Bore area was tested on a Leitz Miniload microhardness tester in the Department of Mining & Metallurgical Engineering, University of Queensland. Although these samples were collected some 21km from the northwestern edge of the EL, they were derived from the Irindina Gneiss, have similar compositions, and are expected to have the same hardness range as those from within the EL and mineral claims. The results indicate a range of Knoop hardnesses from 1600 to 2000 Kg/mm², making these garnet resources quite viable.

PREVIOUS TEST WORK

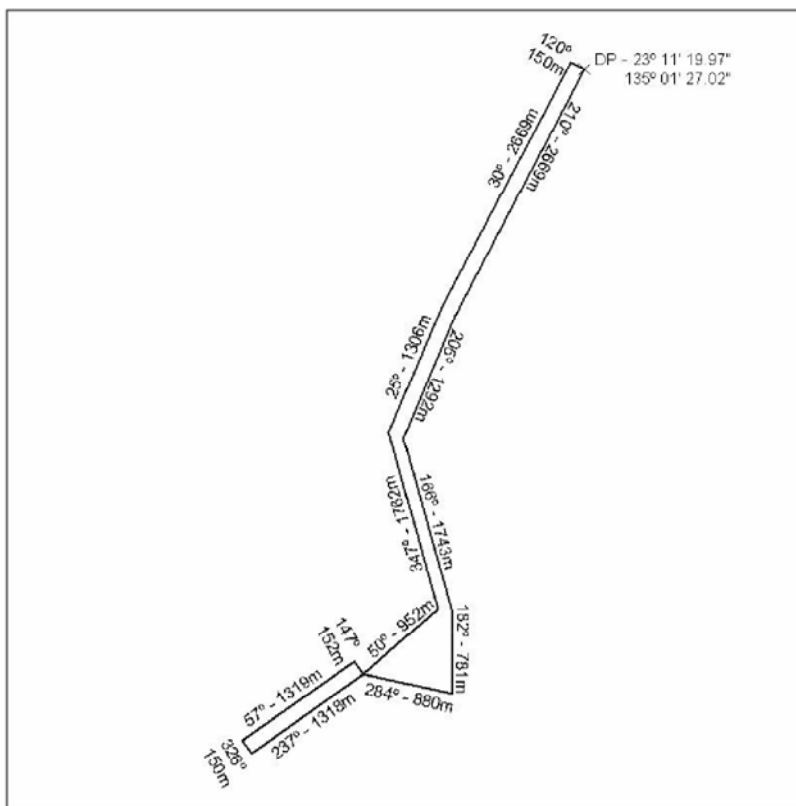
Lizzie Creek was the major alluvial target for garnet within the EL, and preliminary work was focused on 15 samples collected from the creek in the vicinity of Log Cabin Dam, New Lizzie Bore and Lizzie Bore. 5 samples of about 5 Kg each were collected from each of these sites.

The samples were logged, and at Readings Metallurgical Labs, Lismore N.S.W., a composite sample was prepared for each site from the blending of subsamples from each of the five samples collected at the three areas. These were subjected to bromoform sink/float separation, followed by grain count analysis of the dense fractions to yield a preliminary regional view of the grade and distribution of garnet resources in Lizzie Creek within the EL.

Lizzie Creek is rich in garnet; furthermore, a significant volume proportion occurs in coarser grains which are economically attractive. The success of this test work culminated in the application for the then mineral claims and now mineral lease.

Mineral Lease 30414

Second Schedule
(Plan of Area)



Bearings and distances are approximate

Datum GDA94

ML30414
139.62 Hectares

CURRENT

ML30414 joins other Inminerals Harts Range tenements and being ML's 177 – 178 – 179 – 182 – 183 – 184 – 185 – 155 – 156 – 157 – 158 – 159 – 160 – 161 – 162 and the proposed and intended inclusion of ML22624. While the previous metallurgical and engineering test work was comprehensive and a valuable data source, Inminerals has taken the view of re-evaluating the old process and recovery technology seeking new or improved techniques making the project more economic given the large distances from mine site to customer base. As such numerous discussions were held with engineering firms, ore samples were provided for fresh evaluation and test work and this reengineering work commenced. Not being overly satisfied with their performance it was decided to curtail those engineers involvement and seek alternative engineering options which meant starting the process again.

REGULATION 126 Statement

This document and its content are the copyright of the Inminerals Pty Ltd. The document has been written for submission to the Northern Territory Department of Mines and Energy as part of the tenement reporting requirements as per the Minerals Titles Act (NT).

ML30414 is a mineral lease awaiting development therefore any information included in the report originates from historical reports and is listed in the "References" section at the end of the document. If any technical consultants in the exploration phase of the tenement included information from other Open File sources, it is unknown to the document writer, the 'relevant person'. Inminerals Pty Ltd authorises the department to copy and distribute the report and associated data.

REFERENCES

- EL7914 Chambigne Resources Pty Ltd 1993; 1994; 1995; 1996
- EL8004 Chambigne Resources Pty Ltd 1993; 1994; 1995; 1996
- EL8076 Chambigne Resources Pty Ltd 1994; 1995; 1996; 1997; 1998
- EL8384 Chambigne Resources Pty Ltd 1994; 1995; 1996; 1997; 1998
- EL8423 Chambigne Resources Pty Ltd 1994; 1995; 1996; 1997; 1998
- EL8829 Chambigne Garnet Pty Ltd 1993; 1994; 1995; 1996; 1997; 1998; 1999
- EL6940 Clarence River Finance Group Pty Ltd 1994; 1995; 1996

EL7788 Clarence River Finance Group Pty Ltd 1994; 1995; 1996

EL9240 Clarence River Finance Group Pty Ltd 1996; 1997; 1998; 1999; 2000; 2001
2002; 2003; 2004; 2005; 2006; 2007

EL9595 Chambigne Garnet Pty Ltd; Inminerals Pty Ltd 2003; 2004; 2005

MLS155-162 Clarence River Finance Group Pty Ltd; Chambigne Garnet Pty Ltd;
Inminerals Pty Ltd 1995 through 2014 inclusive

MCS245-249 Chambigne Resources Pty Ltd;
Inminerals Pty Ltd 2004 through 2014 inclusive

MLS177; 178; 179; 182; 183; 184; 185
Chambigne Garnet Pty Ltd; Inminerals Pty Ltd 2012; 2013; 2014; 2015

ML30414 Inminerals Pty Ltd 2014; 2015