E L 8829

SPRIGGS & ENTIRE CREEKS
HARTS RANGE REGION  N T

NORTHWEST CORNER - ILOGWA CREEK (SF 53-15) 1:250,000
SOUTHWEST CORNER - HUCKITTA (SF 53-11) 1:250,000

ANNUAL REPORT
TO N.T. D.M.E.
FOR PERIOD TO  27/3/1998

LICENCE HOLDER:
CHAMBIGNE GARNET PTY LTD

REPORT COMPILLED BY:
CHAMBIGNE GARNET PTY LTD

28-3-98
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1 SUMMARY

The area covered by EL8829 lies on the northeastern flank of the Harts Ranges, along the northward-flowing lower reaches of Sprigg Creek, to where it is joined by Haddock Creek, and thereafter, along Entire Creek to near its confluence with the Plenty River (abutting EL8076, also held by Chambigne Garnet). Exploration is focussed principally on detrital garnet and other industrial minerals in the sands of the creekbed.

As previously established, garnet grades in lower Spriggs and Upper Entire Creeks within the Entia Dome ranged from 10.87 to 19.22 wt %, with an average grade of 15.6%. The measured garnet resource for the approximately 14km detailed sampling length comprises 465,994 tons of almandine-rich garnet, in a creekbed system of 3,006,344 tons of sand. This is a small but worthwhile resource, now shown to be economically viable. Northern Entire Creek, outside the Entia Dome, while probably possessing lower overall garnet grades (at least from the limited sampling to date) is still quite prospective, since the creek widths on the floodplain are considerably larger, with much higher inferred resource tonnages.

Mineralogical work has demonstrated that there are two garnet populations in the heavy mineral fraction. The dominant “red” garnets, comprising approximately 67% of total garnet, are blocky angular fragments of originally larger garnet grains, largely derived from the Irindina Gneiss. These grains have some inclusions, which may comprise one or more of magnetite, quartz, biotite and amphibole, and one or more sharp edges.

The remaining 33% comprise the “purple” or lilac garnets, which tend to be more rounded, resulting from the abrasion of generally smaller isolated dodecahedral grains, largely derived from the Riddock Amphibolite. These are comparatively clear, with few inclusions, but have correspondingly smoother edges, and are probably less hard (being relatively enriched in the grossular and pyrope components).
Both garnet populations are quite “clean”, having little or no clayey coatings or clayey crack infills. The overall blend of garnet should provide a product quality similar to that established for the Plenty River, which meets or exceeds all internationally accepted garnet quality criteria.

Metallurgical testing on the two bulk samples programs, and the 27°E samples collected previously, assisted in the optimisation of separation techniques. Results to date serve not only to establish the viability of garnet production in EL8829, but have modified the envisaged processing stream to allow dry extraction of other industrial minerals if present in sufficient concentrations.

Work proposed for the 98/99 reporting period will comprise the evaluation of the potential for a resource north of 23°00’00”S to where the Entire Creek joins the Plenty River and an evaluation of the Entire Creek floodplain to the north of Entia Dome.

2 INTRODUCTION AND TENURE

EL8829, the creekbeds of lower Spriggs Creek and Entire Creek, was sought by Chambigne Resources as a source of high quality garnet to complement its other resources for this mineral in the Harts Range area, as well as for a range of other industrial minerals and potential industrial minerals known to occur in relatively high concentrations in this exploration target.

EL8829, comprising 36 graticular blocks of approximately 116km2, was granted for 6 years to Chambigne Resources Pty Ltd on the 27th of March 1995, and subsequently transferred to Chambigne Garnet Pty Ltd on the 2nd of October 1996.
3 LOCATION AND ACCESS

EL8829 comprises the mid to lower reaches of Spriggs Creek, from near Spriggs Creek Bore to its confluence with Haddock Creek, and from there, all of Entire Creek to near its confluence with the Plenty River. To the west EL8829 is bounded by 135deg 02', and to the east by 135deg 16'; to the south it is bounded by 23deg 10’ and to the north 22deg 52’.

Access to the EL is via the Plenty Highway, which runs east from the Stuart Highway, roughly subparallel to the Plenty River on its southern side, to the Entire and Valley Bore road which turns off to the south. This road enters the Huckitta Dome through the gap in the low lying ranges at Mount Eaglebeak; continue south past Valley Bore, and turn east along the Spriggs Creek Bore road, which leads directly to the southern part of the EL.

The Plenty Highway actually crosses Entire Creek several kilometres east of the Entire and Valley Bore road junction; from this crossing, the northern reaches of the EL may be accessed along the creekbed. A location plan of the EL can be seen on Appendix Page 1.

4 GEOLOGY OF EL8829

The southwestern part of the EL is sited in fairly steep terrain in the rocks of the Early Proterozoic Harts Range Group, most specifically the Irindina Gneiss, and the Riddock Amphibolite, which are drained by the feeders of Spriggs and Entire Creeks. Both these rock units are heterogeneous, and may carry from zero to 18 volume % garnet, though the average for the Gneiss is closer to 10%. From a consideration of the regional geology, petrology and topography, it is evident that the sources of almost all of the garnet in the creek sands are the two rock units named previously.
There appears to be little if any contribution of grossular-andradite garnet from the rare garnetiferous calc-silicate members within the Irindina Gneiss.

Most of lower Spriggs Creek actually traverses the Entia Gneiss, which is non-garnetiferous, and is joined by Haddock Creek which also drains a smaller area of mostly Entia Gneiss. There is a little but noticeable drop in garnet grade at the confluence of Entire Creek with Inkamulla Creek, since the latter drains a large area of Entia gneiss. (Note that the Entia Gneiss is locally intruded by a suite of pegmatite's and hydrothermal veins, some of which carry minor amounts of garnet, however, this is volumetrically insignificant). Entire Creek drains the northern part of the Entia Dome, and once through the pass at Mount Eaglebeak, forms a flood plain cut by a number of channels which all drain towards the Plenty River. Over all its length, the dominant alluvium washed into the Entire is non-garnetiferous, although a small western tributary (the so called "Red River") draining Irindina Gneiss does contribute some garnet. Consequently the Entire creekbed has substantial sand volumes but of lower inferred garnet grades, whereas the Spriggs Creeks sands are volumetrically small, but of relatively high garnet grade.

The geological-lithological distribution of rocks drained by the creek system of EL8829 can be seen on the Illogwa Creek and Huckitta 1:250,000 Geological maps. For a more detailed appreciation of the relevant rock types, refer to the Quartz 1:100,000 geological map which clearly shows the distribution of the garnet source rocks. No purely geological mapping was carried out in any part of the EL in this reporting period. Written summaries of the regional geology of the area encompassed by the EL are presented in the notes to accompany the Huckitta and Illogwa Creek 1:250,000 geological maps; there is no equivalent in print for the Quartz 1:100,000 geological map, however the compilation notes appear as BMR Record 23, 1982 (Shaw et al.). The above geological summary was derived partly from this record, and more directly from ongoing fieldwork and the original petrological research of Dobos (unpublished PhD thesis, Macquarie University, 1978).
5 WORK PROGRAM TO 3/98

The garnetiferous nature of the creekbed of Spriggs and Entire Creeks and indeed areas of the Harts Range region has been recognised since the early 1970s, however recognition of the potential of garnet for industrial applications is a more recent event. In previous annual reports, a measured garnet resource of 465,994 tonnes in-situ was established (Dobos & Associates Resource Statement) in the creek system from the location of sampling site E1 through to E27, being the southern part of the EL within the Entire Dome. A number of 200 litre drums of creek sand were also collected from near sampling sites E1 and E17 and shipped to Brisbane for recovery optimisation studies.

Previous reconnaissance over the whole length of the Entire Creek contained within the EL demonstrated that the Entire was everywhere garnetiferous. Systematic sampling via excavated holes carried out in the southern portion of the EL in reporting periods previous to this one has established garnet size distributions and grades and spreadsheets were included in those reports.

To facilitate an understanding of continuing garnet concentration, of garnet grade distributions, for an understanding of surface and near surface garnet concentrations as they relate to average concentrations over sample depth and for additional metallurgical consideration, a program of 30 in-fill, surface grab samples was initiated from within the EL. These samples, numbered E1a to E30a inclusive were taken commencing north and east of Spriggs Creek Bore and following the creek within the boundaries of the EL northward. The samples were taken at the approx. locations of some of the samples collected in previous years (for comparative purposes), only this year at near surface. This particular EL has been specifically targeted by Chambigne as:-

i) Chambigne exploration has demonstrated (and others) that the Entire Creek, at depth, contains higher percentages of garnet in the coarser fraction than does the Plenty River; coarser garnet attracts higher prices.
ii) Overall, the area is ideally suited for a processing plant.

iii) It is a suitably distance from any dwellings or homesteads.

iv) The alluvial orebody, attributable to the nature of its major host (Irindina Gneiss), is thought to contain higher concentrations of the additional industrial minerals.

The samples were dispatched to the metallurgical laboratories, where they were initially screened to -850 microns. They were then concentrated using the RE-Roll technology in order to provide a magnetic concentrate (as opposed to the bromo-form sink/float magnetic/non-magnetic concentrate) to emulate proposed processing operations on site. This magnetics concentrate was subsequently screened into four additional size fractions (-850+600µ; -600+425µ; -425+180µ and -180µ), grain counted and thereafter subject to S.G. considerations to provide a wt%.

The representations of grade percentages within size distributions (concentrates) are included as Appendix page 2. A map of sample locations, name and numbers are included as Appendix page 3.

In order to better appreciate the garnet grade trends (along the river), it must be understood that the grade, at any one location, will vary across the river. This is simply a reflection of the fact that garnet has a density of around 4, whereas that of quartz, the most common mineral phase in the river, is 2.65. Because of this, the flow regime along the river will tend to concentrate garnet and other dense minerals in “channels” which meander back and forth across the river and riverbed, and which may be weakly to strongly defined (leading to relatively weak to strong local concentrations of garnet).

Because of the foregoing, the sampling methodology employed was to sample, at each site, at a random position across the river; the samples are not all collected at the centre of the river. This explains for instance, much of the seemingly erratic sample grade variation for some earlier samples. Statistically, the average garnet grade for the
samples is quite stationary; if the randomness is smoothed, there is no obvious trend of average garnet grade along the river between the sampling sites.

Another aspect of the (fairly uniform) garnet distribution is depicted in the plot of garnet contents in each ore block (of 0.5km length) along the length of the river. In the resource calculations, the amount of garnet is a function not just of average block grade, but of block volume, that is, the creek widths and sampling depths employed.

An average garnet grade is calculated for each block which tends to smooth the sample grade curve. Also the sampling depths are reasonably constant. As a result of the foregoing, tonnage of garnet in each block is principally a function of the average creek (block) width.

Earlier sampling depths were limited by excavation hole collapse; incidental data indicate that the real riverbed depth may be as much or more than twice the sampled depth, and there is reason to believe that the extra depth will also be garnetiferous.

It became evident that the resource measurements and calculations finalised during previous reporting periods demonstrated that the amount of garnet contained in the Entire creekbed, comprise a world-class garnet resource, of sufficient size to justify a large commercial operation.

It was decided that rather than embarking on further comprehensive fieldwork given that a measured resources calculation for this EL already exists, while the funding of the project was being organised, ongoing effort would be better expended on garnet product quality characterisation and metallurgy, that is, exploring new and alternative technologies for the recovery of garnet and other minerals existing in the resource as these factors will heavily influence sales and contracts, product recovery rates and project economics. However considerable time was spent by our metallurgical consultants reviewing the non-garnet fraction of the recent and all previous EL8829 samples.
5.1 GARNET CHARACTERISATION

A large number of heavy concentrates, magnetic concentrates, and garnet concentrates of various purities have been examined microscopically, to establish the physical characteristics of the garnet in EL8829, utilising the “E” samples collected from November 1995 through to the present samples, plus the bulk samples referenced above.

The vast majority of creek-bed garnet grains are free of clayey coatings, or clay-filled cracks, which would leave clay films on the worked surface in abrasive blasting applications. This is important, since a number of potential garnet deposits in small creek systems close to the garnet source rocks (which are relatively “unworked”), have unacceptably high clay coatings or adhesions, and even with wet separation, not all of this is would be removed.

In the 1997 annual report Chambigne’s then geological consultant wrote the following:-

"The garnet concentrates contain two populations of garnet - the “red” fraction, derived predominantly from the Irindina Gneiss, comprises fragments of originally larger garnet grains. These tend to yield angular, blocky grains with one or more sharp grain edges (desirable), but also contain significant inclusion minerals; if magnetite comprises a significant volume of inclusions, these grains will tend to report to the high-magnetic fraction, which is not desirable for a dry first pass magnetic separation. If the garnet inclusions comprise too much quartz, this will negatively impact total (“free”) silica content”.

No evidence of this hypothesis nor a statement relating to it was ever provided to the company, only a copy of the annual report, after a demand made by the company, and only provided many months after its writing.

The geological consultants statement implies that the grains referred to would report to garnet product and negatively impact on its purity and quality. What the consultant failed to report was that the proposed processing plant, after much metallurgical test work, is specifically designed to operate in a very narrow S.G. range;
if a garnet grain were to contain a magnetite inclusion, its S.G. would be that much higher than whole garnet grains, therefore in the process plant it is scalped out of the product stream.

if a garnet grain were to contain a silica inclusion, its S.G. would be that much lower than whole garnet grains, therefore in the process plant it is scalped out of the product stream.

All of the company’s consultants are aware of our process plants design specific criteria and as such, makes the consultants statement in the 1997 annual report inaccurate and irrelevant.

The consultant also wrote the following:-

"The second garnet population comprises the “purple” or “lilac” fraction, and from petrological research by Dobos, and from previous work in EL7914, most of this fraction appears to have been derived from the Riddock Amphibolite. These are expected to be less almandine rich, with correspondingly higher mole fractions of the pyrope and grossular components. This in turn may reduce the Knoop hardness of these grains, and this will be tested on a multitude of grains once the complementary electron microprobe analyses are completed (only analysed grains will be tested for hardness, on the same polished thin sections)".

This statement also appears to be inaccurate. What the consultant failed to report is the fact that:-

all of the company’s early hardness test work was performed on predominantly Riddock Amphibolite garnet which achieved an ave. hardness of 2050 (knoop) or 8.6 (Mohs equivalent).

the company’s first bulk sampling program produced approx. 10 tonnes of garnet product and was performed on the Riddock Amphibolite resource. The garnet was subsequently performance tested by the abrasive blasting industry who gave the garnet product an excellent report.
The consultant also wrote the following:

"The purple garnets also tend, especially in the large size fractions, to comprise a higher proportion of unbroken grains, many of which clearly exhibit remnants of the dodecahedral faces observed in the Riddock Amphibolite source rocks. These in turn have somewhat more rounded forms (less desirable), and hence much lower concentrations of sharp edges (sharp edged cannot be easily generated from unbroken near-spherical crystals). On the other hand, these purple garnets are more glassy or clear, have less cracking, and are relatively inclusion free, to the extent that they will offset to some degree the likely quartz inclusions of the red fraction.

The proportion of red to purple garnets in virtually all of the garnet fractions, (excepting the -200μ fractions, not sufficiently purified for quantitative examination), is in the approximate ratio of 7:3”.

Once again the statement relating to particle shape is inaccurate. Consultation with industry provides that semi rounded sub-angular grains are generally the most favoured in abrasive blasting applications also the reference to quartz inclusions, as I have outlined above, is irrelevant.

5.2 METALLURGICAL TESTING AND RECOVERY OPTIMISATION

The company’s ongoing metallurgical effort has resulted in continual modification of the separation plants design to:-

- make the major process plant truly modular and very mobile
- accommodate HIM concentrates delivered from satellite deposits too small to warrant standard process facilities however very suitable for tribute operations.
- allow easier exploitation of other industrial minerals present in the sands of the company’s tenements.
The separation process as it currently stands is still entirely dry. The most immediate target minerals are ilmenite, magnetic and non-magnetic rutile, and zircon, though the aluminosilicates are an emerging possibility.

The entire garnet processing stream has been independently “audited” and computer modelled. Not only has it been shown to work in absolute terms, but at a performance level consistent with planned production levels, including capacity for increased future production.

5.3 STREAM SEDIMENT GEOCHEMISTRY

Samples were collected from the central portion of the EL for stream sediment geochemistry; the analytical results were tabulated and reported in the previous report. One purpose of this effort was to see the prospectivity for recovery of minute amounts of alluvial gold or electrum, since large numbers of quartz-dominated hydrothermal veins (and an equally large number of near-eutectic micro-pegmatite’s) are present in the source rocks drained by the creek system. No substantive gold production has been recorded from this area, and the Au and Ag values only corroborate the inference that the vein systems carry no precious metals.

Similarly, though isolated scheelite occurrences have been documented in the general area (especially by the fossickers), the low W and Sn values confirm zero prospectivity for W and Sn heavy minerals. The slightly elevated Ba values only reflect the petrogenetic concentration of this element in partial-melt pegmatite’s (this would also hold true also for Li, B and Be).

Cr and Ni will occur largely in magnetite solid solutions as the chromite and trevorite end-members, as will some Mn and Zn; the occurrence of magnesia-chromite and substantial amounts of chromite are unlikely, bearing in mind that the exposed rocks in the Entia Dome are largely of reworked crustal protoliths.

Of direct consequence to the working of the creek system is the fact that concentrations of the environmentally unfriendly metals As, Cd and Sb, plus the base
metals, are very low or near crustal averages; working these creek sands will not pose a heavy-metal water quality problem.

6 SYNTHESIS

Ongoing work has proved up an economically favourable garnet resource within at least the central portion of EL8829. Mineralogical work to date has demonstrated that the garnet quality will meet or significantly exceed those of currently worked deposits in Australia (WA at Port Gregory and NSW at Broken Hill), at least in terms of shape factor, sharpness, “cleanliness” and predictably low quartz content, and will be first rate by internationally accepted criteria.

By analogy with garnet from Els 8076, 8384 and 8423, all derived from the same two principal rock units as the garnet in EL8829, Knoop hardness and water leach quality are likely to be similarly excellent.

Metallurgical studies indicate that the garnet may be extracted for profit, and that significant co-recovery of a number of other industrial minerals is feasible if in viable concentrations in the sands.

7 EXPENDITURE TO 3/98

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Total expenditure 97/98 $16,780
8 PROPOSED EXPENDITURE TO 3/99

It is programmed that Chambigne will endeavour to increase its measured resource in EL8829 in the area north of the 23°S line and maybe as far north to where the Plenty Highway crosses the Entire Creek.

The following minimum expenditure is proposed for EL8829 to the year ending 3/1999.

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Total proposed expenditure 97/98 $11,100
Dear Bob

Re: Chambigne Garnet Project

The following is a discussion of the metallurgy, process description and optimisation relating to the Chambigne Garnet Project.

1 METALLURGY

Garnet sand samples collected as a result of the company’s exploration programs across the project were initially concentrated utilising a heavy liquid (Bromoform) sink/float separation. This was the best means of providing a heavy mineral concentrate for subsequent grain counting, to generate enough data (via grain counting) to enable resource calculations sufficient to justify a long term mining operation proposal.

The first pilot plant program was a combination of dry and wet separation techniques. Whilst the “roughing” or primary separation was satisfactory, significant losses were encountered in both the coarse and fine fractions utilising wet processing techniques. Engineering studies indicated that capital and operating costs for a plant incorporating both dry and wet processing of the ore would be high, and as such, consideration should be given to an alternate flowsheet.

The subsequent decision to initiate rare earth magnetic separation technology to concentrate the garnet sand samples evolved as a result of metallurgical and mineralogical considerations and the results from the first pilot plant program. This method would provide an upgraded “primary” garnet concentrate which would report to the secondary processing component of the plant in the field. Garnet sand samples analysed by this method were satisfactory and were relatively consistent with the earlier method of sampling.

The second pilot plant program involved a rationalisation of the first pilot plant flowsheet to test a totally dry processing route which was based on the magnetic and the specific gravity properties of garnet for separation and recovery. The dry processing option has considerable capital and operating cost advantages with regard to the elimination of much ancillary
equipment and the energy cost for the drying of wet product streams. This program was quite successful and performed within expectations.

The third pilot plant program to test alternate primary processing technology was performed on samples of ore shipped to Mineral Systems Inc, Spokane, USA. While the Mineral Systems technology generally produced an acceptable concentrate, it did not reject the low specific gravity gangue as efficiently as the R-E roll technology, and performance was susceptible to variations in electrostatic charge due to the moisture content of the ore and the ambient air humidity. Mineralogical examination of test products indicated that losses of “platey” middling particles were higher with the Mineral Systems machine than the R-E rolls, primarily it was thought due to the aspect ratio of these particles and their subsequent lack of stratification under pneumatic hindered settling conditions.

The garnet concentrate from the Mineral Systems test program was screened into appropriate size fractions at Hazen Research in Golden (Colorado) and shipped to Oliver Manufacturing in Rocky Ford (USA), where further testing with respect to secondary processing was performed to confirm throughput and machine operability over a range of size increments derived from earlier testwork. These were consistent with earlier results and no changes were made to the flowsheet mass balances for the selected equipment.

The dry recovery methods included in the process flowsheet are proven technology and have been extensively tested on laboratory and full scale commercial sized machines. The very significant benefit of having tested full scale machines is that there is no scale-up risk as can be the case when extrapolating laboratory equipment performance to a full scale production environment.

The process plant design and equipment selection is a result of metallurgical testwork (conducted by Mineral Processing Consultants, Mineral Sands Consultancy, Readings Metallurgical Laboratories, Mineral Systems Inc. USA and Oliver Manufacturing Co. Inc. USA) and an engineering study conducted by Ausenco Limited.

For economic reasons relating to the higher capital and operating cost of a process flowsheet that included wet and dry beneficiation equipment, the company chose a simpler, totally dry processing route with lower capital and operating costs, with a resultant expected small reduction in garnet recovery. Metallurgical testwork indicates an estimated garnet recovery of 75% is possible, though in-plant optimisation and on-going metallurgical testwork will be initiated when the plant is in operation to maximise recovery, consistent with the required product specifications.
2 PROCESS DESCRIPTION

2.1 PRIMARY PROCESSING

Primary processing will consist of removal of ferromagnetic and nonmagnetic minerals, and screening of the concentrate in preparation for secondary processing.

**Removal Of Ferromagnetic Minerals**

Ore -2mm will be fed (via front end loader) into the plant feed hopper. Sand will be conveyed to a CC Drum Magnetic Separator which will remove the Highly Susceptible (HS) ferromagnetic fraction of the feed. The HS fraction in turn will be conveyed to the Heavy Minerals (HM) concentrate stockpile.

**Rare Earth Roll Separation**

The non magnetic fraction from the CC Drum will gravitate to a bank of 10 Rare Earth (RE) Roll Magnetic Separators which will produce a magnetic and non-magnetic fraction. The non-magnetic fraction will be conveyed to a tailings stockpile. The RE Roll Magnetic Separators have a manufactures rating up to 10 t/h depending on the application, however for the garnet processing a capacity of 5 t/h has been used. Metallurgical testwork has demonstrated that the sand fed to the magnetic separators should be sufficiently dry to be free flowing, to obtain maximum garnet recovery.

**Screening and Storage**

The magnetic concentrate from the RE Roll Magnetic Separators will be conveyed to two banks of screens which will size the magnetic fraction into 200 micron increments.

The sized fractions from the screening stage will gravitate to respective 6 tonne surge bins. The surge bin discharge feeders will be selected to provide a controlled feed rate of concentrate to the air tables.
2.2 SECONDARY PROCESSING

Air Tabling

The surge bin feeders will discharge to a bank of six primary air tables with each air table treating one of the six size fractions. The air tables pneumatically fluidise the feed on the deck and together with the shaking action of the table, perform a separation predominantly based on particle specific gravity. The primary air tables will produce four products:

- a heavy mineral (HM) fraction which will be conveyed to the HM concentrate stockpile.
- a garnet concentrate which will be conveyed directly to its respective final product bin.
- a middling fraction which will be conveyed to secondary air tables.
- a tailing which will be conveyed directly to the tailing stockpile.

These tables have a manufactures rating of up to 6 t/h, however a capacity of 2 t/h has been used for the secondary processing duty. Metallurgical testwork has demonstrated that the higher the garnet grade presented to the tables, the better the air tables perform.

Middlings from the primary air tables will be conveyed to secondary air tables where the material will be screened and re-tabled. Metallurgical testwork demonstrated that re-screening at the secondary tables removes a high proportion of the amphibole material to tailings. The re-tabling produces two fractions:

- a garnet concentrate which will be conveyed directly to its respective final product bin.
- a tailing which will be conveyed directly to the tailing stockpile.

The final product bins will discharge into an elevating conveyor feeding a product mixing bin. The product mixing bin will blend desired percentages of sized garnet to specified size distributions. The product mixing bin will be located above the weighing and bagging unit. The bagging unit (which has a manufactures rating of filling a 2 tonne bulk bag in 2 minutes) will fill the bulk bags seated on pallets, which will then be removed by fork lift to a storage area, or loaded directly into containers for dispatch.

The dump truck delivering ore from the dry river bed to the primary plant feed stockpile will on its return trip, back-load processed sand (tailings) to the river for replacement and rehabilitation.

The company’s ongoing metallurgical testwork and optimisation has resulted in changes to:

- process flowsheet
- throughput parameters
- equipment specification and selection
- plant layout
- plant size
- operating cost
- capital cost

The most recent engineering study offers a processing plant facility which is relatively mobile, can readily expand its production capability, can accommodate modifications and
additions for the beneficiation of accessory minerals, and is significantly lower in its capital cost.

The company’s proposed Alice Springs facility is ideally suited for future processing and value adding to the company’s garnet product, and other industrial minerals. Further mineralogical assessment of the garnet products is warranted as it is likely that some product streams or in fact some particular localities may provide feed stock that is more amenable to the higher value added products such as micronised garnet.

Yours faithfully,

Kelvin Fiedler
Principal Metallurgist
# CHAMBIGNE GARNET

## "E" SERIES

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