

31 July 2006

## QUARTERLY REPORT TO 30 JUNE 2006

### HIGHLIGHTS

- Due diligence reviews were successfully conducted by three major corporations at Austpac's Newcastle technology facilities during the Quarter. Transactions to progress the commercialisation of Austpac's processes are anticipated in the coming weeks.
- Preliminary testing of a new process to agglomerate high grade titanium minerals was successfully completed. This has the potential to unlock the company's large ilmenite resource at WIM 150 in the Murray Basin.
- Significant advances were made in the development of Austpac's iron oxide reduction process, which is the final step in the EARS (acid regeneration) process, which provides a valuable iron co-product to ERMS SR synthetic rutile. The direct reduction of iron ore will also be tested in equipment due for commissioning in August 2006.
- A preliminary gold exploration agreement was signed with a Chinese government entity in Guangxi province covering a number of producing gold mines in south-eastern China.
- Negotiations are well advanced with a joint venture partner to provide funding for the proposed gold exploration programme in China to explore for mineralisation below the current gold mining operations.

#### Austpac's Mineral Processes and their Applications

The most advanced of Austpac's processes is the ERMS SR process, which allows any ilmenite to be upgraded to a very high grade synthetic rutile, together with a valuable pelletised iron co-product. During the past quarter innovative work at our test facilities on Kooragang Island, Newcastle, resulted in the identification of a number of new applications for our mineral processes, so broadening the opportunities for their commercialisation. These opportunities will be further developed during the coming quarter, during which significant new opportunities are expected to be secured.

#### 1. Synthetic Rutile:- the ERMS SR Demonstration Plant

The ERMS SR ilmenite upgrading process, which produces very high grade synthetic rutile and saleable iron pellets, is ready for commercialisation, and Austpac plans to complete a feasibility study as the next step. To obtain data for the study and to satisfy project funding requirements for the construction phase, an integrated 3,000 tpa ERMS SR Demonstration Plant is under construction at Newcastle. When complete this plant will comprise an ilmenite roasting section and a leaching/EARS acid regeneration/iron metallisation section, and will enable the  $\pm 10\%$  detailed

**Austpac Resources N.L.** is an Australian listed minerals technology company and emerging synthetic rutile producer. The ERMS SR process produces high grade synthetic rutile, a preferred feedstock for titanium dioxide pigment production. The EARS process regenerates hydrochloric acid from waste chloride streams, as well as producing a valuable metal pellet co-product. Austpac also has processes for agglomerating fine high-titanium minerals, the direct reduction of iron ore, and the separation of minerals for titanium pigment feedstock.

study to be completed. The major equipment items for the roasting section have been fabricated and installed, and the remaining items, including the process control units and electrical systems, will be completed as funds become available. The leaching/EARS/metallisation section has now been fully designed and construction work will commence once the roasting section has been completed. Austpac' goal is to complete the feasibility study early in 2007 and be ready to commence construction of the first commercial plant, with a capacity of 60,000 tpa of ERMS SR synthetic rutile and 30,000 tpa of high grade iron for steelmaking, later in the year.

It should be noted that other synrutile processes produce a fine black or red iron oxides, and the iron is consequently lost as a waste mud which has an ongoing disposal liability. The ERMS SR process is unique in that it is the only synrutile process that produces a valuable iron co-product.

As advised early in July 2006, major groups have undertaken detailed technical reviews of the ERMS SR process, with the objective of assisting with the funding necessary for commercialisation. These reviews are subject to restrictive confidentiality agreements, but it is expected that agreements with one or more parties will be concluded during the coming quarter.

## **2. Iron & Steel Industries:- the EARS Acid Regeneration and Iron Metallisation Processes**

The EARS process, patented by Austpac in the early 1990's, was developed to regenerate strong hydrochloric acid from ilmenite leach liquors, and its by-product was benign iron oxide pellets. More recent testwork resulted in the invention of an exciting new process to reduce the iron oxides to iron metal pellets, and a preliminary patent application was lodged in June 2005. The iron pellets are an ideal high grade feedstock for the electric arc furnaces used in steel making and market enquiries indicate they will command a premium price to the lower grade scrap iron generally used. Subsequent work has refined this process, and a PCT (worldwide) patent application was lodged in June 2006.

This is a significant development that opens up new markets for Austpac. When completed, the Demonstration Plant will include a continuous metallisation unit producing several hundred kilograms of iron per hour. It was decided to validate our novel iron reduction process immediately by constructing a smaller continuous unit at Newcastle, and this will be completed and tested in August. This equipment will also be used to demonstrate the process to interested parties in the iron and steel industries, where there are two immediate applications:

- The use of the EARS process to regenerate hydrochloric acid from pickle liquor and to recover iron units now lost as mill scale or baghouse dust. Testwork has shown that one tonne of acid and 1.6 tonnes of iron pellets can be recovered from each tonne of spent pickle liquor and 2 tonnes of waste mill scale and/or baghouse dust. Our process has major positive environmental implications as baghouse dust is usually a hazardous waste with a high disposal cost.

This has potential for integrated steel and rolling mills with pickling lines and discussions are underway with a number of local and offshore groups in regard to this application.

- The potential for direct reduction of iron ores is a powerful new application for our process. Preliminary work has indicated Austpac's reduction process is applicable to iron ore fines, and this will be confirmed once the test rig has been completed. It is believed that this process will be competitive with other direct reduced iron processes. The metallisation section of the EARS plant that will form part of the Newcastle ERMS SR Demonstration Plant will be used for large scale, confirmatory trials.

The commercial implications for a new process that adds value to iron ore are very significant, and this aspect will be actively pursued during the coming quarter once the trials are completed.

## **GOLD EXPLORATION ACTIVITIES**

During the first quarter of 2006, Austpac undertook an initial evaluation of two mining projects within a gold district in south-east China in which there have recently been a number of significant gold discoveries. The projects are located within a geological setting that is documented by the US Geological Survey as being similar to the well-known Carlin gold district in Nevada. The 4 million ounce Jinfeng gold deposit being developed by ASX-listed Sino Gold occurs within a Carlin-type geological setting, and was discovered by testing for sulfide gold mineralisation below an existing oxide gold mine.

The two operating mines visited in February-March 2006 are exploiting shallow oxide gold ore along major gold-bearing structures. Samples taken during that visit from the top of the underlying sulfide zones were encouraging, and confirmed the grades of 4-6g/t Au reported from the sulfide zones at both mines. The mine owners are seeking both funding and technical expertise to develop the mines within the primary sulphide zone.

During the current quarter, a follow-up visit was undertaken to the district, and Austpac was accompanied by a third party which funded this second field program. This company is interested in, and well capable of, providing ongoing funding for the evaluation and development of these properties as sulphide gold mines. Two additional oxide gold mining operations were reviewed and these are expected to be incorporated in the joint venture opportunity. All mines have good potential for significant gold-bearing sulfide mineralisation at depth.

The July-September 2006 quarter will see the accomplishment of due diligence investigations on all aspects of the properties leading to the execution of a formal contract for exploration before the end of the year. The joint venture will initiate a comprehensive program of drilling and related investigations during the first half of 2007.

## **EXPLORATION LICENCE 4521 – HORSHAM JOINT VENTURE**

Australian Zircon, which is focused on zircon minerals, advised that a sample of non-magnetic concentrates produced by Roche MT from WIM 150 heavy mineral concentrate was processed to produce zircon and rutile / leucoxene products. The material was amenable to standard mineral sands separating techniques with recoveries of 76% of zircon in the non-magnetic feed and 70% of the TiO<sub>2</sub> to the rutile /leucoxene products.

Australian Zircon plans to undertake air-core drilling and the excavation of an additional bulk sample of heavy mineral concentrate for further metallurgical testwork later in the year.

Austpac will independently be progressing tests on the fine ilmenite from WIM 150. Austpac has previously reported that the ERMS SR process can produce a good synthetic rutile product, but it was too fine to be commercially acceptable, and that we have been evaluating methods of pelletizing this material without adding a deleterious binding agent.

In June 2006 we completed construction of a novel fluid bed agglomerator to agglomerate fine high titanium minerals. Initial trials, which produced ideally sized "Hi-Ti" pellets, were very encouraging. Additional tests are planned during the next quarter, but when developed this new agglomeration process will provide a solution for the fine grained titanium minerals at WIM 150 and open up commercial possibilities for co-operation with other mineral sand and titanium feedstock producers.

*NOTE: This report is based on and accurately reflects information compiled by M.J. Turbott who is a Fellow of the Australasian Institute of Mining and Metallurgy and a member of the Australian Institute of Geoscientists and is a competent person as defined in the Australian Code for Reporting of Identified Mineral Resources and Ore Reserves.*