



## QUARTERLY REPORT TO 31 DECEMBER 2008

### HIGHLIGHTS

**Austpac has commercially proven the ERMS SR process and produced the world's highest grade synrutile.** In late October 2008 Austpac produced ultra high grade synrutile in a production run at the 3,000 tpa Demonstration Plant in Newcastle. Analyses showed the synrutile contained over 97% TiO<sub>2</sub>, some of the highest grade in the world. The Company's patented continuous leach reactor, exceeded expectations by producing a higher grade product than the synrutile from bench-scale leaching. Austpac's technologies include the unique continuous synrutile process that also produces saleable iron metal pellets to enhance profitability, while other processes suffer from the cost of disposal of the iron as a chloride or oxide waste.

**Austpac's EARS acid regeneration process successfully recycled steel industry waste into fresh acid.** Using spent pickle liquor ("SPL"), a waste iron chloride rich solution obtained from a major Australian steel finishing plant, Austpac regenerated a large volume of fresh hydrochloric acid using the Company's patented EARS acid regeneration process.

**Austpac is developing a 13,000 tpa commercial EARS plant to generate profits in 2009.** The Company is upgrading the BHP Billiton-funded EARS section of the Demonstration Plant to operate on a continuous commercial basis. The designs are complete and quotes are being sought for the essential equipment that requires refurbishing. Agreements are being negotiated to secure a supply of both spent pickle liquor (SPL) as well as mill scale (iron oxide waste) from steel plants around Australia and discussions are underway with a number of groups for the sale of the regenerated acid and DRI products. At full capacity the EARS project will generate a net profit of \$7 million per year and will commence generating a cash flow within six months of commencement

**The 60,000 tpa ERMS SR synrutile plant project is also being progressed.** While the Company's focus is the cash-generating EARS project at Newcastle, discussions are underway with a number of groups for the supply of raw materials for the proposed 60,000 tpa plant in Eastern Australia. The testing by six international companies of the ERMS SR synrutile produced at the Plant last year is in progress. It is expected that positive results will lead to agreements for the sale of any synrutile produced at the commercial plant. Data from last year's operations at the Demonstration Plant is being collated in-house prior to commencing any external engineering studies.

**Copper-Gold Potential in EL 4521, Victoria.** A study was initiated of the potential of the Cambrian basement, which underlies the marine sediments of the Murray Basin within E.L. 4521, to host porphyry style copper and gold mineralisation, similar to targets being evaluated by Beaconsfield Gold near Stavely. Austpac's detailed aeromagnetic coverage provides information on the geology and structure of the basement underlying this veneer of sediments, and air-core drilling is required to assess prospective zones within the basement.

## **THE 3,000TPA ERMS SR DEMONSTRATION PLANT**

### **Demonstration Plant Campaign Complete**

In December 2008, the campaign to demonstrate and prove Austpac's technologies, collectively termed the "ERMS SR" process, was successfully completed. The showcasing of the relevant technologies at the Plant, including ilmenite roasting, EARS acid regeneration, the continuous leach reactor ("CLR"), and the direct reduction of iron oxides to iron pellets ("DRI"), was a major achievement that has allowed the Company to move into commercialisation. Austpac has now proved the world's only fully continuous synrutile process that produces ultra-high grade synrutile and an iron co-product. Operations at the plant also proved the ability of the EARS to regenerate acid from spent pickle liquor (a waste created in finishing some steel products), and of the DRI process to produce iron metal pellets from iron ore fines, thus widening the commercial applications for the Company's technologies.

### **Review of the Demonstration Plant Project**

In 2004, Austpac recognised it would be necessary to build a plant capable of testing all the technologies that comprise the ERMS SR process. Such a plant was necessary to prove the technologies at a sufficient scale prior to committing to a commercial development, and funds were sought for a Demonstration Plant capable of producing at a rate of 3,000tpa.

BHP Billiton, the world's largest resource group, recognised the potential of the ERMS SR technology in 2006 by funding a research program and it subsequently supported Austpac's capital raisings to fund the construction and operation of the ERMS SR Demonstration Plant. In June 2007, Austpac placed 25,000,000 fully paid ordinary shares at 20 cents each with BHP Billiton to raise \$5 million, and in June 2008, BHP Billiton participated in a second share placement and contributed a further \$3 million to become Austpac's largest shareholder with a total holding of 55 million shares (7.25% of the Company).

BHP Billiton was granted a licence in mid 2007 to use the ERMS SR technology in Africa, subject to payment of a royalty based on gross annual sales, and in June 2008, BHP Billiton acquired a non-exclusive licence to use Austpac's LTR (Low Temperature Roasting) technology in Africa. BHP Billiton owns the massive Corridor Sands heavy mineral deposit in southern Mozambique, which contains one third of the world's ilmenite. ERMS SR is the only process capable of treating Corridor Sands ilmenite to produce ultra high grade synrutile and the iron pellet co-product.

Construction of the Demonstration Plant commenced in July 2007, and in March 2008 Stage One of the project, the ilmenite roasting section, was commissioned. This section operated continuously until July 2008 and during the campaign treated over 700 tonnes of ilmenite.

Construction of Stage Two, the ilmenite leaching/synrutile production and the EARS acid regeneration/DRI section, continued while Stage One operations were underway, and by September 2008, Stage Two was ready for commissioning. The first equipment to be operated was the DRI section, which successfully used to reduce iron ore fines from the Pilbara to iron metal pellets. This was followed by the EARS acid regeneration section, which was commissioned using SPL from an Australian steel mill and produced strong hydrochloric acid for leaching. In mid October 2008 Austpac's CLR commenced leaching ilmenite, followed by the calcining/cooling section and by the end of that month operations ceased, having achieved the goal of producing sufficient ultra-high grade synrutile for market assessment by potential customers.

Austpac is pleased to have achieved all its goals within the very short time period of 15 months.

### **ERMS SR Synrutile Production at the Demonstration Plant**

Austpac's Continuous Leach Reactor (CLR), which is covered by a patent for ilmenite treatment, was used to leach ilmenite from the Murray Basin that Austpac had roasted earlier in 2008. The leached ilmenite was dried, calcined and passed over a rare earth roll magnet to ensure the purity of the synrutile product.

Analyses of samples of the bulk synrutile product contained over 97% TiO<sub>2</sub>. This ultra-high grade product proved the leaching efficiency of the CLR equipment and exceeded expectations based on previous bench-scale leaching

of the same ilmenite. The bulk synrutile product also contains very low levels of iron and other impurities, and negligible amounts uranium and thorium, confirming it is suitable for titanium metal manufacture.

Large samples have been despatched for testing by various international end users who have shown strong interest in Austpac's award winning technology, and who are potential customers for synrutile produced in a commercial ERMS SR plant. Results of these tests are expected during the January-March Quarter, 2009.

### **The 60,000 TPA ERMS SR Commercial Synrutile Plant**

Austpac intends to commercialise the ERMS SR technology by building a 60,000tpa synrutile plant in Eastern Australia, subject to the completion of a Bankable Feasibility Study (BFS). This is an acceptable 20 times scale up from the Newcastle Demonstration Plant. The first stage of the BFS is an external engineering study to establish capital and operating costs. Data from last year's operations at the Demonstration Plant is being collated in-house prior to commencing this study. However the synrutile project has lesser priority than the proposed near term cash-generating EARS project to treat steel industry waste at the Company's existing Newcastle facilities.

Discussions are however progressing with potential suppliers of raw materials, such as ilmenite and coal, for the proposed 60,000tpa plant in Eastern Australia, and contracts for future supply will be negotiated as appropriate with various groups. Preliminary enquiries are also being made into transport and infrastructure suitability (road, rail, power, port and shipping), and arrangements will be finalised when the site for the proposed plant in Eastern Australia has been selected.

It is also expected that the exhaustive testing of the bulk ERMS SR synrutile being undertaken by international groups will lead to future sales arrangements for all synrutile produced by the commercial plant. It is anticipated that DRI will be sold to Australian steel makers. Both raw material supply and product sales agreements are necessary for the BFS.

### **THE NEWCASTLE EARS STEEL WASTE PROJECT**

A very positive outcome resulting from 2008 program at the Newcastle Demonstration Plant was the proving of the EARS process by using spent pickle liquor, SPL, to produce strong (~25%w/w) hydrochloric acid and iron metal pellets. While the synrutile production capacity was 3,000tpa, the EARS section of the Plant has the capacity to treat 13,000 tpa of iron chloride solution, which is a financially viable volume given the equipment is already installed at Newcastle. Additionally, testwork conducted with OneSteel early in 2007 showed that up to two tonnes of mill scale (iron oxide waste produced during steelmaking) could be mixed with each tonne of SPL to recover one tonne of HCL and 1.6 tonnes of DRI. Thus the objective of the Newcastle EARS Project is to treat waste products from the steel industry, SPL and mill scale, and convert them into hydrochloric acid (HCL) and iron pellets (DRI) on a commercial basis.

The EARS project has clear environmental benefits as waste products are turned into saleable products and will solve a significant waste problem in the steel industry.

The ERMS SR Demonstration Plant, and the ancillary EARS plant, was built to prove the Company's technology but not for long term operations. Some equipment items in the EARS section require replacing or refurbishing so the plant can undertake long term, 24 hour/7 days per week operations, a prerequisite for any commercial undertaking. Given most of the EARS section is in place, Austpac estimates it will take three months to complete the refurbishment and a further month to fully commission, so the plant will commence ramping up to full production within five months of project commencement. At full production, the plant would produce over 7,000tpa of 25% HCL and over 18,000tpa of DRI. Using data obtained during operations last year and current costs with sales to local businesses, Austpac estimates such an operation would generate a net profit of \$7 million per year.

The major step of designing the refurbishment has been completed and quotes are now being sought for essential equipment. Supply agreements are being negotiated to secure a supply of both spent pickle liquor (SPL) as well as mill scale (iron oxide waste) from steel plants around Australia and discussions are underway with a number of groups for the sale of the regenerated acid and DRI products. The project is scheduled to commence in the first quarter of 2009 and to commence generating a cash flow within six months.

## **MULTISERV AGREEMENT EXTENSION**

Austpac and MultiServ Group Limited have agreed to extend their agreement to identify and evaluate worldwide opportunities for the application of Austpac's processes in the steel industry until mid 2009. MultiServ requested a six month extension to the agreement, which was due to expire at the end of 2008.

MultiServ has until 30th June 2009 to elect to negotiate an agreement with Austpac for the joint exploitation of the technology whereby MultiServ funds any plant built to recycle Mill Waste. Any Mill Waste plants in Australia wholly or partly owned by Austpac prior to exercising that option, as well as the Newcastle ERMS SR plant, are excluded from the agreement.

## **EXPLORATION LICENCE 4521 – HORSHAM, VICTORIA**

Australian Zircon has advised that the first stage of its planned Bankable Feasibility Study on the potential development of the WIM150 deposit is progressing steadily. Stage one includes reviews of water supply options, radiation regulations and overview of Victorian regulatory processes. The commencement of a bankable feasibility study of WIM150 marks a significant advance in the assessment of the mineral resources within E.L. 4521. Australian Zircon may earn an 80% interest in WIM150 by completing a Bankable Feasibility Study on the deposit.

Approximately five tonnes of fresh WIM150 obtained from the high zircon portion of WIM150 has been processed by Downer EDI Mining. Australian Zircon reports that using standard mineral sand technology and processes, feed preparation test work achieved an 84% recovery of zircon to a Heavy Mineral Concentrate. Subsequent mineral separation plant test work produced ilmenite, secondary ilmenite, Hi-Ti (high titanium) and zircon products. The overall recovery of zircon to a final product was approximately 61%.

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*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.*

### **About Austpac Resources N.L. (ASX code: APG)**

#### ***WINNER: 2008 National Mining Awards APPLIED TECHNOLOGY OF THE YEAR***

Austpac [ [www.austpacresources.com](http://www.austpacresources.com) ] is a minerals technology company focused on the titanium, steel and iron ore industries. It has been listed on the Australian Stock Exchange since 1986. Austpac's key technology transforms ilmenite into high-grade synthetic rutile, a preferred feedstock for titanium dioxide pigment and titanium metal production. The technology can also be used to process waste chloride solutions and iron oxides produced by steel making to recover hydrochloric acid and iron metal pellets. A third process can be used to produce Direct Reduced Iron (DRI) from both hematite and magnetite iron ores.