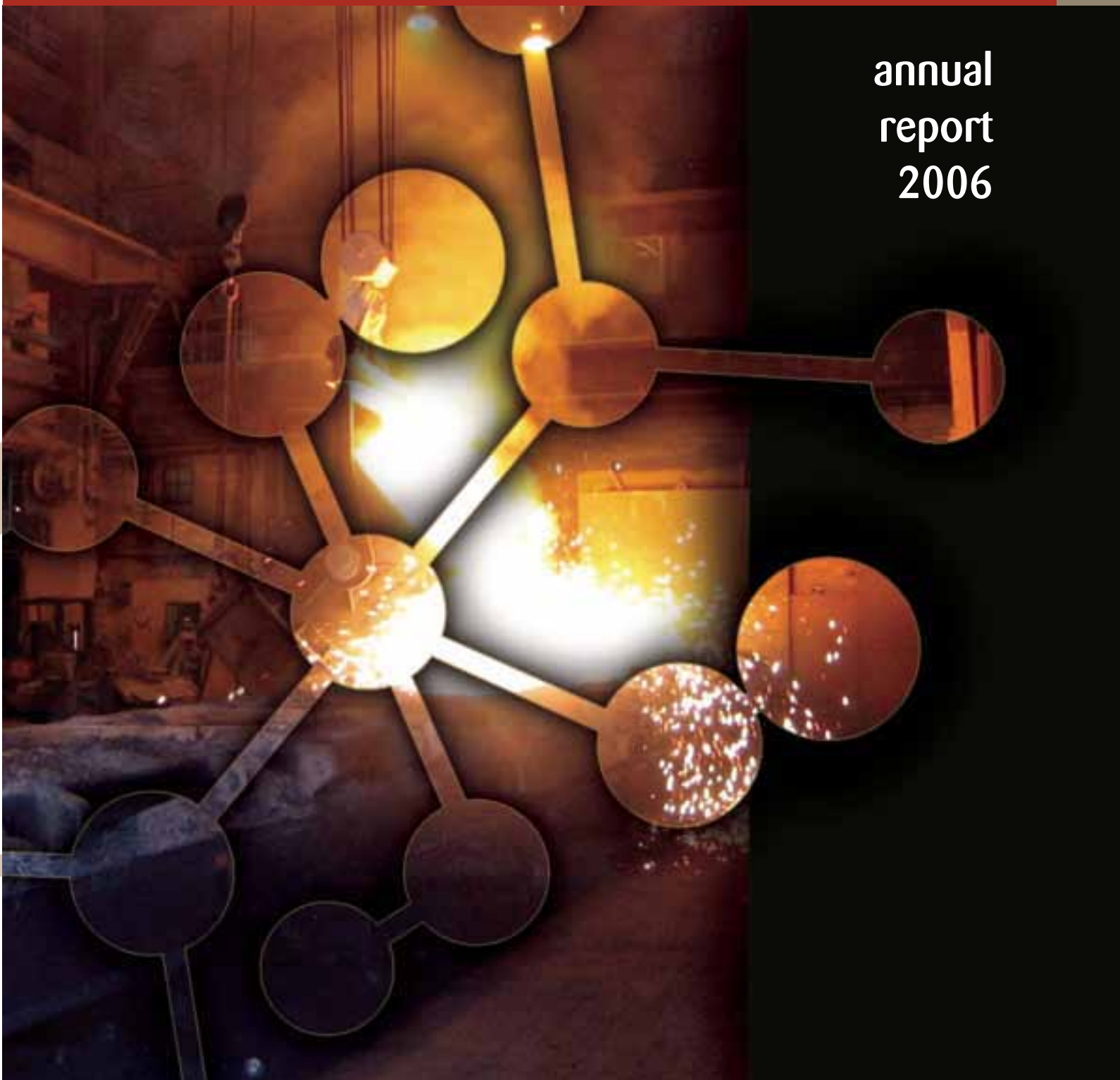
AUSTPAC RESOURCES N.L.

annual report 2006



Vale: Ernest Allen Walpole; 2 January 2006

Austpac lost a valued friend and mentor in Ernie Walpole who succumbed to cancer on 2nd January 2006 aged 81

Ernie, who completed his degree in 1953, was one of the first three Chemical Engineering graduates from the University of Newcastle. After a distinguished 50 year career in the chemicals industry, he joined Austpac in 1988 to work on ilmenite beneficiation.

He was the inventor of several key technologies that form part of Austpac's ERMS SR process. He also played an important role training and mentoring Austpac staff, which led them to develop additional process innovations now patented by the Company.

His enthusiasm, experience, and creativity are missed by the Austpac team, which is dedicated to commercialising the technology that Ernie conceived.

A memorial fund has been created at the University of Newcastle to assist students complete the final year of their Chemical Engineering degree and donations toward this fund are welcome.

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Highlights

- In September 2006, Austpac signed a Research Agreement with BHP Billiton to continue the ongoing development of the Company's ERMS SR technology. Under the agreement, BHP Billiton will provide funds for the commissioning and operation of equipment designed to prove Austpac's proprietary continuous metallisation process, additional modelling to confirm the design of the proprietary continuous leach vessel, an update of the capital cost estimate for Austpac's planned ERMS SR Demonstration Plant at Newcastle, and an independent concept level cost study to obtain capital and operating costs for a commercial scale ERMS SR plant. The immediate objective is to undertake essential testing of the metallisation and leaching steps prior to construction of the Demonstration Plant. The program commenced in September 2006 and should be completed in November 2006.

- Construction of Stage One, the ilmenite roasting section, of the ERMS SR Demonstration Plant continued at Austpac's test facilities on Kooragang Island, Newcastle. The fluid bed roasters were fabricated and installed, and the raw material handling systems with the electrical, control and air systems were designed. Planning for Stage Two of the Plant, the ilmenite leaching/SR calcining and the EARS acid regeneration section, continued with detailed design drawings and specifications for the major items completed ready for fabrication by outside contract groups. The Plant will provide data to support a bankable feasibility study into a commercial ERMS SR plant.

- 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. A stand-alone fluid bed metallising unit has been constructed at the Company's Kooragang Island facilities and is now in the commissioning stage. This will prove the metallising process on a continuous basis, and it is planned to test iron oxide pellets from the EARS process, as well as fine iron ore from the Pilbara region of Western Australia.

- Austpac has developed a new process to agglomerate fine grained high grade titanium minerals and has constructed a fluid bed agglomerator at the Kooragang facilities. Initial trials produced ideally sized "Hi-Ti" mineral agglomerates, and further testwork is planned for later in 2006. This has the potential to unlock fine grained ilmenite resources, such as the Company's WIM 150 deposit in the Murray Basin.

- A preliminary gold exploration agreement was signed covering a number of producing gold mines in south eastern China. Negotiations are well advanced with a joint venture partner to provide funding for a drilling program to explore for sulphide gold mineralisation below these current mining operations.

- Exploration Licence 4521, which covers the WIM 150 fine grained heavy mineral deposit, was renewed. Australian Zircon N.L., which may earn an 80% interest in WIM 150, continued data review and mineral processing testwork, and intends to undertake a drilling program on the deposit later in 2006.

Highlights

1 John Winter finalising construction of the metalliser

2 John Winter and Jon Trigger commissioning the metalliser

3 John Winter sampling the agglomerator

Chairman's Review

I am pleased to report that the perseverance and diligence of the Austpac Resources team has resulted in a research agreement with BHP Billiton to progress our technologies.

During the course of the year significant technical progress and advances have been made at our Newcastle pilot plant facility in the development and refinement of the ERMS SR and related technologies. Of particular note are the new metallisation process for reducing iron oxides to iron metal (a Direct Reduced Iron, or "DRI", process), and the new technique for agglomerating fine minerals using fluid bed technology. This agglomeration technique will enable the company to process its WIM 150 fine minerals deposit in the Murray Basin.

In September 2006 following due diligence, BHP Billiton agreed to fund the next stage of development of the ERMS SR process, including work on metallisation and continuous leaching, and an independent costing study of a large commercial ERMS SR plant.

A new opportunity was also progressed when preliminary agreements were signed with the relevant provincial Government entities in China to explore for sulphide gold mineralisation beneath existing gold mines. A third party has indicated they will fund the first phase of discovery drilling at four of the mines. It is anticipated that formal joint venture agreements will be signed before the end of 2006, allowing the exploration program to get underway early in 2007.

Austpac Resources N.L. has been well supported by shareholders throughout the year providing the necessary working capital to maintain the commercialisation of our technologies. It was not necessary to access the five year $3 million equity finance facility with the USA investment fund, Cornell Capital Partners, because of the interest demonstrated by Australian investors in private placements made during the past year.

The Company was also assisted in research and development funding by the Government R&D tax concession refund for eligible technology expenditure.

Despite a challenging year, the Company is now progressing quickly with technology transactions of substance with major corporations. Recognition of this is evident in the strong support for the Company's shares during the last quarter and a number of approaches being made to the company for use of its technologies.

I would like to thank my fellow directors and the management team for their efforts this year and for setting a foundation for next year.

↑ Double dump valve

↓ John Winter operating metalliser

T. Cuthbertson
Chairman

Status of Austpac's Mineral Processes

Austpac's flagship technology, the **ERMS SR** process, beneficiates ilmenite by combining proprietary roasting, leaching and acid regeneration technologies and process know-how in a unique way to produce very high grade synthetic rutile, together with a valuable pelletised iron co-product. The ERMS SR process has been extensively piloted at our test facilities on Kooragang Island, Newcastle, and the Company intends to complete a bankable feasibility study which will confirm the commercial viability of a full scale plant. The first step in this process is the construction and operation of a Demonstration Plant to obtain sufficient engineering and process data for the study and to satisfy project financing requirements. As described elsewhere in this report, construction of the Demonstration Plant commenced in 2005, and is now well advanced.

↑ ERMS SR Demonstration Plant at Kooragang Island, Newcastle

Austpac has for some time been discussing the commercialisation of the ERMS SR process with companies involved in the titanium business in order to fund new developments at the Demonstration Plant and the bankable feasibility study. This effort took a major step forward in September 2006, when Austpac signed a Research Agreement with **BHP Billiton** to continue the ongoing development of the ERMS SR technology. Under the agreement, BHP Billiton will provide funds for:

- The commissioning and operation of the equipment designed to prove Austpac's proprietary continuous metallisation process, which is now being commissioned at the Newcastle plant,
- Additional modelling of the proprietary continuous leach vessel that will form part of the proposed ERMS SR Demonstration Plant planned for Newcastle,
- A review and update of the capital cost estimate for the Demonstration Plant, and
- An independent concept level cost study to obtain updated capital and operating costs for a commercial scale ERMS SR plant.

The agreed work program will take approximately three months and should be completed in November this year. The program will enable Austpac to complete essential testing of the metallisation and leaching steps to confirm the final design and layout of the equipment in the Demonstration Plant. It will also prove those two key steps prior to the development of the Plant.

On completion of the Research Agreement, BHP Billiton will have a right to acquire an exclusive licence for the ERMS SR technology for TiO_2 applications in Africa, and to continue funding the development of the technology, including the Demonstration Plant, through equity participation or otherwise, on terms to be agreed.

New Applications

During the past year, we identified a number of new applications for our mineral processes. These include:

- Using the **EARS** acid regeneration process for the treatment of hazardous waste dusts in the steel industry and recovery of iron units now lost during the steel-making process, and
- The use of the metallisation step from the EARS process as a stand-alone plant to reduce iron ore to **D**irect **R**educed **I**ron (**DRI**).

These applications were investigated during the year under review and are described in more detail elsewhere in this report. They have significantly broadened the opportunities for commercialisation, and they will be developed further during the coming year.

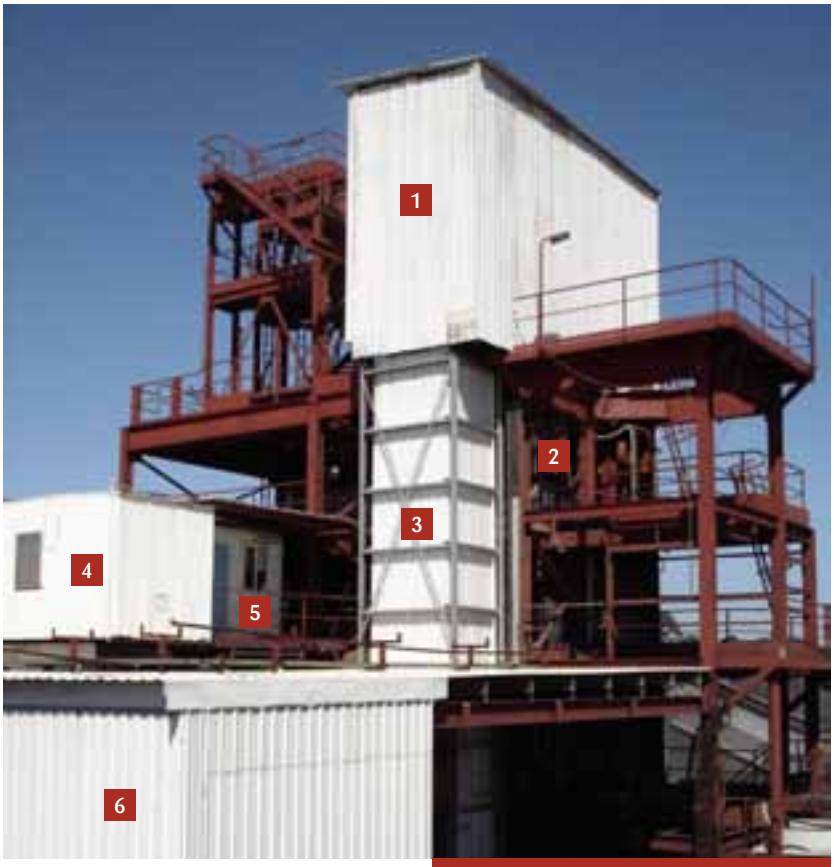
The ERMS SR Process

The application of the ERMS SR synthetic rutile process commences by conditioning ilmenite in a fluid bed roaster, then leaching it in our patented continuous leach reactor at atmospheric pressure with strong hydrochloric acid to remove the iron, leaving a network of rutile crystals within the former ilmenite grain. This "synthetic" rutile is then washed, filtered, heated (calcined) and passed over a magnet to clean up the final product, which typically contains 96% to 98% titanium dioxide, or TiO_2.

The iron leached from the ilmenite occurs as an iron chloride solution, which is treated in an EARS acid regeneration plant to form strong hydrochloric acid and iron oxide pellets. The final stage of the EARS process reduces the iron oxides to metallic iron, termed Direct Reduced Iron ("DRI") pellets, and this product is an excellent feedstock for steel making using an electric arc furnace.

ERMS SR contains significantly more TiO_2 than other commercially available synthetic rutile. The ERMS SR process is the only continuous synrutile process in the world, and is the only one that produces an iron co-product. It is the most environmentally friendly process in the industry, with no solid or liquid wastes, significantly lower carbon dioxide emissions, and lower capital and operating costs in comparison with other synrutile processes.

Other synrutile processes produce fine black or red iron oxides, and this 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.



ERMS SR Demonstration Plant

1 Raw materials feed bins and enclosure
2 Roaster train
3 Raw materials hoist enclosure
4 Motor control centre
5 Control room
6 Magnetic separation enclosure

The ERMS SR Demonstration Plant

In order to commercialise the ERMS SR process, Austpac is required to complete a detailed bankable feasibility study, and to obtain data for engineering design and costing which will satisfy project funding requirements for a commercial plant. To achieve this, an integrated plant is being built at our facilities on Kooragang Island, Newcastle. The initial design capacity of the Demonstration Plant was 1,500 tonnes per annum (tpa) of synthetic rutile, however we have decided to expand this capacity to 3,000 tpa to reduce the scale-up factor to a commercial plant.

During the second half of 2005 and into the first quarter of 2006, work concentrated on the construction of the roasting section, or "Stage One" of the Demonstration Plant. This is designed to treat 750 kilograms per hour of ilmenite. It comprises three fluid bed roasters, an afterburner, an anaerobic cooler and the magnetic separators, which have been fabricated and installed in the refurbished process tower. A novel ilmenite feeder, capable of feeding wet or dry ilmenite into the pre-heater while maintaining a gas seal, was constructed and successfully tested. A security fence around the site was completed, and a large area immediately north of the process tower was levelled for a concrete slab, which will be used as a receival area for coal and ilmenite during Stage One and for an acid tank farm for the EARS section of the plant. The feed and product handling systems were under

construction and some of the air systems had been installed when work was deferred pending raising sufficient funds to continue plant construction. The process control units, and the electrical and materials handling systems are the main items requiring installation to complete Stage One.

Early in 2006, we undertook the detailed design, drawings and specifications of the equipment for Stage Two of the Demonstration Plant (the ilmenite leaching, synthetic rutile calcining and the EARS acid regeneration sections). This will facilitate off-site fabrication, which will shorten the construction time, rather than the "in-house" construction used for Stage One. A unique hot solids transfer system, an essential component of the iron metallisation section, was successfully modelled to assist detailed design of the EARS section.

The Demonstration Plant will have a design capacity of 3,000 tpa of ERMS SR and 1,500 tpa of iron pellets, and will be operated for sufficient time to obtain engineering data for the design of a commercial ERMS SR plant, and to produce samples for a product marketing campaign, with emphasis on the iron co-product. Australian steelmakers have already indicated a desire to test the iron pellets with a view to long term purchase agreements. It is anticipated that once funds for completing the plant are available, it will take approximately six months to construct and run the plant, and a further three months to complete the bankable feasibility study.

Austpac envisages the first commercial ERMS SR plant will have an annual capacity of 60,000 tpa of high grade synthetic rutile and at least 30,000 tpa of iron pellets. A number of possible sites for this plant have been considered, including sites in south eastern Australia which would have the capability of upgrading the high chrome, low value ilmenite now being produced in the Murray Basin. Site selection work will continue once construction of the Demonstration Plant recommences.

↑ Fine mineral agglomerates

↓ Jon Trigger insulating the metalliser

↑ Fine mineral fluid bed agglomerator

Fine Mineral Agglomeration

For several years Austpac has been evaluating methods of pelletizing fine minerals, in an attempt to produce marketable synthetic rutile from the very fine ilmenite at Austpac's WIM 150 mineral sand deposit near Horsham, Victoria. While this had been attempted by other groups, it required the addition of a binder that was deleterious to the final product. A breakthrough occurred during the first half of 2006, when Austpac's engineers designed and built a novel fluid bed agglomerator to test samples of fine titanium minerals provided by an overseas group. The initial trials, which produced ideally sized "Hi-Ti" pellets, were very encouraging, and additional tests are planned later this year.

We intend to incorporate the agglomeration technology into the calciner on the Demonstration Plant so that large samples of fine minerals can be processed. The success of this program will have significant implications for fine mineral deposits such as Austpac's WIM 150 deposit in the Murray Basin, Victoria, and open up commercial possibilities for co-operation with other mineral sand and titanium feedstock producers.

The EARS Acid Regeneration and Iron Metallisation Processes

The EARS process, patented by Austpac in the early 1990s, was developed to regenerate strong hydrochloric acid from ilmenite leach liquors, and its original by-product was benign iron oxide pellets, which had low intrinsic value and would be disposed of as inert landfill. Recognising the need for value creation, Austpac's engineers undertook innovative testwork which resulted in the development of a new process to reduce the iron oxides to iron metal pellets (DRI). The process can be incorporated into an EARS plant by re-configuring the fluid bed roasters in a novel way. A preliminary patent application was lodged in June 2005, and following batch testwork to refine the process, a PCT (worldwide) patent application was lodged in June 2006.

The EARS section of the planned Demonstration Plant will include a continuous metallisation unit producing several hundred kilograms of iron per hour. In mid-2006, it was decided to test our novel iron reduction process on iron ores by constructing a stand-alone continuous fluid bed metallising unit at Newcastle, as we recognised potential applications for the process in the iron and steel industries.

At the time of writing this report, the metalliser was being commissioned and we are confident that we will be able to reduce not only the oxide pellets from an EARS plant, but also fine iron ores, and so the process will have world-wide application. We will be using iron ore fines from the Pilbara region of Western Australia to demonstrate iron ore reduction, and expect to report progress in October 2006 in this regard.

The new reduction process has two immediate applications in the iron and steel industries, as described in the following sections.

Recovery of Iron and Treatment of Waste in the Steel Industry

In the steel industry, prior to painting or coating, steel is "pickled" by passing it through an acid bath to remove oxide scale. The spent liquors are often neutralised and then disposed of or used as a flocculant in sewerage treatment plants. An EARS plant could be employed to regenerate hydrochloric acid from spent pickle liquor from a large steel works, and it would have the ability to recover iron units which are currently lost during the "pickling" process. Additional iron units lost as oxide during the steel rolling process could be recycled through the EARS plant, as could baghouse dust, which contains metal oxides. Mill scale and baghouse dust could be added to the spent liquors and recovered as DRI pellets. Testwork at Newcastle has shown that two tonnes of mill scale and/or baghouse dust can be added to each tonne of spent pickle liquor, resulting in the regeneration of one tonne of acid and the recovery of 1.6 tonnes of iron as DRI pellets.

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 preliminary discussions have been held with a number of local and offshore groups in regard to this application. When completed, the Demonstration Plant will be useful to showcase the application to such groups.

Direct Reduction of Iron Ore

The potential for direct reduction of iron ore is a powerful new application for our process. Preliminary work has indicated Austpac's reduction process is applicable to iron ore fines, and the continuous metallising unit now being commissioned at Newcastle will be used to demonstrate this on a larger scale. 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.

↑ John Cox adjusts thermocouples on the metalliser

← Sight glass on metalliser

Sampling of major structures at a gold mine

Gold Exploration in China

In December 2005, the Company identified gold exploration opportunities in China, building on goodwill generated during property evaluations undertaken some years previously. The prospective areas lie within gold districts in which there have been a number of recent discoveries, which Austpac has diligently monitored.

During the first quarter of 2006, Austpac undertook an initial evaluation of two mining projects within a gold district in south eastern China within a geological setting that is documented by the U.S. 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 sulphide gold mineralisation below an existing oxide gold mine.

The operating mines that we have evaluated are exploiting near-surface oxide gold ore along major gold-bearing structures and they have good potential for significant gold-bearing sulphide mineralisation at depth. Samples taken during the first quarter of 2006 from the top of the underlying sulphide zones were encouraging, and confirmed the grades of 4 to 6 g/t Au reported from the sulphide zones. The mine owners are seeking both funding and technical expertise to develop the mines within the primary sulphide zone, underneath the oxide zones.

Mike Smith sampling mine ore zone in China

During June 2006, 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 providing ongoing funding for the evaluation and development of these properties as sulphide gold mines.

During September 2006, due diligence investigations commenced on all aspects of the properties which will lead to the execution of a formal contract for exploration before the end of the year. Until this contract is executed the identity of the other parties to the joint venture remains confidential. Upon the granting of a Business Licence to operate in China, it is anticipated that the joint venture will commence a comprehensive program of drilling and related investigations during the first half of 2007.

Exploration Licence 4521 – Horsham Joint Venture

The Victorian Department of Primary Industry has renewed EL 4521, at Horsham, which contains the large fine grained WIM 150 deposit, for an additional two year term and has granted EL 4532 following the termination of Native Title Applications with respect to Crown Land inside the area of EL 4521. The two licences are now being merged.

WIM 150 contains approximately five million tonnes of zircon and approximately 12.5 million tonnes of ilmenite; and is therefore a very large resource of heavy minerals. Austpac demonstrated some years ago that a +95% TiO_2 synthetic rutile can be produced from the fine grained WIM 150 ilmenite. The Company has also successfully agglomerated this product. However, at that time we were concentrating on processing coarse grained ilmenite and full scale test work on WIM 150 ilmenite was deferred.

In February 2004, Austpac and Australian Zircon N.L. (formerly Southern Titanium N.L.) signed a farm-in agreement to investigate the potential for the development of Austpac's WIM 150 heavy mineral deposit. Australian Zircon will earn an 80% participating interest by completing a bankable feasibility study on WIM 150, after which Austpac may elect to maintain a 20% working interest or convert to a 10% net profit interest.

Australian Zircon has conducted a comprehensive review of all data derived from drilling and assaying undertaken on the WIM 150 heavy mineral resource in the 1980s by Wimmera Industrial Minerals, a subsidiary of Rio Tinto.

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_2 to the rutile/leucoxene products.

Subsequently, Australian Zircon (AZC) reported that primary and secondary ilmenite concentrates were produced by Roche MT from WIM 150 heavy mineral concentrate. The material was amenable to standard dry magnetic and high tension roll techniques to derive the ilmenite products. The results of these tests were in line with expectations based on previous testwork including recoveries in excess of 90%.

AZC intends to undertake drilling within the core zone of WIM 150 later this year to confirm the quality of the older exploration data, and also plans to excavate an additional bulk sample of heavy mineral concentrate for further metallurgical testwork in 2007. Subject to the results of these programs, AZC proposes to commence a bankable feasibility study on WIM 150 during the second half of 2007.

Austpac is independently progressing tests on the fine ilmenite from WIM 150. The Company has previously reported that the ERMS SR process can produce a good synthetic rutile product, but it was too fine to be commercially acceptable. We believe the development of the fluid bed agglomerator for fine minerals, described in a previous section of this report, will provide a solution for the fine grained titanium minerals at WIM 150, and further testwork is planned on this material.

Schedule of Mining Tenements in Victoria at 30 October 2006

Nature of Title	EL 4521	EL 4532
Area	377 sq km	377 sq km
Name	Horsham	Horsham
Status	Granted 1/12/05 for two years	Merger with EL 4521 pending

↑ Spiral separation of WIM 150 heavy minerals

Corporate Directory

Members of the Board

Mr Terry Cuthbertson *ACA*
Chairman

Mr Michael J. Turbott *BSc (Hons), FAusIMM, MAIG*
Managing Director

Mr Robert J. Harrison *FAICD*
Director

Secretaries

Company Secretary
Mr Nicholas J. Gaston *ACIS*

General Managers

Mr John Winter *BEng (Hons) – Chemical Engineering, MIEAust, MIChemE*
General Manager Technology Development

Mr Michael J. Smith *BSc, MSc, RPGeo, FAIG, MGSA, MASEG*
General Manager Exploration

Auditors

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10 Shelley Street, King Street Wharf
Sydney, NSW 2000

Solicitors

Gadens Lawyers
77 Castlereagh Street
Sydney, NSW 2000

Share Registry

Link Market Services Limited
Securities Registration Services
680 George Street
Sydney, NSW 2000

Bankers

ANZ Bank
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Sydney, NSW 2000

Stock Exchange Listing

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