in collaboration with
The SAIMM Namibian Branch are organising the
Fourth Southern African Base Metals Conference
‘Africa’s base metals resurgence’

23–27 JULY 2007
SWAKOPMUND, NAMIBIA

Final Circular and Registration Forms
The Organisers of the Conference wish to thank the following sponsors for their support:

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Invitation from the Organising Committee

The past decade has seen a tremendous revival of the base metal industry in Africa, coupled with an unprecedented increase in the prices of base metal commodities in the last couple of years. The theme of the 4th Southern African Base Metals Conference, is therefore, ‘Africa’s base metals resurgence’.

This conference will explore the contributions made by the mining and metallurgical disciplines to the base metals industry in Africa. It will also investigate how the base metals industry in Africa can capture the maximum potential from the increase in base metal prices through research, innovative thinking, new ways of operating and project implementation.

The conference will also consider the influence of Europe’s REACH programme on the base metal industry in Southern Africa.

The conference will include a technical visit to Rössing Mine (Uranium) and will be followed by technical visits to Ongopolo (copper), Skorpion Mine (zinc) and Rosh Pinah Zinc Corporation (zinc and lead).

The conference, to be held in Swakopmund, Namibia, also confirms the commitment of the Southern African Institute of Mining and Metallurgy (SAIMM), to hosting a regular forum on base metals in the Southern African region.

Swakopmund is an ideal conference venue for local and international mining and metallurgical professionals to be exposed to the latest advances in exploration, resource evaluation, projects and technological advances in Southern Africa’s base metal industry.

The organising committee is looking forward to your participation at the conference in July 2007.

P. Fouche
Chairman
Organising Committee

Invitation from Exxaro Base Metals


As a significant Southern African base metals producer, Exxaro’s Zincor refinery in South Africa and zinc/lead mine in Namibia make up one of the world’s few integrated zinc mining and refinery operations. The company is proud to support the conference, which we believe will offer an excellent forum for Southern African and global base metals role-players to engage in dialogue on challenges facing the base metals industry, discuss the REACH programme of Europe, and investigate a range of other topics. The conference will examine achievements and lessons learned in growing the base metals industry in Southern Africa over the past few years, and offer participants a host of networking opportunities.

Exxaro expects the conference to further strengthen the industry, offering insight and information that will benefit all role-players. Exxaro’s Rosh Pinah mine in southern Namibia will be among the Namibian mines included in the post-conference technical visits.

The conference details are attached for you to consider.

We look forward to seeing you in Swakopmund!

Mxolisi Mgojo
Executive General Manager
Exxaro Base Metals & Industrial Minerals
Organising Committee

P. Fouche (Chairman)
P. Ferreira W. van der Merwe
R.T. Jones T. Vermaak
A.F. Mulaba J. Wyethe
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Conference Co-ordinator
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Website: http://www.basemetals.org.za/Swakopmund2007

Key dates

Submission of papers 31 May 2007
Technical visit 14 July 2007 (deadline date for confirmation of charter flight bookings)
Conference 23–25 July 2007
Site visit 26–27 July 2007

Conference programme

The technical programme consists of keynote addresses, as well as papers, which have been provisionally accepted:

Monday 23 July 2007

08:00–08:05 Welcome Chairman of SAIMM Namibia
08:05–08:15 Welcoming address SAIMM President
Tuesday 24 July 2007

PARALLEL SESSION 1

07:45–08:30  Keynote Speaker:

08:30–08:55  Rock support in Southern African hard rock mines
D. van Heerden, Minova RSA

08:55–09:20  Remote mine wide communications
M. Woodhall, GMSI Mining Operations Technologies

09:20–09:45  Grade control blending and selectivity for optimal process performance
at the Skorpion Zinc Mine, Namibia
G.B. Gnoinski, Namzinc (Pty) Ltd, Namibia

09:45–10:15  Tea/coffee

10:15–10:40  Exploitation of a massive low grade zinc-lead resource at Rosh Pinah
Zinc Corporation, Namibia
H. Fourie, P.H. van Rooyen, Rosh Pinah Zinc Corporation (Pty) Ltd, S.
Ruprecht, T. Lund, RSG Global, and N.M. Vegter, and Exxaro Resources

10:40–11:05  Intelligent gearing system—Solution to understand and correct
operational conditions that reduce the fatigue life of a girth gear
D. van Dyk, David Brown Gear Industries

11:05–11:30  Larox horizontal vacuum belt filter with side vacuum
R. Kroukamp, Larox

11:30–11:55  Development of a mineral flotation frother for Nchanga Mine on the
Zambian Copperbelt
H. Zimba, M. Chitambo, Konkola Copper Mines Plc, S. Sondashi, and
W.A. Grobler, Betachem (Pty) Ltd

11:55–12:00  Sponsor presentation

12:00–13:00  Lunch

SESSION 1: Plant visit

13:00–16:45  Rössing visit

PARALLEL SESSION 2

08:30–08:55  Planning a new analytical laboratory for an uranium mine taking
automation into consideration
P.K. Hofmeyr and J.G. Galloway, IMP Automation

08:55–09:20  Tomorrow's technology—out of Africa—today
P. De Waal, Blue Cube Systems (Pty) Ltd

09:20–09:45  Can we decrease the ecological footprint of base metal production by
recycling?
D.R. Groot and P.C. Pistorius, University of Pretoria

09:45–10:15  Tea/coffee

10:15–10:40  Oxidative precipitation of Fe and Mn by air/SO2
M. Mouton, J. van Deventer, Mintek, and J. Vaarno, Outotec

10:40–11:05  Solvent extraction test work to evaluate a versatic 10/Nicksyn™
Synergistic System for nickel-calcium separation
R. du Preez, Mintek, M. Kotze, BHPBilliton, S. Donegan, H. Masina, Tati
Nickel, Botswana, and G. Nel, Lionore SA

11:05–11:30  A comparison of the effect of chemical and bioleaching on the kinetics
of sphalerite leaching
J.W. van der Merwe, D.C. Odendaal, Exxaro Resources, C. Strydom,
University of Pretoria and M.I. Sampson, GeoBiotics LLC, USA
11:30–11:55 Piloting of the Ishigaki Fibre-Wakishimizu—(Fibre media rapid filtration equipment) at Skorpion Zinc
H.F. Fuls and K. Nong, Skorpion Zinc

11:55–12:00 Sponsor presentation

12:00–13:00 Lunch

13:00–13:25 Uranium recovery from acid leach liquors: The optimisation of RIP/SX based flowsheets
D. van Tonder and B. van Hege, Bateman Engineering, South Africa

13:25–13:50 Parameters influencing the leachability of calcines emanating from microwave roasted sphalerite and pyrite concentrates
A.F. Mulaba-Bafubiandi and T. Phiri, University of Johannesburg

13:50–14:15 Comparison of Cu removal from Co sulphate stream using ion exchange via pH-controlled solvent extraction
S. Scott and J. van Deventer, Mintek

14:15–14:20 Sponsor presentation

14:20–14:40 Tea/Coffee

14:40–15:05 Anglo Research (AR) experiences with integrated comminution and flotation plant modelling
S. Naik and W. van Druinik, Anglo Research

15:05–15:30 End-of-life mode of failure of a zinc sulphide concentrate fluidized bed roaster and its rebuilding
C.B. Kohler, S. Venter, N.M. Vegter, and E.H.O. Meyer, Exxaro Zincor

15:30–15:55 Technologies for the base metal casting industry in Southern Africa: The impact of rapid prototyping
D.K. Nyembwe, University of Johannesburg

15:55–16:20 The minerals industry and syndicated research
R.D. Beck, AMIRA International and P.G. Gaylard, University of Cape Town and AMIRA International

18:00 Gala Dinner
12:00–13:00 Lunch

PARALLEL SESSION 2

08:30–08:55 Process development of the Nkomati PCMZ base metals sulphide ore
R.L. Bowers and D.S. Smit, Nkomati Joint Venture

08:55–09:20 Increasing the capacity of grinding circuits without installing more mills
G.F. Barrios (presented by N.J. Barkhuysen), Goldex SA

09:20–09:45 Copper and cobalt extraction from sulphate solution using natural clinoptilolite
A.F. Mulaba-Bafubiandi, D. Nyembe and B. Mamba, University of Johannesburg

09:45–10:15 Tea/coffee

SESSION 1: Plant visit

12:00–16:45 Rössing visit

Conference venue

The Conference will take place at the Swakopmund Hotel, in Swakopmund.

The coastal town of Swakopmund (meaning the mouth of the Swakop river in German) is Namibia’s second biggest town. The architecture and general feeling of the Swakopmund is of a timeless German village. It was founded in 1892 as the main harbour for German South-West Africa. A sizable minority of the population speaks German and has German roots. Swakopmund is approached through the Namib Desert, one of the world’s largest wilderness areas. The boom of the surf on the notorious Skeleton Coast is an ever-present reminder of the icy Atlantic Ocean beyond.

The discovery of uranium at Rössing, 70 km (43 miles) outside the town, led to the development of the world’s largest opencast uranium mine. This has an enormous impact on all facets of life in Swakopmund, which necessitated expansion of the infrastructure of the town to make it into one of the most modern in Namibia.

Registration

Registration fees include attendance at the technical sessions, all refreshments and lunches at the conference, and attendance at the social functions.

Conference registration fees

<table>
<thead>
<tr>
<th>Category</th>
<th>Fee</th>
</tr>
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<tbody>
<tr>
<td>SAIMM members</td>
<td>R6 500.00</td>
</tr>
<tr>
<td>Presenting Authors</td>
<td>R6 000.00</td>
</tr>
<tr>
<td>Non-members</td>
<td>R7 500.00</td>
</tr>
<tr>
<td>Students/retired members</td>
<td>R2 500.00</td>
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</tbody>
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All prices include 14% VAT. Tax invoices will be issued to all delegates. Please note that delegates will only be permitted to attend the conference only if their registration fees have been paid.

Cancellation

A 50% refund will be made for cancellations received before 30 June 2007. No refunds will be made for cancellations on or after 30 June 2007.

Exchange rate

The current exchange rate as at May 2007 is approximately US$ 1.00 = N$7.40 and GBP1.00 = N$14.20. The value of the Namibian dollar is equal to the South African rand. The present rate of VAT (value added tax) in Namibia is 15%.

Accommodation

The organisers have appointed Abenteuer Afrika Safari to secure accommodation at a variety of hotels and guest houses. Block bookings have been made for the following hotels but any bookings made after 14 June are subject to availability. A pre-printed copy of the booking form for recommended hotels close to the conference venue is included in this brochure. Please note that all quoted rates include breakfast and are per night. Delegates must complete and return the form together with the relevant deposit directly to Abenteuer Afrika Safari. Contact details:

Tel: +264 (0)64 404030 · Fax: +264 (0)64 464038 · E-mail: bushtrac@abenteuerafrika.com
Swakopmund Hotel – 30 rooms
This is certainly Namibia’s premier coastal holiday resort. This 4-star luxury hotel has been built around the impeccably restored ‘Bahnhof’ (old train station building) where the old ticket sales area has been transformed into the reception and hotel lobby. Colonial in style, the hotel is set around a large quad with immaculate lawns, a sparkling swimming pool and lofty palm trees. Enjoy the luxury of one of 90 en suite rooms, most of which overlook the pool. Seven TV channels, mini bar and fridge, baby-sitting service and 24-hour room service are available. The Station Grill and the Platform One Restaurant offer mouth-watering menus. Attached to the hotel is the lively entertainment centre with its rustic pub, casino, gym and conference facilities for up to 300 delegates.
Nett price per double room  N$1 770.26  
Nett price per single room N$1 108.96  
Distance from the conference venue: the conference will be held at the Swakopmund Hotel—therefore no transfer required.

Hotel Pension A La Mer – 10 rooms
This hotel is situated in the heart of Swakopmund and offers you charming accommodation with en-suite bathrooms. Only 20 seconds away from the beach and jetty, this pension has 24-hour security. It has a warm friendly atmosphere and a sumptuous breakfast awaits you in the morning.
Nett price per double room  N$421.20  
Nett price per single room N$269.10  
Distance from the conference venue: Situated about 20 minutes walking from the Conference—therefore transfer required.  
Transfer cost: N$60.00 per person nett, one way

Guesthouse Indongo – 6 rooms
Indonga is a stately home converted into a guesthouse with 6 en suite bedrooms, breakfast and bar facilities, lounge, sun deck and expansive gardens. It is 200 m from the beach and 10 minutes from the centre of town. Recently renovated, this house is equipped with all the modern conveniences and offers in-house guests the use of free wireless Internet that is accessible 24/7. Guests can enjoy full English or continental breakfast at the house, or dine at from a superb selection of nearby restaurants to suit every taste. If a personalized service is what you enjoy, then Guesthouse Indongo is your place to stay in Namibia.
Nett price per double room  N$742.00  
Nett price single Room N$640.00  
Distance from the conference venue: about a 10-minutes driving distance from the Conference—therefore transfer required.  
Transfer cost: N$60.00 per person nett, one way

Deutsches Haus – 12 rooms (3 single rooms, 9 double rooms)
Deutsches Haus is conveniently situated only a few minutes away from the town centre. Comfortable guest rooms all have en suite facilities including self-dial telephones. Guests can relax in the attractive recreation area, with a solar-heated indoor swimming pool and sauna or, alternatively, at the private bar.
Nett price per double room  N$675.00  
Nett price single room N$450.00  
Distance from the conference venue: about 10 minutes’ walk from the Conference—therefore no transfer required. However if you do not feel comfortable walking.
Transfer cost: N$60.00 per person nett - one way

Pelican Bay Hotel – 25 rooms
Situated on the edge of the picturesque Walvis Bay lagoon, the Pelican Bay Hotel consists of 47 twin-bedded en suite rooms (24 non-smoking), a presidential suite, a junior suite and a room designed specially for the disabled. Each room has a stunning lagoon view where you can watch the birds or dolphins frolic from the privacy of your own balcony. Each room has the facilities the discerning traveller might require including satellite television, direct dial telephone, tea and coffee facilities, in room, individually controlled air conditioning, and infra red heating lamps in the bathrooms and room services.
Nett price per double room  N$866.00  
Nett price single room N$712.00  
Distances from the conference venue: about 30 minutes’ drive—therefore transfer required.  
Transfer cost: N$130.00 per person nett - one way
The Burning Shore – 7 rooms
Nestled amidst this ethereal beauty, on the edge of the largest sand dunes in the world, overlooking the mighty expanse of the Atlantic Ocean in between Swakopmund and Walvis Airport is the Burning Shore Beach Lodge. A modern, luxurious establishment, this ocean-side lodge is located on Long Beach just south of the unique quaint town of Swakopmund. It offers 7 luxury rooms and 5 luxury suites, all enjoying private bathroom facilities.
Nett price per double room N$640.00
Nett price single room N$490.00
Distance from the conference venue: about 15 minutes drive from the Conference—therefore transfer required.
Transfer cost: N$70.00 per person nett - one way

Hotel Haus Garnison – 7 rooms
This establishment is very centrally situated within about 4 minutes’ walk to the city centre and 500 metres to the beach. All rooms are equipped with shower/bath, toilet, a mini kitchen, telephone, cooling fan & heater. Beer, wine and non-alcoholic beverages can be obtained from our self-help bar facilities or served in the tranquil atmosphere of our lush garden.
Nett price per double room N$470.00
Nett price single room N$310.00
Distance from the conference venue: about 10 minutes’ walk—therefore no transfer required.
However if you do not feel comfortable walking.
Transfer cost: N$60.00 per person nett - one way

Hotel Garni Adler – 14 rooms
The hotel has 14 individually decorated en suite bedrooms, each containing telephone, TV (satellite), hairdryer and underfloor heating—the luxury rooms have a fridge and a safe . Enjoy the indoor swimming pool and sauna. Relax on the roof terrace with a beautiful view over the ocean and the dunes. For your sundowner there is a small bar for house guests. Various good restaurants are close by.
Nett price per double room N$737.61
Nett price single room N$569.74
Distance from the conference venue: about 30 minutes’ walk—therefore transfer required.
Transfer cost: N$60.00 per person nett - one way

Hotel Prinzessin Rupperecht – 9 rooms
You will find the gracious historical building built during German colonial times in the heart of Swakopmund. Accommodation comprises two family flats, 14 double rooms with en suite facilities and 5 single rooms. All rooms are equipped with telephones and a fridge and there is a TV in the comfortable lounge. Full or half-pension is possible.
Nett price per double room N$ 265.00 per person
Nett price single room N$ 240.00 per person
Distance from the conference venue: Situated about 30 minutes’ walk—therefore transfer required.
Transfer cost: N$60.00 per person nett - one way

Strauss Holiday and Overnight Flats – 9 rooms (2 double and 7 single rooms)
Strauss provides eight well-proportioned, tastefully furnished rooms and self-contained apartments with lovely single rooms and larger apartments for bigger groups. There are 4-Channel TV and fans in all the rooms, telephone and Internet facility. English breakfast is served overlooking the tranquil garden and water features.
Nett price per double room N$488.37
Nett price single room N$376.45
Distance from the conference venue: about 15 minutes’ drive—therefore transfer required.
Transfer cost: N$60.00 per person nett - one way

Free Air Guest House – 7 rooms (block booking valid only to the end of June)
This guesthouse has 10 en suite rooms with breathtaking views of the lagoon. Rooms have television, safe and tea/coffee making facilities. There is secure parking and big screen TV in our fully licensed guest bar. A continental breakfast is served upstairs breakfast room boasting panoramic views of the lagoon. Small meals and refreshments can be ordered throughout the day.
Net price per double room N$510.00
Net price single room N$470.00

Distance from the conference venue: about 30 minutes’ drive—therefore transfer required
Transfer cost: N$130.00 per person nett - one way

Langholm Hotel Pension – 14 Rooms
The award-winning Langholm Hotel is situated close to the magnificent wetland of the Walvis Bay Lagoon, and at the edge of the Namib Desert. It has 13 double rooms each with bathroom en suite, television, telephone, safe and fridge.
Net price per double room N$520.20
Net price single room N$591.60

Distance from the conference venue: about 30 minutes’ drive—therefore transfer required.
Transfer cost: N$130.00 per person nett – one way

Social functions
Sunday evening 22 July 2007
Registration will take place from 17:00–18:00 at the conference venue.

Cocktail party
This function will take place at 17:30 during and after registration and will serve as an ‘ice-breaker’ for delegates who register early for the conference. Please indicate your attendance on the registration form for catering purposes.
Cost: Included in conference registration fee.

Monday 23 July 2007
Restaurant tour
The evenings event introduces delegates to a wide range of exciting restaurants in Swakopmund. Delegates will be divided into three groups and, each group will visit a different restaurant for starters, main meal, and dessert. Please indicate your attendance on the registration form for catering purposes.
Cost: Included in conference registration fee.

Tuesday 24 July 2007
Conference gala dinner
Please indicate your attendance on the registration form for catering purposes.
Dress: Smart casual - please dress warmly.
Cost: Included in conference registration fee. A cash bar will be available.

Technical visit
The technical site visit, during the conference will be to Rössing mine.
The cost of the technical tour is included in the registration fees. Please note this visit will take place over three days (Monday 23 July, Tuesday 24 July and Wednesday 25 July 2007). Due to restrictions on the mines only 45 delegates will be allowed to attend per day.

Rössing: a large open pit uranium mine, is situated in Namibia, south-western Africa and started operations in 1976. It is located close to the town of Arandis 65 kilometres inland from the coastal town of Swakopmund in the Namib Desert in the Erongo Region of Namibia.

Rössing’s product is uranium oxide (U3O8) and its customers the nuclear power utilities throughout the world where the uranium oxide is used in the generation of electricity in nuclear power utilities by countries in Central Europe, North America and South-East Asia. Rössing is one of the largest open pit uranium mines in the world; with solid reserves, it will continue to serve the world nuclear energy industry. The mine currently produces about 7.55% of the world’s uranium.

Rössing is part of the Rio Tinto Group of companies, which currently holds 68.6% of Rössing’s equity.

At the heart of Rössing Mine are its more than 800 employees of whom 96% are Namibian citizens. The mine’s most important objectives are that all employees work without any safety-related incidents; maintaining excellent levels of health and following sound environmental management practices.

Working closely with the Arandis community the Rössing Foundation strives to ensure an economically independent and self-sustaining town.

Mining: Drilling, blasting, loading and haulage recover the uranium ore at Rössing. Due to erratic distribution of minerals in the ground, waste and ore are often mixed together. Radiometric scanners measure the radioactivity level of each truckload. This determines
whether the material is sent to the primary crushers or to the low-grade stockpile. Waste is transported to a separate dump. The size of the open pit is 3 km long, 1 km wide and about 300 metres deep.

**Processing plant:** The Rössing uranium processing plant consists of the following unit operations:

- **Crushing and grinding:** ore is delivered to the primary crushers by haultruck and then by conveyor to the coarse ore stockpile. After a further series of crushers and wet grinding of the material by means of steel rods, a slurry is produced for leaching.
- **Leaching and slime separation:** a combined leaching and oxidation process takes place in large mechanically agitated tanks. The uranium content of the pulped ore is oxidized by ferric sulphate and dissolved in a sulphuric acid solution. Slimes are removed from the leached slurry via cyclones and washing in Rotoscoops to remove traces of uranium-bearing solution, before the sand is transported via a sand conveyer to a disposal area.
- **Thickening:** counter-current decantation (CCD) thickeners wash the slimes from previous stages. A clear uranium bearing solution (‘pregnant’ solution) overflows from no.1 thickener, while the washed slime is mixed with the sands and pumped to the tailings area.
- **Continuous ion exchange:** clear pregnant solution from the CCD is contacted with specially formulated resin beads, where uranium ions are adsorbed onto the resin and are preferentially extracted from the solution. Resin is removed periodically to elution columns where uranium is eluted using an acid wash to produce a purified and more concentrated uranium solution.
- **Solvent extraction:** the acidic eluate from the ion exchange plant is mixed with an organic solvent that which extracts uranium. In a second stage, the organic solution is mixed with a neutral aqueous ammonium sulphate solution which takes up the uranium-rich ‘OK liquor’. The acidic ‘barren aqueous’ solution is returned to the elution columns.
- **Precipitation and filtration:** the addition of gaseous ammonia to the ‘OK liquor’ raises the solution pH, resulting in precipitation of ammonium diuranate, which is then thickened to a yellow slurry. The ammonium diuranate is recovered on rotating drum filters as yellow paste—‘yellow cake’.

- **Drying and roasting:** final calcining drives off the ammonia, leaving uranium oxide. The product is then packed into metal drums.
- **Loading and dispatch:** the drums of uranium oxide are loaded and exported to overseas converters for further processing. At full capacity, the plant can produce 4 500 tonnes of uranium oxide each year.

REF: www.riotinto.com; www.rossing.com

**Post-conference technical visits**

**Thursday 26 July and Friday 27 July 2007**

Technical tours will be organised to the following mines. Due to flight number restrictions and mine restrictions, the technical visit registrations have now closed as the numbers have been exceeded.

**Tour price:** R2 500.00 **Ongopolo (Tsumeb) — 26 July 2007**

**Tour price:** R3 000.00 **Skorpion Zinc and Rosh Pinah Mine (Rosh Pinah) — 26 July 2007**

**Tour price:** R5 000.00 **Skorpion Zinc and Rosh Pinah Mine (Rosh Pinah) — 26 July 2007**

and

**Ongopolo (Tsumeb) — 27 July 2007**

**Rosh Pinah Mine**

Situated in south-western Namibia, 800 km south of Windhoek, this is an underground mine employing approximately 540 people. The mineral deposit occurs in complex structural settings, favouring silling and benching mining methods.

- The mine has continually sought to increase operational efficiency and de-bottleneck processes have increased current production to 126ktpa of zinc concentrates, fully sold to Exxaro’s zinc refinery at market-related prices. The lead concentrate is sold to international customers.
- Intensive on-mine exploration is underway to add to the total mineral resource of 7Mt. The current economic mine life of six years is based on zinc concentrate production of 120ktpa. Limited exploration is also being conducted on targets outside the immediate mine area and the mine has
entered into an exploration agreement with Ambase Exploration (Namibia) (Pty) Limited which will allow the two companies access to select areas under each other’s prospecting permits for exploration.

Exxaro holds 89.5% in Rosh Pinah, with Namibian empowerment groupings holding the balance. Negotiations are underway to divest of a further 39.5% to Namibian empowerment groupings. This will reduce Exxaro’s shareholding in Rosh Pinah to 50% but the group will continue to manage this operation.

REF: www.exxaro.com

Skorpion Zinc

Situated 25km north of Rosh Pinah in southern Namibia, Skorpion Zinc is a world-first in zinc extraction and production. 150 000 tons of special high grade (SHG) zinc is produced per annum, which is shipped to worldwide markets through the southern port of Luderitz. Anglo American attained 100% ownership of the Skorpion deposit and the project was approved by the board of AA plc in September 2000 at a capital cost of US$454 million. Construction of the world-class Skorpion Zinc mine and refinery commenced in January 2001.

In keeping with the vision to ‘establish Skorpion Zinc as the leader of excellence in the global zinc market’, the mission remains to ‘maximize production, in both quality and quantity, in a safe and responsible manner through efficient processes and empowered people’. At Skorpion, a high premium is placed on the continuous development and empowerment of the workforce, while keeping in line with the latest technological innovations to ensure the supply of discerning world markets with the high quality product to which they have become accustomed.

Geology: the Skorpion orebody is unique and comprises an oxide deposit due to intense weathering of previous zinc sulphide ore minerals. Limestone is inter-fingered with the zinc-oxides to form a very complex body. Integrated grade control is required for selective mining. The resource contains > 20 million tons of zinc ore at a grade of 11%, resulting in ± 2.2 million tons of zinc.

Mining: the essential grade control requires regular liaison between Mining and the

Refinery. the mine will extract on average 1.5 million tons of ore per annum from the open pit with 10 m bench heights. A combination of blasting and hydraulic excavation is used to expose the ore for hauling with a fleet of 5 tipper trucks. The final shape of the pit is to be 1 km long x 800 m wide. The entire mining fleet is maintained on site.

Refinery: The Skorpion Zinc Refinery comprises of the following circuits:

- **Comminution and tailings**: zinc ore and limestone, from mining, are crushed and milled. The products are thickened for feeding into the leach and neutralization circuits respectively. The residue from the refinery process is sent by conveyor belt in a cake form to the tailings dump some 3 km away.
- **Leaching and purification**: the zinc ore is leached with sulphuric acid, followed by neutralization for impurity removal. Residue is sent to the tailings dump, while pregnant leach solution (PLS) is fed to the solvent extraction circuit. A portion of the PLS is fed to the Cu/Ni cementation circuit.
- **Acid plant**: the sulphuric acid plant is a sulphur-burning plant, producing two types of acid i.e. industrial and chemically pure acid. The waste heat generated from the acid plant is used to produce steam and keep the refinery at temperature. There are also two 14MW electrode boilers to produce steam if the acid plant is down at any time.
- **Solvent extraction (SX)**: Zn is extracted from the PLS in the SX circuit using mixer-settlers. SX raffinate (Zn diminished solution) is recycled to the leaching circuit. Loaded organics, after chemical and mechanical washing to remove impurities, are stripped with electrolyte to produce a loaded electrolyte for electrowinning. HCl is used to regenerate the organics, which are reused. A reverse osmosis plant provides demineralised water.
- **Electrowinning**: this section uses large amounts of electrical power (90MW) to plate zinc out of the loaded electrolyte solution and onto solid cathodes. The cathodes produced are of special high grade quality (99.995% pure zinc).
- **Cast house**: the zinc cathode sheets stripped out of electrowinning are fed into melting furnaces. From here ingots or jumbo forms are cast for sale to the international markets.

REF: www.skorpionzinc.com.na

Ongopolo Mining and Processing Ltd

Weatherly International assumed management of Ongopolo Mining and Processing Ltd in April 2006 under an interim management agreement pending completion of the acquisition
three months later. In acquiring Ongopolo, Weatherly has gained a highly skilled and experienced workforce of some 1200 people. This in itself represents an extremely valuable long-term asset as the company continues to build a world-class mining and processing company in Southern Africa.

All of Ongopolo’s operations are located along a strategically important and efficient transport route in southwest Africa, stretching from the port of Walvis Bay on the Atlantic coast to the major copper producing areas of Zambia and DRC.

The company’s main operating assets currently consist of three mines, three concentrators and a smelter. The Otjihase and Matchless mines are located in central Namibia close to the capital Windhoek, while the Kombat mine and the nearby smelter at Tsumeb are in the north of the country. In addition, a new underground mine, Asis Far West, is being developed to replace the declining Kombat mine. An 800-metre shaft has been completed at Asis Far West and lateral development of the main orebody is underway. Other development projects include the Tsumeb West and Tschudi mines.

Weatherly has a number of promising exploration projects, including copper deposits at Gross Otavi Central and below the Farm Berg Aukas lead/zinc mine; Harasib, where three zones of lead and zinc mineralization have been delineated; and an interest in the Valencia uranium deposit in western Namibia.

The Tsumeb copper smelter, comprising three furnaces, is a key asset. The current operating capacity of the first smelter is 24,000 to 32,000 tons per annum, while the second, larger copper furnace and the zinc furnace require refurbishment. Weatherly intends to examine the feasibility of expanding Ongopolo’s smelting capacity significantly in the future, which could eventually enable it to process much larger volumes of ore concentrates from other mining companies in the region, and potentially from its own extensive Luanshya deposit in Zambia.

REF: www.weatherlyplc.com

Accompanying person’s programme

Cost to register and participate in the accompanying person’s programme is R1 500.00. This price includes all conference lunches and social events, but not the technical visits. Each accompanying person will receive a gift, programme and name tag. Please consult our website for a range of private tour operators that can organise tours for you.
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- 60 km/h on a public road within an urban area (may be lifted to 80 km/h on some major urban roads).
- 120 km/h on every tarmac freeway.
- 80–120 km/h on non-tarmac freeway ('gravel' road).

**Standard time**
Time difference for Namibia, when you are in: USA East +6 hours, USA West +9 hours, Great Britain +1 hour, Nigeria +0, South Africa -1 hour, India -4 1/2 hours.

**Tipping**
Tipping is expected only in upmarket tourist establishments where a service charge is not included. In this case, a 10% tip is suggested. Tipping is officially prohibited in national parks and reserves. Haggling for local handicrafts at roadside stalls is quite acceptable.

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Countries whose nationals do require a visa include:
- All countries not shown above.
- Zimbabwe for business puposes.

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