The Australian Centre for Geomechanics is the founding body for this seminar series and
The Southern African Institute of Mining and Metallurgy is the hosting and organising body

15th International Seminar on Paste and Thickened Tailings
16-19 April 2012 · Sun City, Pilansberg, South Africa

Second Circular
INVITATION MESSAGE FROM THE ORGANISING COMMITTEE

ORGANISING COMMITTEE

CONFERENCE SECRETARIAT

KEY DATES

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CONFERENCE VENUE

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Waiver of liability

MAP OF SUN CITY

DIRECTIONS TO SUN CITY
Invitation message from the Organising Committee

Demand for resources continues unabated in spite of global economic uncertainty, and the mining industry remains bullish on the future. As economies falter, strong and sustainable industry is needed to provide underlying support; however the mining business is seen to be an easy target to garner additional fiscal revenue, evidenced by increasing taxes and royalties. This puts continued pressure on mining companies to contain costs, and can possibly lead to unintended consequences as they seek more forgiving regimes in which to develop new business.

Certainly it is clear that there is a great demand and rush for resources in Africa and the mining industry is providing much needed capital and employment in the developing countries. In developing new mines in developing nations, it is imperative that global mining companies continue to apply international best practice and so retain their ‘social license’ to operate elsewhere. Poorly executed projects with no regard for long term mine closure cannot be allowed to proliferate where a blind eye is turned by regulatory authorities and owners. It remains the responsibility of owners, operators and engineers to continue to strive for best practice when mining.

This series of seminars seeks to do just that; provide a forum for the development of best practice in the management and disposal of mine waste using the most appropriately engineered solutions. The event has come a long way since the first seminar in 1999 and the annual meetings provide the opportunity for robust debate on the technology. It is timely that the event returns to Southern Africa for the fourth time as mining is clearly seen to be a major agent for economic change in the Africa. The benefit of this influx of capital cannot be short lived and the ongoing legacy of projects must be to ensure social upliftment and continued environmental stewardship.

Paste 2012 is the fifteenth seminar in the series and highlights the current innovative thinking in the industry. The advances in polymer technology are providing unique ways to dewater materials at the discharge and this is likely to play a major role in the future. Several papers deal with the issue of the slope of the beach on the deposition site, and healthy debate is expected during the special session on this topic. Many new case studies show that more and more practitioners are adopting, or considering, the placement of highly dewatered tailings, and there is a great deal of interest in the behaviour of these material in the pump and pipeline system. As this technology matures, new technical challenges arise, and the boundaries continue to be explored to find engineering solutions.

The local organising committee is extremely thankful to all the authors for their contributions and efforts to produce the papers, and would also like to thank all those who generously offered their time to review the papers and provide constructive feedback to the authors. We would also like to thank the Australian Centre for Geomechanics for their support and assistance in the hosting of this event and the publication of the proceedings.

Of course, our sponsors play a key role in making these events especially memorable, and no event is possible without their generous support. Thank you.

Angus Paterson
Chairman, Local Organising Committee
**Organising Committee**

Angus Paterson (Chairman)
Andy Fourie  Ted Lord
Richard Jewell  Andrew Vietti

**Conference Secretariat**

Jacqui E’Silva, Head of Conferencing
The Southern African Institute of Mining and Metallurgy
P O Box 61127, Marshalltown, 2107, South Africa
Tel: +27 11 834 1273/7 · Fax: +27 11 838 5923 or 833 8156
E-mail: jacqui@saimm.co.za · Web: http://www.saimm.co.za

**Key dates**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Workshop</td>
<td>16 April 2012</td>
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<tr>
<td>Seminar</td>
<td>17–19 April 2012</td>
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<tr>
<td>Technical Tour</td>
<td>20 April 2012</td>
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**Registration**

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

**Registration fees**

<table>
<thead>
<tr>
<th>Category</th>
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<tbody>
<tr>
<td>General</td>
<td>R9 400</td>
</tr>
<tr>
<td>Author/presenter</td>
<td>R7 700</td>
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<tr>
<td>Committee</td>
<td>R7 700</td>
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<tr>
<td>Academic</td>
<td>R6 500</td>
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<tr>
<td>Student</td>
<td>R2 500</td>
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All prices include VAT. Tax invoices will be issued to all delegates.

**Please note that delegates will be permitted to attend the conference only if their registration fees have been paid.**

**Cancellation**

A 50% refund will be given for cancellations received before 5 April 2012. No refunds will be given for cancellations after 5 April 2012.
Conference venue

Nestled in the rolling hills of the Pilanesberg, one of South Africa’s most scenic locations, Sun City is a world unto itself and has earned its reputation as Africa’s Kingdom of Pleasure.

You will find whatever you want at Sun City, from sizzling entertainment, world-class casinos and restaurants to cater for all tastes, to the more relaxed poolside venue, quiet places, lush gardens, and extensive sporting facilities including two world-class golf courses. These are just some of the elements that make Sun City unique among the world’s entertainment resorts.

Finally rediscovered and now part of Sun City, the Lost City and the Valley of Waves, fabled to be the ruins of a glorious ancient civilisation, celebrate and bring to life the legends of this mystical city.

The Lost City is internationally applauded for its wonderfully imaginative theme and exquisite landscaping while the fantastic Valley of Waves is one of the world’s most exciting waterparks.

The conference will be held in the Pilanesberg B Omega room in the Conference Centre at Sun City.

Preliminary conference programme

The technical programme comprises opening and closing addresses from invited and designated keynote speakers, as well as papers, listed below, which have been provisionally accepted.

Keynote Speakers:

P. Ashton
A. Fourie, *The University of Western Australia, Australia*
Dr A. Turton, *Environmentalist, South Africa*

Papers:

Thickening technology—BASF New Flocculant Treatment (NFT) in dynamic thickening operation
S. Adkins*, A. Berger*, G. Brodt†, J. Muhor* and I. Flanagan*, †*BASF Germany and †BASF United Kingdom* (Paper 49)

Measurements on freshly-deposited surfaces of two platinum tailings dams
Pilot plant pipe line tests on thickened tailings. To determine the effect of pumping distance on solid segregation
P. Chacón and S. Barrera, ARCADIS Chile (Paper 09)

Towards an integrated approach to tailings management
A. Chryss*, A. Fourie†, A. Mönch*, D. Nairn* and K. Seddon‡, *CSIRO Process Science and Engineering, †University of Western Australia and ‡ATC Williams, Australia (Paper 14)

Thickener experiences at Langer Heinrich Mine
M. Cooks, D. Mostert, L. Coetzee and D.J. van Schalkwyk, Langer Heinrich Mine, Namibia (Paper 46)

Flocculant testing through the application of experimental design techniques and the application of a flocculant pipe reactor
M. Cooks and B. Plaatjies, Langer Heinrich Mine, Namibia (Paper 47)

The performance of centrifugal pumps when pumping ultra viscous paste slurries
J. Crawford*, F. van Sittert† and M. van der Walt*, *FLSmidth Krebs, United States of America and †Paterson & Cooke Consulting Engineers, South Africa (Paper 10)

Contribution of desiccation to monotonic and cyclic strength of thickened gold tailings: Not the same as over-consolidation
F. Daliri, H. Kim, P. Simms and S. Sivathayalan, Carleton University, Ottawa, Canada (Paper 43)

Khumani Iron Ore Mine paste disposal and water recovery system
T. Du Toit*, M. Crozier† and G. De Swart*, *Khumani Iron Ore Mine ASSMANG, †WesTech Process Equipment Africa (Pty) Ltd and ‡Geotail, South Africa (Paper 24)

Evaluation of the behaviour of high density tailings deposition—CODELCO Pilot Plant
J. Engels*, G.J. McPhail†, R. Jamett* and C. Pavissich†, *Knight Piésold S.A, Chile †SLR Consulting Australia Pty Ltd, †CODELCO-VP, Chile (Paper 32)

Relating Atterberg Limits to rheology
T.G. Fitton, K.D. Seddon, ATC Williams, Australia (Paper 12)

Perceived and realised benefits of paste and thickened tailings for surface deposition
Defining and quantifying sustainable backfill
D. Green*, Z. Martic†, B. Knight‡, J. Jones*, Admixture Systems, BASF, USA, MEYCO Global Underground Construction, Switzerland, MEYCO Global Underground Construction, Canada (Paper 54)

Pasta pumping with rolling rotor design peristaltic hose pump
J. Häkkinen*, A. Clark†, W. Chabant‡ and S. Sims*, Flowrox Oy, Finland, Flowrox Inc., USA, Flowrox (Pty) Ltd, The Republic of South Africa (Paper 21)

Solids transport of non-Newtonian slurries in laminar open channel flow
R.H. Hernández, Universidad de Chile and R.H. Fuentes, Chile (Paper 04)

Putting beach slope prediction into perspective
R.J. Jewell, Australian Centre for Geomechanics, Australia (Paper 05)

Application of hydrocyclone technology to tailings storage facilities to reduce water consumption
M.A. Knight*, J.A. Wates* and I. Du Plessis†, Fraser Alexander Tailings and Hatch, South Africa (Paper 33)

RadFlow™—The next generation feedwell
A. Krassnokutski, Roymec Technologies (Pty) Ltd, South Africa (Paper 53)

Tailings initial consolidation and evaporative drying after deposition
A.L. Li*, K. Been†, D. Fredlund*, I. Wislesky*, T. Eldridge† and D. Williams†, Golder Associates Ltd, Canada, Golder Associates S.A., Chile and Golder Associates (Pty) Ltd, Australia (Paper 17)

A new approach to fine solids dewatering
C. St.J. Lowe, Process Dewatering, Weir Minerals Australia (Paper 37)

Important considerations in the testing of high density tailings for beach profile prediction
G.I. McPhail*, M. Becerra† and S. Barrera†, SLR Consulting Australia Pty Ltd, ASMIN, Chile and ARCADIS, Chile (Paper 18)

Thickened tailings: A water and energy consumption perspective
J.H.L. Möller*, A.J.C. Paterson†, T. Verbeek†, Paterson & Cooke Consulting Engineers and Anglo American Kumba Iron Ore, South Africa (Paper 26)

Thickened tailings water balance: dealing with excess water
J. Moreno and J. Martin, SRK Consulting, Australasia (Paper 28)

Advanced diaphragm pumps with unique technical and commercial quality rating for operating pressures up to 500 bar
H.M. Nägel, FELUVIA Pumpen GmbH, Germany (Paper 35)

Design and development of a novel thickener feedwell using computational fluid dynamics
T.V. Nguyen*, J.B. Farrow*, J. Smith† and P.D. Fawell*, *CSIRO Australia and †Anglo American, South Africa (Paper 08)

Accelerated consolidation of soft clays and mine tailings using a desktop centrifuge
D. Reid†, A.B. Fourie*, S. Watson*, *University of Western Australia and †Golder Associates Pty Ltd, Australia (Paper 22)

The effects of synthetic flocculants on some geotechnical properties of kaolin clay
D. Reid† and A.B. Fourie*, *University of Western Australia and Golder Associates Pty Ltd, Australia (Paper 30)

Advances in thickened tailings pumping using centrifugal pumps
A. Sellgren, Lulea University of Technology, Sweden (Paper 06)

Thickening of tailings using hydro cyclones operating under vacuum conditions
G.J. van Ryssen and P.L. Steenkamp†, *Cyclone Projects and Consulting, South Africa and †AngloGold Ashanti Limited, Senegal (Paper 51)

Social functions
Monday 16 April 2012
Cocktail party and pre-registration
This function will serve as an ‘ice breaker’ for delegates who register early for the conference, and will take place in the Bowling Green at Sun City. Please indicate your attendance on the registration form for catering purposes. Wine, malt, and soft drinks will be served.
Time: 17:00–20:00 Dress: smart casual

Tuesday 17 April 2012
Barbeque at the Valley of the Waves
The barbeque, which is the primary social function, will be held at the Valley of the Waves. In
the spirit of the venue, this function will be a barbecue on the ‘beach’. Wine, malt and soft 
drinks will be served. A cash bar will be available. Please indicate your attendance on the 
registration form for catering purposes.
Time: 18:00–20:00
Dress: Casual, beachwear
Cost: included in conference registration fee.

**Wednesday 18 April 2012**

**Seminar dinner in the Shebeen**

Join us for a truly South African Experience in an African location. Sample African music and
cuisine at an evening of fun and entertainment. Please indicate your attendance on the 
registration form for catering purposes.
Time: 18:00–20:00
Dress: smart casual
Cost: included in conference registration fee.

**Thursday 19 April 2012**

**Networking cocktail party.**

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**Sun City—Resort Facilities Guide**

**THE CASCADES**

**CASCADES AVIARY**
Located next to the tennis courts, the aviary consists of more than 300 recorded bird species 
found throughout the resort gardens. Open daily 07:00–16:30.

**GARY PLAYER COUNTRY CLUB**
Home to the annual Nedbank Golf Challenge. For golf reservations please call 014 557 1245.
The Gary Player Restaurant (014 557 5910) is open for breakfast and lunch and the bar is 
open from 06:30 to 19:00. The golf course is closed on Mondays.

**JOGGING TRAILS**
Maps are available from the concierge desk for the 3km and 5km jogging trails around both 
the Lost City and Gary Player golf courses. The trails are all very scenic and well marked 
according to distance and direction.

**HEALTH SPA**
The Health Spa is located at the Gary Player Country Club.
The health Spa: Open daily 08:00–20:00 · Gym: Open daily 06:00–20:00.
Hair Studio: Open daily 10:00–19:00. For more information please contact 014 557 5280.

**PENINSULA RESTAURANT**
Enjoy dinner in a luxuriously elegant lakeside restaurant.
Breakfast Monday—Sunday 06:30–11:00 · Dinner Monday—Sunday 18:30–23:00.
(Last seating at 22:30). For more information please contact 014 557 5210.

**SEGWAY SAFARI**
Human transporters: the newest way to see Sun City! An experience with a difference.
Situated next to the tennis hut at the Cascades.
For more information please contact 014 557 4052.

**SWIMMING POOLS**
The Cascades features the Grotto swimming pool, the Grotto Whirlpool and the children’s swimming pool (for residents only.)
Open daily Summer 09:00–18:00 — Winter 10:00–17:00.

**SQUASH**
There are two squash courts situated at the Gary Player Country Club. Reservations can be made on 014 557 5900 between 06:30 and 18:30, however the courts remain open until late evening.

**TENNIS COURTS**
Eleven tennis courts, of which five are floodlit, are situated below the Cascades. Coaching is available. Open daily 07:00-18:00. For more information please contact 014 557 5710.

**VISTA BAR**
Situated at the Cascades Terrace. Pianist entertainment between 16:00 and 18:00 (except Mondays). Light snacks are served at Vista Bar during the day.
Summer 08:00–24:00 · Winter 08:00–23:00.
For more information please contact 014 557 5150.

**SANTORINI RESTAURANT**
Situated at the Cascades pool. Santorini Restaurant offers a fusion of Mediterranean and Greek cuisine. Operating times:
Poolside Service: 09:00–18:00 (daily)
Restaurant: Sunday & Friday 12:00–16:00 · 18:00–23:00
Saturday & Public Holidays 12:00–23:00 · 18:00–23:00
For more information please contact 014 557 5850.
CALABASH RESTAURANT
The Calabash offers traditional South African fare. Tel 014 557 5720.
Open daily 17:30–23:00.

EXTRAVAGANZA
Situated at the Sun City Hotel—our world famous Extravaganza Theatre hosts show spectacles that are a must-see. For more information and bookings, please contact 014 557 1669. Show times: Tuesday–Friday 20:30 · Saturday 18:30 & 21:00 · Sunday 15:00.

FOREIGN EXCHANGE FACILITY
For traveller’s cheques and foreign currency exchange transactions, visit Cash Desk in the Harlequins Casino. Open daily 24 hours per day. For enquiries, please call 014 557 1066.

HARLEQUINS COCKTAIL BAR
This exciting bar features a great selection of traditional cocktails and shooters and is ideal for pre-dinner drinks. Call 014 557 5120. Open 24 hours 7 days a week!

HARLEQUINS RESTAURANT
Harlequins Restaurant, situated inside the smoking Casino area, offers only the freshest and best ingredients, which are prepared in a contemporary classical culinary style.
Open daily: Sunday–Thursday 19:00–23:00 · Friday and Saturday 19:00–24:00.
For more information please call 014 557 5120.

HARLEQUINS CASINO
Harlequins Casino is now a smoking facility, which consists of three areas. Slots and tables area. The Privé and the exclusive International Room. This area is for Tables Players who wish to play high limit games. Tables game types on offer are American Roulette, Blackjack, Stud Poker and Punto Banco.

HEAVEN KIOSK
For a selection of delightful local and imported sweets and chocolates and other goodies, visit this side of heaven.
Open daily: Sunday to Thursday 10:00–22:00 · Friday 10:00–24:00 · Saturday 10:00–02:00.

MOST VALUED GUESTS (MVG)
Please enquire at the Casino or Slots MVG desk situated in the Sun City Hotel for information on our Most Valued Guest Program. Telephone 014 557 3663 / 1068.

NON-SMOKING CASINO
The casino consists of Tables and Slot machines. Tables game types on offer are American Roulette, Blackjack and Stud Poker. Slots range from 10c to R5.
THE ORCHID RESTAURANT
The Orchid features a distinctive oriental menu, offering a range of authentically prepared dishes, flavours and textures from many Asian countries. Open daily 18:00–23:00 · Sushi Bar open Tuesday–Saturday For reservations, please call 014 557 5100.

POOL BAR AND GRILL
An informal poolside bar with a light snack menu available. Weekend barbecue Saturday and Sunday between 12:00 and 16:00. Open daily 09:00–18:00.

SUN TERRACE RESTAURANT
This ideal breakfast and lunch venue in tranquil surroundings offers an extensive breakfast and lunch buffet. Open seven days a week. Breakfast 07:00–11:00 · Lunch 12:30–15:00 For more information, please call 014 557 1211.

THULA BABA BABYSITTING SERVICES
For day and night professional babysitting services as well as supervised outings for all hotel guests. Sundays till Thursdays 10:00–00:00 · Fridays and Saturdays 10:00–02:00 For more information please call 014 557 5800 / 5811.

CABANAS
ANIMAL WORLD
An enclosure representing a typical South African farmyard is situated opposite Kamp Kwena on the Cabanas Lawns. Enjoy this activity free of charge!

BUMPER CARS
Kiddies under 8 years of age can enjoy the thrill of riding around our mini racecourse in their very own car. The Bumper Cars are situated at Waterworld next to the Mini Golf Course. For more information call 014 557 5880. Summer 09:30–18:00 · Winter 09:30–17:30

CABANAS POOL BAR
Situated on a terrace overlooking the swimming pool. Open seven days a week! Summer: Sunday–Thursday 10:00–19:30 · Summer: Friday–Saturday 10:00–20:30. Winter: Friday–Sunday 10:00–19:00.

FINDERS KEEPERS
Let the kids find their treasures in the Finders Keepers scratch patch. Great prizes to be won. Summer 09:30–18:00 · Winter 09:30–17:30.
THE FAMOUS BUTCHERS GRILL
This restaurant specialises in steaks and other meat dishes.
Open seven days a week for lunch and dinner 12:00–22:00.
For reservations please call 014 557 5750.

HORSE RIDING
Facilities are available for trails and lead rides.
The stables are situated just beyond the Sun City Cabanas, off the main road.
For bookings and more information please call 014 557 5140.
Open daily 09:00–12:00 & 14:00–17:00.

KAMP KWENA
Supervised activity programme for all our young Sun City guests.
Fun for kids aged 2–12 years old (seasonal period) and 4–12 years old (out of season period).
For more information please contact 014 557 4136.

MINI GOLF
All the future golfing enthusiasts can practice their puts on our mini golf course at
Waterworld.
For more information, call 014 557 5880. Summer 09:30–18:00. Winter 09:30–17:30.

PALM TERRACE
Full breakfast buffet set amidst lush garden greenery.
Breakfast Monday–Friday 07:00–11:00 · Saturday–Sunday 07:00–12:00.
For daily themed dinner menus and more information, call the Cabanas Guest Relations Desk
on 014 557 1580. Closed for dinner between May and August.

STIMELA THE STEAM TRAIN
Choo Choo! Join us for a ride on our very own steam train. This facility is fun for the whole
family and is situated at the Waterworld. Tickets can be purchased at Finders Keepers.

TREASURE ISLAND SNACK BAR
Situated at Waterworld and offering a variety of snacks such as toasted sandwiches,
hamburgers, steak rolls, pies, pizzas and ice cream.
Summer 10:00–18:00 · Winter 10:00–17:30

THE SOUTH AFRICAN NATIONAL BIRDS OF PREY CENTRE
Experience the magic of birds of prey flying freely in their natural environment with our free
flying displays. Flying times: 10:00 and 15:00 · Saturday to Thursday (weather permitting).
TRAMPOLINES
The trampolines are situated on the banks of Waterworld. This fun activity for the whole family is free of charge and can be enjoyed at any time.

WATERWORLD
For fun water activities, including jet-skis and para-sailing! The Waterworld Beach Shop also offers beachwear, sportswear and curios.
Open daily: Summer 09:30–18:00 · Winter 09:30–17:30.
For more information please contact 014 557 5880.

WATERWORLD CRUISE
Enjoy a 30-minute complimentary cruise at Waterworld every day, commencing at 12h00 and 16h30. First come first served.

THE ENTERTAINMENT CENTRE
LOWER LEVEL
CAFÉ SCALINI
Delicious snacks and cakes can be enjoyed in this continental cafe-style coffee shop.
Summer: Sunday–Thursday 07:00–20:30 · Friday and Saturday 07:00–21:30.
Winter: Monday–Thursday 08:00–19:00 · Friday–Sunday 08:00–21:00.
For more information please contact 014 557 1166.

THE BINGO LOUNGE
Situated in the Entertainment Centre, with good old-fashioned call Bingo.
Wednesday–Friday 16:00–01:00 · Saturday 13:00–03:00 · Sunday 12:00–00:00

DHL
Centrally located, however, sufficiently private for handling professional business requirements. Monday to Saturday 08:00–17:00.
Sundays and Public Holidays 09:00–13:00.
For more information please contact 014 557 1911.

CHILDREN'S GAMES ARCADE
Here kids can entertain themselves with video games and other fun activities.

CNA
For all your stationery requirements or the daily paper, visit this stationery store.
Telephone 014 557 5020. Open daily: Monday 08:30–20:00.
Tuesday–Saturday 09:00–22:00 · Sunday 09:00–19:00.
FIREARM DROP OFF
Remember to keep your gun firearm in safekeeping. Firearms can be handed in at the Firearm drop off point to the right of the Entrance to the Entertainment Centre.

SUN CITY PHARMACY
For all your medicinal, photo and beauty care needs, visit the Sun City Pharmacy.
Telephone 014 557 5030. Open daily: Monday to Friday 09:00–22:00
Saturday 09:00–22:30 · Sunday 10:00–22:00

UPPER LEVEL
FAST FOOD VILLAGE
There are a number of fast food outlets in the Entertainment Centre. Among them you will find: Little Leonard’s Pizza Express – telephone 014 557 4512
London Pie Company / Sizzling Sausage – telephone 014 557 4516
Nando’s – telephone 014 557 4507
Juicy Lucy – telephone 014 557 4513
Milky Lane – telephone 014 557 4509
Something Fishy – telephone 014 557 4506
Wimpy – telephone 014 557 4505

CLUB CHIRP
Teenagers age 12-17 years — Time: 19:00–24:00
The Chirp Parties have found a new home! Under 18 parties have never been this fun! Join the Chirp. DJ and dance the night away! Located in the Entertainment Centre.
Telephone 014 557 4884.

KAMP KWENA CRECHE
Variety of facilities are available allowing parents peace of mind with the knowledge their little one’s are well taken care off. For more information contact 014 557 5800.
Open daily: Sunday to Thursday 10:00–00:00 · Friday and Saturday 10:00–02:00

MOVIE ZONE
See a movie in air-conditioned comfort. Call 014 557 5290 for more information on the starting times and forthcoming attractions at Sun City.

TRADER HORN’S ACTION BAR
A sports bar with big screen sports action often offering special promotions and live entertainment! Monday to Friday 17:00 till late · Saturday and Sunday 12:00 till late.

SILHOUETTE
This club provides various types of homegrown entertainment creating a vibe with some of SA’s top DJ’s. Open 22h00 till late

**THE VALLEY OF WAVES**

**BOTANICAL GARDENS**
Take a walk in our beautifully landscaped gardens situated in the Valley of Waves. Each trail covers a different habitat and many bird and plant species can be viewed.

**THE VALLEY OF WAVES**
The Valley of Waves is one of the most exciting water theme parks to be found anywhere on earth—from the huge rolling waves in the wave pool to the death defying water slides plunging down the mountainside.
Enjoy a gentle sloping tropical palm-fringed beach and Adventure Mountain is kids paradise with waterslides and pools where they can play or explore in safety. Our team of expert life guards patrol the Valley of Waves. The Lazy River circles the Food Court where a variety of fast foods are available to satisfy your appetites while having fun in the sun. Rental facilities include lockers, beach towels and umbrellas.
For more information please contact 014 557 3444 / 3464 / 3474.
Open daily. Summer 09:00–18:00 · Winter 10h00–17h00

**WELCOME CENTRE**

**AVIS**
For all car rental requirements: Monday to Friday 08:00–17:00
Weekends and Public Holidays 09:00–12:00
For more information please contact 014 557 1584.

**GAMETRACKERS**
Wildlife activities, Elephant Back Safaris, Outdoor Adventure Centre and Hot Air Balloon Safaris.
For bookings and information on game drives, hot air balloon safaris, elephant back safaris and hiking trails as well as quad bikes, archery, clay pigeon shooting and drumming, please contact Gametrackers on 014 557 5830.

**INFORMATION**
For all Palace Tours, Garden Walks and other tours as well as Eco Tourism activities, contact the Welcome Centre Information Desk on 014 557 1544 / 3382. Rental facilities include showers, lockers and prams.
Public telephones and vending machines are also located here.
Hours of Operation: Sunday–Thursday 09:00–23h00 · Friday & Saturday 09:00–01:00
KWENA GARDENS CROCODILE SANCTUARY
This is one of South Africa’s largest crocodile farms and is home to over 300 Nile crocodiles. Curio shop and coffee shop available. Feeding time is 16:30 · Open daily 10:00–18:00 For more information please contact 014 557 5300.

MOTSENG CULTURAL VILLAGE AND SHEBEEN
Sun City offers a superb African experience at the Cultural Village, situated between the horse riding centre and the Crocodile Sanctuary. The Village people at Sun City highlights the history of eight different South African tribes and daily tours are conducted incorporating song, dance and food. For more information contact them on 014 557 5010.
Butterfly World—Discover a magnificent range of Butterfly species in their environment.
Helicopter Flip—Enjoy scenic flights in a helicopter. The helicopter can take 5 people on a flip at a time. For bookings call 014 557 5010.

PRIVATE TRANSFERS
For all your private transfers, including limousine hire, call 014 557 3421.

SHUTTLE SERVICES
For bookings and information on our shuttle services:
Sun City to Johannesburg, please call 014 557 4488.
Sun City to Eastgate Shopping Mall call 014 557 1648.
Sun City to Menlyn Shopping Centre on 014 557 1648.

THE BOKOMO PRONUTRO ZIP 2000
The world’s longest, highest and fastest Zip line is now available at Sun City. It is 2 km long and you can reach a speed of 120 km /h. Bookings can be made at the Welcome Centre on 014 557 1544.

TO ALL DISABLED GUESTS
Although every effort has been made to accommodate wheelchairs in all areas of the resort, some areas remain difficult to access. Please contact your Concierge to enquire about the facilities you are planning to visit to avoid disappointment.

Technical Tour
Friday 20 April 2012
Khumani Mine—Northern Cape: Thickened tailings disposal site
This tour is limited to 25 people.
Khumani Iron Ore Mine, located near Kathu in the Northern Cape was commissioned in 2007.
The mine has recently completed construction of the Khumani Expansion Project which effectively doubled production.

Due to a severe shortage of water in the area, Khumani makes use of paste technology to reduce the loss of process water from the tailings deposition facility. The process is relatively unique in that use is made of a primary large diameter thickener at the process plant and a remote high rate thickener located at the deposition facility, approximately 6 km from the treatment plant. The primary thickener thickens the tailings stream to a density of 32% solids by mass. The tailings stream from the primary thickener is thickened by the secondary thickener to a density of 58% to 62% solids by mass.

Khumani is an open-pit operation and as such produces large quantities of overburden. The deposition facility has therefore been constructed as an impoundment with the outer wall formed by an engineered embankment constructed using waste rock or overburden in a phased process. Storm water is pumped off the facility by means of barges provided in each of the compartments to a transfer tank at the paste plant and then flows by gravity to the process plant for re-use.

Deposition behind the embankment is by means of a series of open-end deliveries off a ring feed located on the embankment. Deposition is cycled between deliveries to form an even beach and to maintain the pool position at the barges.

The Paste 2012 site visit will include the paste plant and the deposition facility.

Cost: R6 500 per person

Visit to Kruger National Park

- Package includes: Return airlink flights - Johannesburg / Nelspruit / Johannesburg - return airport transfers
- 4 nights accommodation at 5 Jock Safari Main Camp (Kruger Southern Lodge) in a luxury double suite, on a fully inclusive basis including two game drives

Cost: R18 000 per person sharing.

Please note delegates attending this tour should consult a doctor beforehand for prophylactics as the Kruger National Park is a Malaria and Yellow Fever area.

This tour is an added opportunity and is optional, the cost is for the delegates own account.

General information

Accommodation

Please note that special rates and block bookings have been negotiated at the conference.
venue. Kindly contact Sun International Central Reservations as per the enclosed accommodation reservation form, quoting the Group ID number (SAIMM1203 or SAIMM1201). Please note room vacancy is limited and may be subject to availability. Shuttles will be available to transport delegates from the hotels to the conference centre.

Banking / credit cards / foreign exchange
There are facilities at the Sun City hotels to exchange foreign currency. There are various automatic teller machines (ATMs) throughout the main premises. In all major centres in South Africa, there are banking institutions that are affiliated with international banks. Major credit cards are generally accepted throughout South Africa.

- American Express Tel: +27 11 359 0200,
- Diners Club Tel: +27 11 358 8400,
- Master Card and Visa Card Tel: +27 11 498 4699.

The following banks offer foreign exchange services: ABSA, First National, Nedbank and Standard. Banks and ATM machines are found in every city and in most towns. Several international banks have branches in the main cities. Most commercial banks are open from 09:00 to 15:30 on weekdays and 08:30 to 11:00 on Saturdays.

Car rentals

- **Avis Rent a Car**—Central Reservations
  Tel. (Intl): +27 11 923 3500, Fax (Intl): +27 11 923 3683, Toll-free: 08 000 21111

- **Budget Rent a Car**—Central Reservations
  Tel. (Intl): +27 11 392 3929, Fax (Intl): +27 11 392 3900, Toll-free: 08 600 16622

- **Europcar Interrent**—Central Reservations
  Tel. (Intl): +27 11 396 9000, Fax (Intl): +27 11 396 1406, Toll-free: 08 000 11344

- **Imperial Car Rental**—Central Reservations
  Tel. (Intl): +27 11 453 0005, Fax (Intl): +27 11 453 6278, Toll-free: 08 610 13100

As a rule, hired cars may not be driven across the border to other African countries.

Climatic conditions
April is early autumn in South Africa, with warm days and slightly cooler evenings. Delegates should pack a light jacket or pullover.

Currency
One rand (R) = 100 cents (c); Notes: R100; R50; R20; R10
Coins: R5; R2; R1; 50c; 20c; 10c; 5c
You are permitted to take R500 in SA rand notes out of the country; a levy is charged on the additional amounts.
Electricity supply
The electricity supplied in South Africa is 220 to 240 V (50 Hz)—3 x round pin 15 amp plug. Hotels usually provide dual voltage 2-pin razor sockets (100–120 V and 220–240 V).

Flight information
International flight times are available from the Airports Company of South Africa under Flight Info. Tel: +27 (011) 921 6262 or Fax: +27 (011) 921 6385. Website: http://www.airports.co.za

Information desk
An information desk will be staffed daily in the exhibition area from 07:30 to 17:30.

Language
The language of the conference will be English.

Internet messages and telephones
There is a business centre and Wi-fi accessibility at Sun City. The information desk in the conference office will take incoming messages for delegates. Delegates will be requested to pay for all outgoing calls.

Other accommodation
A National Accommodation Guide, available from SATour head office and most tourism associations, has been compiled in accordance with SATour’s National Grading and Classification Scheme. The guide contains details of accredited guest and country houses, bed and breakfast accommodation, star-rated hotels, serviced self-catering accommodation and private game lodges. In addition to the star grading allocation (one to five stars), exceptional services, hospitality and other intangible benefits are awarded a bronze or silver classification. Tariffs range from as little as R120.00 to as much as R2 000.00 per person per day.
See also: http://www.wheretostay.co.za; http://www.sa-venues.com

Speed limits
Freeways—120 km/h, urban roads—60 km/h. Drivers and all passengers must wear seatbelts. Drivers must carry their drivers’ licences at all times.

Standard time
Also known as Central African Time (CAT). There is no daylight saving in South Africa. Sunrise in October is 05:40 local time and sunset is at 18:15. CAT = GMT + 2 hours, or CET + 1 hour, or EST + 7 hours.

Tipping
According to service, but as a guideline: restaurants and taxi drivers = 10%, porters = R5.00 per piece of luggage.

VAT
The present rate of VAT (value added tax) is 14%, which is included in the cost of most items. On their departure, overseas delegates can claim back the VAT paid on some purchases taken out of the country. You will be required to produce a VAT invoice for those items where VAT is to be claimed back, at the airport of departure.

Waiver of liability
The conference organisers have taken all reasonable care in making the arrangements for the conference and technical visits. The organisers do not accept liability for any loss or injury sustained, or for unforeseen changes to the programme. The organising committee reserves the right to cancel any tour or visit due to insufficient interest.
SUN CITY RESORT MAP

Pilanesberg B Omega Conference Centre
RECOMMENDED ROUTE TO SUN CITY

OUTWARD BOUND
Travel north along William Nicol Drive to Fourways intersection at Witkoppen Road. Turn left into Witkoppen Road passing Fourways Mall on your right. Proceed for 8.5km to T-junction. Lion Bridge Supermarket is on the right. Turn left and take first right-hand turn. Proceed 2 km to T-junction, passing over the R268 freeway. Chicken farm is on your left. Turn right at the T-junction into R512. Carry on until the next T-junction (R37) passing Lanseria Airport turnoff. Turn left on the R512 to Magaliesburg. 9.4km further on, turn right (R512) towards Brits. Cross the railway line and onto the bridge over Hartbeespoort Dam. At the T-junction turn right (R512) to Brits. Travel to a major 4-way stop. Turn left towards Brits and Rustenburg. Pass the first turn-off to Brits. Travel straight on, passing Tropical Gardens on the right. Pass the R27 road on the right and the signboard: Sun City 89km. Travel straight on for approximately 10km until you reach the signboard: Sun City 79km. Turn right and cross over the highway, and you are on the direct road to Sun City.

HOMeward BOUND
Leaving the Sun City complex turn left and travel the direct route for 79km. At the T-junction turn left and travel towards the Hartbeespoort Dam for approximately 19km to the major 4-way stop. Turn right. Travel 9km and turn left on the R512 to Randburg crossing the bridge over the Hartbeespoort Dam. At the T-junction turn left (R27) to Pretoria, (R512) to Randburg. 9.6km further turn right on the (R512) to Lanseria Airport. Pass the Lanseria Airport turnoff and travel 3km and at that junction turn left. Proceed past the chicken farm on your right. Cross over the (R28) freeway to the T-junction. Turn left and then first right and proceed to the Fourways Mall.

DIRECTIONS FROM PRETORIA
Select N4, R27, R514 or R513 to the 4-way stop intersection just beyond the tunnel at Hartbeespoort Dam. Follow directions from this intersection as detailed on this route map.
The organisers of the conference wish to thank the following sponsors for their support.

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