

# SANCOLD ANNUAL CONFERENCE 2015

*"DAM SAFETY, MAINTENANCE & REHABILITATION OF DAMS IN SOUTHERN AFRICA"*



SANCOLD

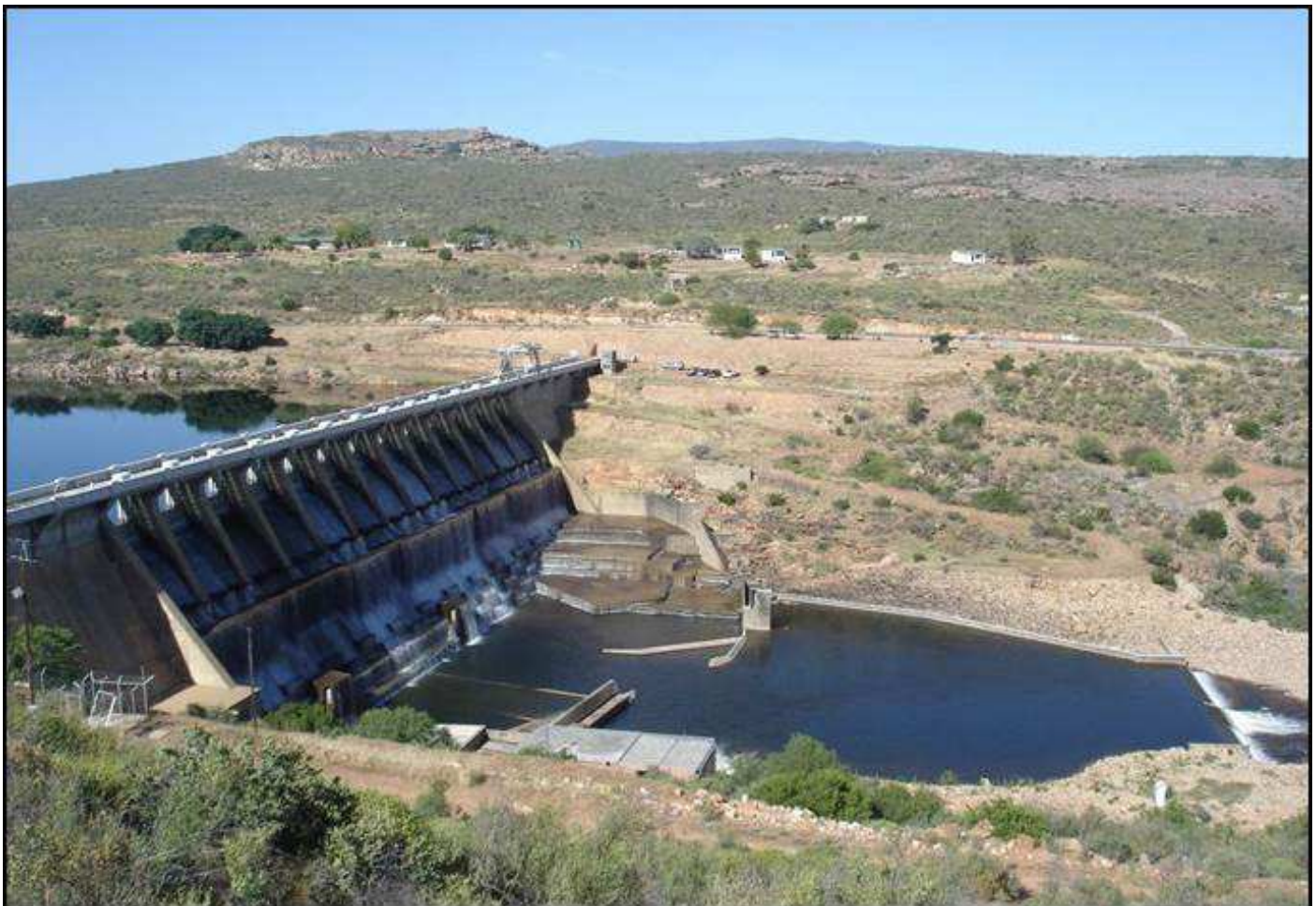
SOUTH AFRICAN NATIONAL COMMITTEE ON LARGE DAMS

## SANCOLD ANNUAL CONFERENCE 2015

# **Dam safety, maintenance & rehabilitation of dams in Southern Africa**

Cape Town

**1 to 3 September 2015**



*Clanwilliam Dam prior to raising*



## About the Conference

The Annual South African National Committee on Large Dams (SANCOLD) Conference will be held at the Lagoon Beach Hotel, Milnerton, Cape Town between Tuesday 1 and Thursday 3 September 2015.

SANCOLD invites all from Africa and the wider family of ICOLD to participate in the Conference which will include technical presentations, technical visits and an exhibition. The Conference will offer special insights into the activities of the International Commission on Large Dams (ICOLD). South Africa will be hosting the ICOLD Annual Meeting in Johannesburg in May 2016 and both of these events will offer dam and water resources engineers as well as all contributing to the dam engineering industry important international linkages, networking and the exchange of knowledge and experiences.

SANCOLD 2015 will be an ECSA Continuing Professional Development (CPD) accredited event. This Conference is a Category 1 activity and application will be made for 3.0 credits via SAICE.

A Conference date in early September 2015 has been selected so as to provide Delegates and Accompanying Persons the opportunity of visiting the Namaqualand flowers (see below).



## Organising Committee

The Organising Committee for this event consists of the Secretary: SANCOLD (Dr Paul Roberts) and SANCOLD Management Committee Members Dr Andre' Bester and Prof Fanie van Vuuren. SANCOLD has engaged the services of a Professional Conference Organiser (PCO), Event Dynamics who has also been appointed for ICOLD 2016 and was responsible for the highly successful SANCOLD Conference 2014. The persons from Event Dynamics who are closely involved with SANCOLD 2015 and ICOLD 2016 are Gugu Buthelezi and Nom Buthelezi.

## Background to the Conference

The general theme of the SANCOLD Conference 2015 is “**Dam safety, maintenance and rehabilitation of dams in Southern Africa**”. Note that all size classes of dams (small to large) will be addressed.

The 2013-14 Annual Report of the Dam Safety Office (DSO) of the Department of Water and Sanitation (DWS) states that the **total number of dams registered to date in South Africa is 5 030**. The classifications of the dams by size and dam safety categories are shown in the tables below.

**Classification of existing dams according to size class and hazard potential**

Size Class	Hazard potential rating			Total*
	Low	Significant	High	
Small	2 764 (56%)	957 (19 %)	41 (1%)	<b>3 762 (76%)</b>
Medium	293 (6%)	582 (12%)	128 (3%)	<b>1 003 (21%)</b>
Large	1 (0%)	22 (0%)	145 (3%)	<b>168 (3%)</b>
<b>Total</b>	<b>3 058 (62%)</b>	<b>1 561 (31%)</b>	<b>314 (7%)</b>	<b>4 933 (100%)</b>

\*98% of registered dams have been classified



**Category classification of existing dams**

Category classification	Number of dams	%
Category I	2 782	56%
Category II	1 855	38%
Category III	296	6%
<b>Total</b>	<b>4 933</b>	<b>100%</b>

The DSO has estimated that only 60% of the first 400 category II and III dams in its priority list comply with basic dam safety standards. The rehabilitation of dams and the prior monitoring, analyses and assessments is clearly a priority issue which SANCOLD needs to address in support of the dam sector.

The DSO has stated that a lot of work must still be done by several role players to bring the state of dam safety in South Africa to satisfactory levels. The current rate of dam safety betterment work is slow but steady. The rehabilitation programme by DWS for its dams is making an important contribution in this regard. **The DSO has, however, identified a need to accelerate the dam safety programme.**

The Western Cape has 1 425 registered dams with a safety risk (28% of South Africa’s total) and hence is an excellent venue for the Conference and should result in a large number of interesting papers from the region. The site visits are geared towards the Conference theme. Developing and owning a dam implies responsibilities and on-going costs that are not always clear to all owners. Experience in Africa shows that the necessary basic maintenance is often neglected and this impacts dam longevity and dam safety. This often happens simply due to inadequate budgeting. It would be useful to have a few papers with a skew in that direction.

## ***Conference Theme and topics***

The general theme of the SANCOLD Conference 2015 is “**Dam safety, maintenance and rehabilitation of dams in Southern Africa**”. A listing of the topics is given below as an aid towards the formulation of a suitable paper within the Conference theme. Please note that the topics are not exhaustive and papers satisfying the conference theme can also be submitted under Topic 15: Other. **Abstracts and papers are invited under the following topics:**

1. Dam rehabilitation;
2. Public safety;
3. Technical approaches for managing ageing infrastructure;
4. Advances in dam safety and risk management;
5. Dam safety legislation and regulation;
6. Environmental and social issues related to dams and reservoirs;
7. Strategies for extending the service life of dams and reservoirs;
8. Innovative surveillance and monitoring systems of dams and reservoirs;
9. Engineering capacity for the monitoring and rehabilitation of dams;
10. Financing of dam safety management and dam rehabilitation;
11. Hydrology, hydraulics and flood discharge works;
12. Operation, maintenance and refurbishment of dams;
13. Tailings and water quality dams;
14. Small hydro development;
15. Other

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SOUTH AFRICAN NATIONAL COMMITTEE ON LARGE DAMS

## Programme

### Overview

The Conference will commence on Tuesday morning 1 September. On Tuesday there will be presentations by keynote presenters and of technical papers. There will be a special programme for the Young Engineers during the Conference. The Conference Dinner will be held on the Wednesday evening. The preliminary Conference Programme is shown below:

<b>Tuesday 1 September 2015</b>	
07:00 to 08:30	Registration;
08:30 to 10:30	Welcome by SANCOLD Chairperson Keynote speaker: Dr Theo van Robbroeck: Honorary President ICOLD: Memories of a career in water engineering and management
11:00 to 12:30	Technical sessions
12:30 to 13:30	Lunch
13:30 to 17:15	Technical sessions
17:15 to 18:15	Annual General Meeting of SANCOLD (all welcome)
18:15 to 22:00	SANCOLD Young Engineers Forum and Social Evening free for other delegates

<b>Wednesday 2 September 2015</b>	
07:30 to 08:00	Registration
08:00 to 12:20	Technical sessions
12:20 to 13:20	Lunch
13:20 to 17:45	Technical sessions
18:30	Conference Dinner Awards and Prizes

<b>Thursday 3 September 2015</b>	
07:00 to 19:00	Technical Tour A: Clanwilliam Dam (Travel in large busses/private cars)
08:00 to 17:00	Technical Tour B: Table Mountain Dams (Travel only in Kombis from/to hotel)



*Closing Dinner at SANCOLD 2014*



## ***Call for Papers and Abstract***

The abstract should indicate the paper title, the author(s) and the text should not exceed 100 words. The format of the abstract must be downloaded from the Abstract and Paper Management system link <http://www.eventsregistration.co.za/sancold2015> . Please note that all abstracts must be submitted using the abstract and paper management system. Once the abstract has been received and accepted, the author/s will be provided with a document which sets out the required format for the full paper. The full paper will be subject to peer review. A substantial prize for the best paper by a Young Engineer (see below) will be awarded. Note that one presenter per paper will qualify for a significant discount in registration fees. The deadline for the submission of abstracts is **28 February 2015**. The Programme will be limited to the presentation of about 42 papers so as to allow for adequate discussion time. A few selected papers will also be given additional presentation time. If you have any queries regarding the use of the system, please do not hesitate to contact:

Ms Nom Buthelezi, Tel: +27 11 676 3417, E-mail: [secretariat@sancold2015.org.za](mailto:secretariat@sancold2015.org.za)

## ***Important Dates: 2015***

• Call for Papers	30/1
• Abstract submitted	28/2
• Abstract approval	7/3
• Draft paper submitted for review	9/5
• Draft paper reviewed & approved	5/6
• Closing date for Early-Bird Registration	1/7
• Final revised paper submitted	18/7
• Closing date for registration & payment	14/8
• PowerPoint presentations submitted	24/8

## ***SANCOLD Young Engineer's Forum***

ICOLD formed a Young Engineers' Forum in Lucerne in 2011 and has encouraged National Committees to form National Fora which will link into the ICOLD Forum. SANCOLD during its Annual Event in 2012 in Hilton called a meeting of SANCOLD Young Engineers to discuss the matter and to determine a way forward. A "Young Engineer" is defined as a person below the age of 35 years. The term "Young Engineer" includes scientists, technicians and technologists and is an all-embracing term for persons involved in dam engineering. The purpose of the Young Engineers' Forum is to ensure that they are incorporated into ICOLD and National Committee structures (eg SANCOLD). For instance ICOLD gave prizes at the last Congress in Japan for the best papers by Young Engineers and also in Seattle in 2013. Substantial discounts on registration fees are provided by ICOLD. SANCOLD was pleased that Young Engineers submitted papers and made presentations at the SANCOLD Conference in 2014. A new SANCOLD YEF Chairperson was elected during the SANCOLD Conference 2013. The new Chairperson is Motebele Moshodi of the Department of Water and Sanitation. The SANCOLD Constitution has been changed to include the SANCOLD YEF Chairperson on the SANCOLD Management Committee. SANCOLD offers SANCOLD Young Engineers discounts for the Conference 2015.



**SANCOLD YEF Chairperson Motebele Moshodi at YEF 2014**

We already have over 50 members of the SANCOLD Young Engineers’ Forum. If you are interested, contact Motebele on [MoshodiM@dwa.gov.za](mailto:MoshodiM@dwa.gov.za) . To qualify for the discount for Young Engineers, they must also be SANCOLD Individual Members. This will also entitle them to other benefits such as the reduction of ECSA Annual Fees as SANCOLD is scheduled to become a Voluntary Association of ECSA in 2015.

SANCOLD has been encouraging the participation of Young Engineers in the organisation and as an incentive, a prize (Apple Ipad mini) was given to the best paper prepared and presented by a Young Engineer during the SANCOLD Conference 2014. The recipient was Christiaan Marais of AECOM for his paper on *Computational fluid dynamic modelling of the Spring Grove Dam’s spillway*. We will be following a similar procedure during 2015. The Young Engineer must be the principal author and must also present it at the Conference.



**Christiaan Marais receiving the prize from Quentin Shaw for the best YEF Paper in 2014**



## ***Technical Site Visits:***

The focus of the technical tours is somewhat different from that in previous years. The tour selection offers a great opportunity to the delegates for broadening their knowledge of **dam safety, maintenance and rehabilitation**. Technical briefings on the projects will be made during the first two days of the Conference.

Two tour options are being offered namely:

- Clanwilliam Dam Raising and Bulshoek Dam Rehabilitation. OR
- Visit to the historic Table Mountain Dams where significant rehabilitation work was undertaken.

### **Tour A: Clanwilliam and Bulshoek Dams**

The Clanwilliam Dam is situated on the Olifants River (Cape) upstream of the Bulshoek Dam near the town of Clanwilliam. It provides irrigation water supplies for the downstream development. The original dam was a concrete mass gravity dam which was completed in 1935. A storage dam was required for sustainable irrigation to ensure an adequate assurance of supply. The dam was raised in the mid-1960's by means of gates and post stressed cables. The dam is 43m high. The Dam does not comply with current modern day safety standards and the Department of Water and Sanitation is required to implement remedial measures. The dam has also experienced alkali aggregate reaction (AAR) problems which impairs gate operation and is a dam safety risk. A better assurance of supply for agriculture from the Lower Olifants River Government Water Scheme and demand for further water allocations is required hence the need for a further increase in the storage capacity. Additional water will be provided for resource-poor farmers in the area.



***Clanwilliam Dam***

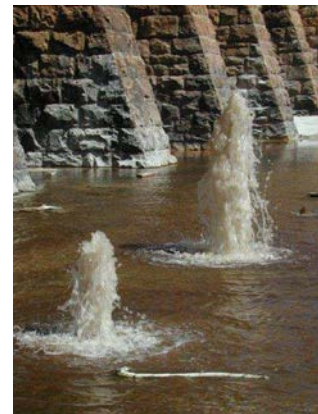


The Technical Tour will also include a visit to the Clanwilliam Flower Festival. Delegates may also wish to stay over and spend some time in the vicinity to view the wild flowers. An accommodation list can be requested from the PCO. See also <http://www.clanwilliamflowerfestival.co.za/>

The Bulshoek Dam is a gated barrage with a height of 17m. It was constructed in 1923 for the diversion of water into the irrigation canals along the Olifants River. The piers are of a masonry construction. Remedial work was undertaken to the structure in 2003/4 as there was downstream scour and a large amount of foundation leakage.



*Remedial work at the Bulshoek Dam 2004*



*Foundation leakage*

### **Tour B: Table Mountain Dams (Tour limited to 80 participants)**

The Woodhead (28m high) and Hely-Hutchinson Dams (16m high) were constructed in 1897 and 1904 on Table Mountain for the supply of water to the City of Cape Town. Both dams were found to have stability problems and were strengthened by means of restressable post-tensioned cables around about 2000. Technical details are provided in the SANCOLD Conference 2014 paper by Messrs Denys, Human and Shelly. The tour will include a lunch at a Wine Estate. The tour group will have to travel in Kombis and no private vehicles will be allowed.



*Table Mountain Dams*



*Downstream face of Hely-Hutchinson Dam*





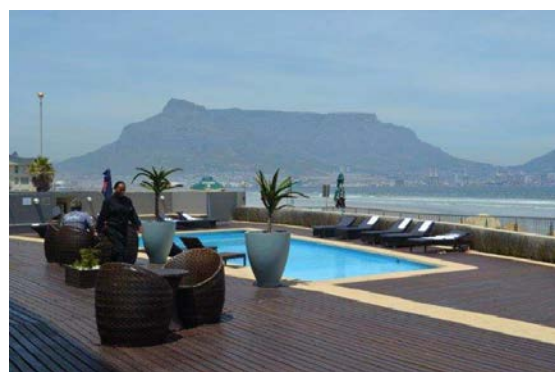
## ***Venue and Accommodation***

The SANCOLD Conference 2015 will be held in Cape Town in the Lagoon Beach Hotel, Milnerton, Cape Town ([www.lagoonbeachhotel.co.za](http://www.lagoonbeachhotel.co.za)). The venue has been selected on the basis of easy access for the site visits and the excellent conference and accommodation facilities. Lagoon Beach has over 200 rooms as well as three restaurants. The delegates are encouraged to make use of the Conference accommodation as this provides an excellent opportunity for networking amongst colleagues. Adequate and safe parking is available for motor vehicles. Register before **1 July 2015** as there is a limited amount of reserved accommodation at the special rates quoted. The Hotel provides a free scheduled shuttle bus to the City. The PCO will also make available a list of alternative lower-priced accommodation in the vicinity: delegates will be responsible to make their own reservations and transportation for this accommodation. Refer to [www.citihopper.co.za](http://www.citihopper.co.za) for transfers from the Airport to the Hotel.

**Rates: SINGLE ROOM – R1 100.00 per room, per night, rate includes breakfast, VAT, Tourism Levy**  
**: DOUBLE ROOM -max 2 pax per room, R1 300.00 per night, rate includes breakfast per person, VAT, Levy**



***Lagoon Beach Hotel***



***View of Table Mountain from the Hotel***

## ***Accompanying Persons Programme***

A special Accompanying Person's Programme will be offered to such registered persons at cost. The day visits will include interesting tours in the Cape Town area. A separate listing of the local tours will be provided upon request. Please indicate such interest upon Registration. Provision will also be made for such tours also on Thursday 3 September for those Accompanying Persons not wishing to attend a Technical Tour.

## ***Sponsorship Opportunities***

A number of sponsorship opportunities exist and the SANCOLD 2015 Secretariat should be contacted for further detail. Each technical session may receive sponsorship and the sponsor will be entitled to make a five minute presentation at the start of the session on their organisation.



## ***Exhibition***

The SANCOLD Conference 2015 Exhibition is an opportunity to show the Dam Community what you can do. The event is expected to attract more than 200 delegates from South Africa, Africa and the rest of the world. The Exhibition will be in the entrance hall of the Conference Centre. Early booking of exhibition space is recommended as the number of spaces could be restricted. The Exhibition will be held on 1 and 2 September 2015. The approximate size of each exhibition area is 2 x 3 m. (Table and two chairs included). Stand allocation will be based on when payment has received. If you wish to discuss the matter further please do not hesitate to contact Nom Buthelezi by e-mail at [secretariat@sancold2015.org.za](mailto:secretariat@sancold2015.org.za) or by telephone at +27 11 676 3417.



***Exhibitor at SANCOLD 2014***

## ***Registration***

Registration in 2015 will be limited to the online registration system via the link <http://www.eventsregistration.co.za/sancold2015>. Registration will be open on **6 February 2015**. The Registration Fee structure (see below) for 2015 is the same as that in 2014, except that the cost of an optional hardcopy of the Proceedings has been deducted (R400). Those delegates wanting a hardcopy version will need to place an order and pay the additional amount. The registration fee does not include accommodation. Complete the relevant section in the online registration procedure if you require accommodation.

If you have any queries regarding registration, please do not hesitate to contact:

Ms Nom Buthelezi, Tel: +27 11 676 3417, E-mail: [secretariat@sancold2015.org.za](mailto:secretariat@sancold2015.org.za)



***Nom***



## Registration Fees

The **Delegate Fee** includes attendance of the Conference and Exhibition, papers and presentations in electronic form, morning and afternoon refreshments, lunches during the Conference, Conference Dinner and Technical Tour. A discounted **Speakers Fee** is provided for **one speaker** per paper. The name of the nominated speaker who will qualify for this discount must be provided when the Abstracts are submitted. Delegates who require a **hardcopy** of the printed Conference Proceedings must indicate this during registration for which an additional charge of R400.00 is levied. An electronic version of the Proceedings is included in the Registration Fee and supplied to all delegates. The social for the Young Engineers is included in the Conference Fee. Provision is made for an **early-bird discount** for delegate registration and payment before **1 July 2015**. The fee for **Full time students** at SA Universities covers attendance sessions, papers (electronic and hardcopy), morning and afternoon refreshments, Conference Dinner, technical tour and lunches. Proof of student status is to be submitted upon Registration. The **Exhibitor fee** for the first Exhibitor includes the full Conference package as per the Conference Delegates in addition to the stand. The second and third Exhibitors also obtain the full Conference package depending on the number of days of attendance. The fee for **Accompanying Persons** includes lunches, Conference Dinner and Technical Tour. The local AP tours are provided at additional cost shown below.

Days of Attendance	3 Days	2 Days	1 Day
<b>Full delegate fee</b> (Not a member of SANCOLD):	R8 850	R7 000	R5 150
<b>Delegate fee for corporate</b> SANCOLD members	R8 600	R6 750	R4 900
<b>Delegate fee for individual</b> SANCOLD members	R8 250	R6 400	R4 550
<b>Delegate fee for Young Engineer + SANCOLD member.</b>	R6 250	R5 100	R3 950
<b>Speaker fee for delegates</b> non SANCOLD members	R6 950	R5 500	R4 050
<b>Speaker fee for corporate</b> SANCOLD members	R6 700	R5 250	R3 800
<b>Speaker fee for individual</b> SANCOLD members	R6 350	R4 900	R3 450
<b>Speaker fee for individual</b> SANCOLD YEF members	R4 350	R3 600	R2 850
<b>DISCOUNT FOR EARLY-BIRD REGISTRATION &amp; PAYMENT (Before 1 July 2015)</b>	<b>R 750</b>	<b>R 500</b>	<b>R 250</b>
<b>Full time MScEng/MEng or PhD students at a SA University</b> (see detail above)	R3 900		
<b>Exhibition stand &amp; First Exhibitor fee</b>	R15 000		
<b>Second (+third) Exhibitor fee</b>	R6 950	R5 500	R4 050
<b>Accompanying Person :</b>	R600 per person		
<b>Hardcopy of Conference Proceedings:</b>	R400 per set		



## ***Accompanying Person's (AP) Tours***

<b>Tour</b>	<b>Cost per tour</b>
AP1: Hop on Hop off Cape Town Bus 2015 1 Day Pass	R225.00
AP2: Hop on Hop off Cape Town Bus 2 day pass 2015	R368.00
AP3: Cape Point Full Day Tour 2015	R665.50
AP4: Cape Point Half Day Tour	R484.00
AP5: Cape Highlights Full Day Tour	R857.00
AP6: Table Mountain & City Half Day Tour	R345.00
AP7: Winelands Full Day Tour	R969.00
AP8: Cape Township 'Cape Care Route'	R426.00
AP9: Hermanus Full Day Tour	R696.00

## ***Contact Us***

Abstracts, papers, technical aspects, exhibition and registration

Ms Nom Buthelezi [secretariat@sancold2015.org.za](mailto:secretariat@sancold2015.org.za) , Tel +27 11 676 3417

Other matters

SANCOLD Secretary (Paul Roberts) at [secretary@sancold.org.za](mailto:secretary@sancold.org.za) , Tel+27 12 460 9100