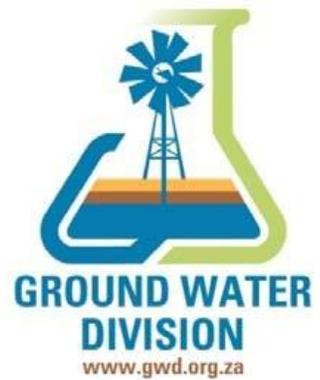


SPECIALIST DIVISION
OF THE GEOLOGICAL SOCIETY OF SOUTH
AFRICA



IAH
SOUTH
AFRICA

GROUND WATER DIVISION

QUALITY | SUPPLY | MANAGEMENT | SUSTAINABILITY

Professionals for the responsible management and development of groundwater

The Ground Water Division aims to serve the groundwater community in southern Africa, for the advancement of the science and technology of groundwater, and to promote the efficient use of groundwater and professionalism throughout the groundwater industry.

Annual Report to GSSA

from Period May 2019 to May 2020

WORD FROM THE CHAIR



Since June 2019 the Groundwater Division was busy with various activities by our Branches and National EXCO.

Various training events were held for the industry: the Fieldschool in Cape Town for honour student and industry; Groundwater Symposium in the Bloemfontein; “From the past – into the Future” in Pretoria; “Langebaan, West Coast research findings” in Bellville; Groundwater Breakfast in Durban; “PEST suite course” in Port Elizabeth; to only name a few.

Our biggest event was our Bi-Annual Conference and Exhibition held in Port Elizabeth that focused on the “Sustainability Issue” of groundwater. The conference was attended by 220 conference delegates for the industry, local government, academical institutions, etc.

We welcome all the new members to the GwD and especially the student members. We believe your active participation will benefit your development in the groundwater sector.

With the unknown future, many events are hanging in the balance. Many of our events need to be virtual events. Many events are planned for the rest of the year from all the 6 Branches. Keep your eyes on the GwD website or Facebook page for the latest time schedules.

The GwD and the IAH-SA embarked on a journey to bring the 50th IAH Congress to Cape Town, South Africa in 2023. The proposal will be submitted in June and our belief that we will have the

opportunity to officially present our bit in September this year in Sao Paulo, Brazil.

The new era that we are entering will have unique challenges, but I also believe in new opportunities.

EXECUTIVE COMMITTEE

The duties of the Executive Committee are to manage the affairs of the Division in the interest of the Members of the Division and in accordance with the GWD Constitution and the Roles and Responsibilities guidelines as set out in the Addendum.

The Executive Committee serves for one term (2 years) and can be re-elected limited to one consecutive term only.

2019 was Election year and nominations for the new term 2020/2021 Executive Committee opened in May 2019.

Only members in Good Standing were eligible to nominate and be nominated. After receiving all nominations (a total of 26 individuals were nominated and seconded), and concluding the process of inviting the Nominees to accept their nominations, the GWD opened the ballots with a total of 13 Candidates. The final results were announced at the 2019 GWD Conference Cocktail that followed after the GWD AGM at the Ground Water Conference in October 2019.

**CONGRATULATIONS TO THE NEWLY ELECTED
2020/21 EXECUTIVE COMMITTEE**

NATIONAL COMMITTEE:

Mr Fanus Fourie (Department of Water of Sanitation) - National Chairperson
Mrs Nicolette Vermaak (Institute for Groundwater Studies, University of the Free State) – National Vice-Chair (re-elected)
Mr Yazeed van Wyk (Water Research Commission) - National Treasurer (re-elected)
Dr Jaco Nel (University of the Western Cape) - National Secretariat

Branch Representatives on the Executive Committee:

Central Branch Chair: **Dr Amy Allwright** (Institute for Groundwater Studies, University of the Free State)

Eastern Cape Branch Chair: **Mr Etienne Mouton** (Hallowed Ground Consulting)

Gauteng Branch Chair: **Mr Kwazikwakhe Majola** (Department of Water of Sanitation)

KwaZulu-Natal Branch Chair/ GAKZN Representation: **Mr Pieter Labuschagne** (GCS Pty Ltd)

Western Cape Branch Chair: **Dr Sumaya Israel** (University of the Western Cape)

In 2019, the Limpopo Branch and planned North- West branch was incorporated into the establishment of a new NORTHERN branch:

Prof Ingrid Dennis was elected to take the lead in the establishment of this Branch.

Co-opted to the Executive Committee:

The International Association of Hydrogeologists (IAH) South Africa National Chapter Chair or nominated representative:

Mr Julian Conrad. The IAH is the 'International link' not only to worldwide events but also to international working groups.

Professional Portfolio seat. A Professional Panel (Chaired and Represented on the EXCO Body by the Immediate-Past GWD Chair): **Prof. Matthys Dippenaar**

This portfolio will ensure succession planning, contingency and also a stronger and committed Professional reference group/ panel.

GWD MEMBERSHIP

The Division strategically focuses on individual membership. The current GWD membership Categories are Honorary -, Professional -, Ordinary -and Student membership:

HONORARY MEMBERS are individuals whom the Division, through the Executive Committee, desires to honour for outstanding service in the field of ground water. The Division also confer Honorary Life Membership on these members for their meritorious and outstanding service and dedication to furthering the science and technology of ground water.

With the devastating loss of ten of the Division's honorary members in the last decade, the Division not only realised what a wealth of knowledge these individuals contributed to the sector, but also that our members are valued colleagues and loved friends and form deep connections where each plays a part in the strength of the Sector.

It is with great sadness that we take a moment to remember our late but certainly not forgotten Honorary Members:

Dr Thomas Steyn Kok (1919 – 2013)

Prof Gerrit van Tonder (1953 -2014)

Mr Johannes Roelf Vegter (1925 – 2016)

Mr Siep Talma (1944 - 2016)

Dr Johan van der Merwe (2017)

Mr Wilhelm Ernst Bertram (1951 – 2018)

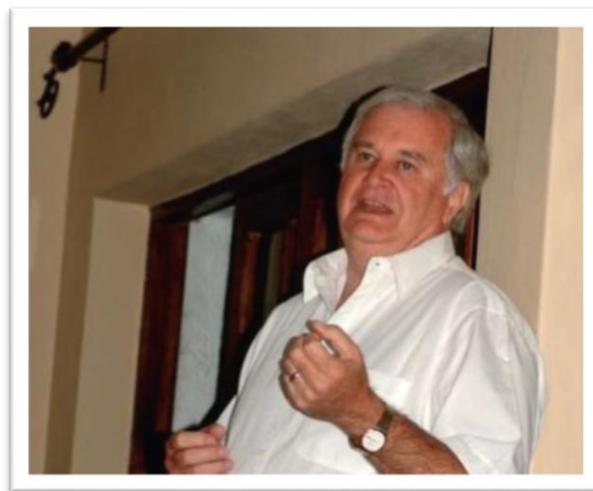
Mr Philip Hobbs (1954 – 2018)

Prof Balt Verhagen (2018)

Prof Frank Hodgson (1943 - 2019)

FAREWELL TO GWD HONORARY MEMBER PROF FRANK HODGSON (1943-2019)

In memory of an Industry giant: A grand master of his trade and much loved and respected leader within the Ground Water Sector.



It was with great sadness that the GWD learned of the passing of one of its Honorary members, Prof. Frank Hodgson. Prof Hodgson was awarded the Ground Water Division of the Geological Society of South Africa Groundwater medal, as far back as 1988, for his significant contributions to the advancement of groundwater in South Africa.

Prof Hodgson and his wife Rene were on tour in France, when a sudden heart attack struck and despite efforts from the emergency response teams, Prof Hodgson sadly succumbed. Condolences and heartfelt messages were

streaming in from across the globe, and the local press announced on various platforms the sad news of his passing. He is survived by his wife Rene, two daughters Minette and Renata and two grandchildren.

Prof Hodgson is lauded as the founding father of the Institute for Groundwater Studies (IGS) at the University of the Free State in 1974 and became its' first Director where he served in that leadership role for 30 years. In 2004, the UFS also rewarded him with a centenary medal for his entrepreneurial management of the IGS.

IGS noted *"The nine indigenous trees that Prof. Hodgson planted in front of the IGS building will always bear witness to the fact that he was not only a brilliant scientist, but also deeply involved in environmental concerns."*

The trees he planted are surely also symbolic of the life, stability and growth he ensured within the industry. And we all will benefit of the huge shade you left us to further grow and nurture the past and present students and professional geohydrologists in South Africa.

Thank you Prof.
Rest in Peace.

The Division also wish to make special mention of its newly bestowed 2019 Honorary Awards:



*Newly Awarded GWD Lifetime Achievement Award (2019 Conference): **Mr Willem du Toit***
Full interview available on

<https://vimeo.com/367268476/0a8545094a>

The recipient of the 2019 GROUND WATER DIVISION INSTITUTIONAL EXCELLENCE AWARD.



In 2019, the GWD also actioned the 1st Institutional Award to an organization in recognition of outstanding service and dedication to

furthering the science and technology of groundwater through research excellence.



*Dr Shafick Adams received the award on behalf of the **WATER RESEARCH COMMISSION***

The current 2020 Honorary members of the Division are:

Mr Willem du Toit (GAU), Dr Shafick Adams (GAU), Isa Thompson (GAU), Prof Jopie Botha (Central), Prof Eberhard Braune (GAU/WCAPE), Dr Kym L Morton (GAU) and Dr Gideon Tredoux (WCAPE).

PROFESSIONAL MEMBERS are members who specialise and practice in groundwater specific fields, have a recognised qualification and are professionally registered with SACNASP. They may be officials of various state departments, academics, consultants or any other individual, but are required to be (a) registered with SACNASP and (b) subscribe to both the SACNASP and GSSA Code of Conduct.

By law, SACNASP membership is required to practice in a particular field of natural science. As from 2017, all registered SACNASP members in Earth Science, Geological Science and Water Resources Science (the fields groundwater practitioners can currently register under), will require Continuing Professional Development credits to enable renewal of SACNASP membership. Professionals need to accumulate 25 credits per five-year cycle (3 credits annually where 1 credit is 10 hours = 30 hours p/annum). These CPD's can be issued by **educational institutes**, training providers and/ or **voluntary natural scientific associations**.

The GWD, within the ambit of the Geological Society of South Africa voluntary organisation status, is now formally recognised and registered by SACNASP to evaluate and award CPD accreditation in all groundwater related applications. To date a number of activities had been CPD accredited and the process are now streamlined.

The Division has a total of **252** Professional Members registered of which **98** are **paid-up active 2020 members**.

The following SACNASP Field of Practices (FoPs) are represented with the majority of members registered for one FoP, with some up to 3 FoPs.

	2019	2020
Earth Science	96	114
Environmental Science	11	6
Geological Science	27	32
Water Resources Science	35	41
Other: Aquatic Science, Chemical Science Agricultural Science, Natural Science	40	35
Other: Pending queries/ Candidates	35	23

The GWD website, is envisioned as a GWD professional yellow pages, listing its **professionals available to consult in the areas of:**

Geographical Information Systems, Geochemical Modelling, Numerical Groundwater Flow and Transport Modelling, Ground Geophysics, Unsaturated Flow Hydraulics, Oil and Gas (hydrocarbon assessment), Remediation, management and monitoring of contaminated sites / land, Groundwater Quality Monitoring and Assessment, Surface- and Groundwater Interaction/modelling, Groundwater Impact/Resource Assessment, Groundwater Reserve Determination, Groundwater Resource Quality Objectives, Seepage Modelling, Groundwater exploration and development, Aquifer recharge, Tailing Dam Hydrogeology and Geochemistry, Groundwater Governance and Management

Some sublevels are also available: Drilling, Pumping (and falling/rising head) Tests, Water reticulation and piping, Down the hole geophysics, Camera logging, Scaling and corrosivity assessment of water.

ORDINARY MEMBERS are members of the Division who are not SACNASP registered professionals in the groundwater field but have an interest, directly or indirectly, in all matters groundwater. This category includes hydrogeologists not (yet) registered with SACNASP. Ordinary members subscribe to the GSSA Code of Conduct.

The Division has a total of **196** Ordinary Members registered of which **21** are **paid-up active 2020 members**. Ordinary membership peaks in a Conference year. The GWD strives to offer continuous benefits for Ordinary membership in non-Conference years by exposure to regular sector event and sector related communications.

STUDENT MEMBERS shall be bona fide students who are registered at a recognised institution for higher education, are studying groundwater and who are under the age of 26. These members may be required to assist in the running of national and regional GWD conferences, seminars or courses. Student members subscribe to the GSSA Code of Conduct.

The Division has a total of **241** Student Members registered and representing the following Learning Institutions:

Nelson Mandela Metropolitan University	6
North-West University	11
Rhodes University	4
Stellenbosch University	15
Tshwane University of Technology	3
University of the Free State, Institute for Groundwater Studies	51
University of Cape Town	3
University of Fort Hare	12
University of Johannesburg	1
University of KwaZulu-Natal	10
University of Pretoria	24
University of Technology, Cape Peninsula	3
University of Technology, Free State Central	1
University of the Western Cape	44
University of Venda	31
University of the Witwatersrand	9
University of Zululand	2
International / Regional Students from Nigeria, Botswana, DR Congo, Dublin, Toronto, Malawi	12

BRANCHES

Membership/ Branches	Central	Escape	Gauteng	KZN	Northern	WCape	TOTAL GWD
Total GWD DB	97	57	292	46	73	166	731
Professional	24	16	128	20	14	55	257
Ordinary	25	18	114	15	13	41	226
Student	46	23	46	11	46	69	241
Honorary	2	0	4	0	0	1	7
Paid up May 2020	16	10	63	17	12	26	144

Update from the Branches

The Central Branch of Ground Water Division incorporates members from the Free State and the Northern Cape.

Chair: Dr Amy Allwright

- The Branch initially scheduled and advertised a Branch event for 22 April but had to cancel this event due to the National Lockdown call. New events are now considered (see *Upcoming events schedule*)
- Submitted a bid to host the 2021 GWD Conference.



The Eastern Cape Branch of the Ground Water Division incorporates members from the Eastern Cape.

Chair: Mr Etienne Mouton

The Eastern Cape Branch hosted the Groundwater Conference and Exhibition in Port Elizabeth in October 2019 – A first for this relatively small Branch. The GWD EXCO congratulated all involved on a very successful event.

Refer to the *'Activities of the Year'*.

This Branch expressed its intention to host at least 3 member events during the upcoming term. One of the highlights anticipated is a combined meeting with Rhodes University, Industry & Treatment role-players to be hosted in Grahamstown (a more central venue for members) possibly during September 2020. More information on this event will be shared with membership.

The Gauteng Branch of the Ground Water Division incorporates members from Gauteng and Mpumalanga.

Chair: Mr Kwazi Majola. As the strongest branch nationally as well as home to the National EXCO, this branch aims to engage its members and grow the support for all Divisional activities. Refer to the *'Activities of the Year'* as well as *'Upcoming events schedule'*

- The Branch also submitted a bid to host the 2021 GWD Conference and Exhibition

The KwaZulu-Natal Branch of the Ground Water Division incorporates members from this region and in close partnership with the Groundwater Association KwaZulu-Natal (GAKZN).

The GAKZN is an existing representative body for sector roleplayers and I&A parties in the region. The GWD and the GAKZN solidified its partnership by hosting combined events in 2018. The recent Local Election for the GAKZN were concluded and Pieter Labuschagne will be taking the leadership role forward (for both the GAKZN and GWD) for the 2020/21 term.

The GAKZN/ GWD hosted their first membership event at the start of 2020. Refer to the *'Activities of the Year'*

The Northern Branch. Chair: Prof Ingrid Dennis. In 2019, the Limpopo Branch and planned North- West branch was incorporated into the establishment of a new NORTHERN branch. The energetic and hands-on Prof Dennis is already taking full initiative and tabled a number of planned activities for membership. (refer *Upcoming Events*)

The Western Cape Branch incorporates members from this region. Chair: Dr Sumaya Israel. An active Branch with a strong liaison with local membership and Learning Institutions. Western Cape hosted the 2019 FIELD SCHOOL (July 2019) and was central in arranging the professional Pest Modelling Course that was presented as the pre-Conference course in October 2019.

The GWD and IAH-SA branch also hosted a Farewell to Mrs Nicolette Vermaak that moved from Western Cape Department of Water and Sanitation where she had been working for almost 12 years, to the University of the Free State. The Region thanked and recognised her contribution.

Refer to the *'Activities of the Year'*

ACTIVITIES FOR THE YEAR

Honours and Industry Fieldschool 2019, Cape Town June 2019

Hosted at the UWC, by Dr Jaco Nel and Marlese Nel
SACNASP CPD EVENT

Presenters 2019: Christian Steyn (NWU), Martin De Klerk (Cape Geophysics), Dr Matthys Dippenaar (UP), Candice Lasher-Scheepers (CoCT), Dr Jaco Nel (UWC), Christiaan Vermaak, Angelo Johnson (UWC), Steve Kalule (USK Environmental), Dr Kelley Reynolds (Eskom), Dr Gideon Tredoux (GWD Honorary)

Building on the successes of the annual Industry Field Schools (hosted in Gauteng in 2016-18) and the Honour Students' Field School (2018, hosted in Potchefstroom by the NWU), the GWD combined these events in 2019 where together delegates (2) and students (30) participated not only in field (*exploration, drilling, sampling*) to desk (*analyses, interpretation and reporting*) instructional sessions, but also heard from the industry experts and joined in the panel discussions to gain more insight into current, real-world issues such as contaminant hydrology, remediation, source protection, security of supply and much more.

This is an annual Course and aimed at those involved or interested in groundwater (or geohydrology) who wish to

broaden their understanding of the fundamentals in the application of hydrogeological field work.

The next Field School will be hosted in Gauteng in 2020.



Groundwater Symposium GWD Central Branch IGS at UFS in Bloemfontein, 12 July 2019

Hosted at IGS by the Central Branch Committee SACNASP CPD EVENT

The GWD Central Branch, serving the greater Free State, North West and Northern Cape, invited all members and prospective members to join in this 1 day Symposium that was hosted at the University Free State, Institute for Groundwater Studies.

Presenters included:

Dr Eddy van Wyk, Golder Associates: The Application of Isotope Hydrology and Supporting Tracers in Subterranean Flow Studies

Mr Fanie de Lange, UFS IGS: Hydraulic Fracturing Research in the Karoo Basin

Mr Ray van Rensburg, Geotron Systems: AT Receiver: Pseudo science or a method worth investigating?



Mr Anton Lukas, IGS: Complexity versus Simplicity: A comparative analysis of complex geology in hydrogeological modelling



The majority of the world's current environmental problems can be traced back to industrialization. Issues such as climate change, groundwater contamination, unsafe levels of air pollution, toxins in rivers and soils, overflowing levels of waste on land and in oceans, and loss of biodiversity and deforestation are negative consequences of industrialization.

As the Fourth Industrial Revolution gathers pace, innovations are becoming faster, more efficient and more widely accessible than before. Technology is becoming increasingly connected, and we are now seeing a convergence of the digital, physical and biological realms. Emerging technologies, including the Internet of Things (IoT), virtual reality (VR) and artificial intelligence (AI) are enabling societal shifts by seismically impacting economies, values, identities and possibilities for future generations.

We have a unique opportunity to harness this Fourth Industrial Revolution – and the societal shifts it triggers – to help address environmental issues and transform how we manage our shared global environment. The Fourth Industrial Revolution could, however, also exacerbate existing threats to environmental security or create entirely new risks that will need to be considered and managed.

For seven consecutive years, water issues have ranked among the top five global risk factors in the World Economic Forum's annual Global Risks Report.³ In 2018, of those global risks perceived to have both the highest likelihood to manifest and the highest impact on the world in the next decade, all but one can be linked to water. Over this period of time, while other risks have emerged and disappeared – including the financial crisis and chronic diseases – water has remained.

It is within this context that the GWD hosted a social event to highlight some of our past experiences in terms of lessons learnt, and how that can frame and inform our thinking and planning to adapt to these new changes.



Presenters and Attendees at the GWD Central event. Dr Amy Allwright handing over gifts to the presenters

GWD Gauteng Branch Mixer

29 August 2019, WRC Offices, the Well, Pretoria

"From the past - into the Future"



Honorary members Prof Eberhard Braune and Dr Shafick Adams shared their experiences and ideas for the future, introduced by Ms Nelda Breedt. Gauteng Branch Chair 2018/19.



Nicolette Vermaak with Julian Conrad (IAH-SA) and Dr Jaco Nel (GWD Western Cape) at the Farewell function

GWD/ IAH-SA Branch Event

The Western Cape is Bidding Farewell to Nicolette Vermaak, 19 September 2019, UWC, Life Sciences Building

Nicolette presented the findings of her PhD research: The geohydrology of the West Coast, Langebaan – more to add to this fascinating puzzle.

A number of attendees joined in the Cheese and Wine networking and farewell event afterwards.



Pre-Conference Course - Darcy Lecturer: Two Day Course with Optional Third Day: Principles and Practice of Model Calibration and Uncertainty Analysis

20-23 Oct 2019, Port Elizabeth, Beach Hotel

SACNASP CPD EVENT

The course had two purposes. One of these were served on days 1 and 2 of the course. The third was served on the optional third day of the course.

The first two days of the course were devoted to explaining the principles and algorithms that underpin model calibration and calibration-constrained uncertainty analysis. Important by-products of this exploration are insights into what modelling can and cannot achieve, and what should, and should not, be asked of modelling when undertaken for decision support. The presentation was informal, with many real-world examples.

The third day of the course was for modellers who wished to learn more about using programs of the PEST and PEST++ suites in their modelling work. This included further details of PEST and PEST++ algorithms and behaviour, as well as advice on practical use of these programs.

Presenter

The course was presented by John Doherty, author of the PEST suite of software. John was also the 2019 Darcy lecturer. He has worked in the water industry as both a geophysicist and a modeller in a career spanning over 40 years. He has been employed by government, academic and consulting institutions. He presently runs his own company, Watermark Numerical Computing (of which he is the sole employee).



Attendees at the Specialist Course on Principles and Practice of Model Calibration and Uncertainty Analysis

GWD ConfEx 2019, 20-23 Oct 2019, Port Elizabeth
Eastern Cape, South Africa – 16th Groundwater Bi-Annual Conference and exhibition
SACNASP CPD EVENT



The GWD Conference Chair, Mr Gert Nel in his Welcome address to the Conference set the tone for this event:

On behalf of the Eastern Cape Branch of the Groundwater Division, we welcome each and every one to the 2019 Groundwater Conference and the beautiful city of Port Elizabeth. We trust that you will enjoy your time here and experience our Friendly City. The conference is about groundwater and we are all excited to discuss and share our knowledge on this crucial resource, but I also want to urge you to think about the groundwater user, from rural level to bulk supply. How can we help them to better understand this resource, to develop a passion for the conservation of groundwater. How can we, as scientists, help our colleagues in the water services and water management sectors to make their work a bit lighter? As scientists we try and understand nature, so that we can protect a water resource, but the fruits of our work must be enjoyed by the man/woman in the street, by small and large businesses. Our knowledge and research must provide the population of South Africa with some security that they will not run out of water, but it must also urge them to help in any way they can, because they want to!

The impact that a single water user makes by conserving water and preventing contamination, must not be underestimated.

‘Grondwater die antwoord, mits reg bestuur’

Met die sink van boorgate vir ondergrondse water wat daesdae ’n algemene gesig is, waarsku kenners oor die verhoedings van die hulpbronne.

Dr. Matthys Dippenaar, nasionale voorsitter van die Grondwatervereniging in Suid-Afrika, het gesê hoewel dit nog voorkom of ondergrondse water nie deur die droogte geraak word nie, is dit nie noodwendig die geval nie.

Da’s ook ’n risiko, het hy gesê op die vermenigvuldiging van die kontaminasie, wat vanjaar vir die eerste keer in Port Elizabeth aangeblynd word.

“Grondwater is vasweg die meerkonstante van sentrale water wat tans ’n hoop of soorte is nie. Opperwater in riviere, spruite en damme is in die meeste gevalle. Altes in ’n verhouding met mekaar.”

“In Suid-Afrika is grondwater uiters belangrik omdat ons ’n land is wat etlike baie min riviere het en in die grootste gedeelte van die land gewelddadige lae reënval kry,” het hy gesê.

Met die Oos-Kaap en talle ander dele van die land wat tans gebrek aan ondergrondse water het, is die droogte en die skerp daling in opgaandnesses se waarskynlike wat tot streng waterbeperkings lei, is ’n ope rilling gesê op die kontaminasie geïsoleer om nadelige invloed op boorgate in grondwater aan die publiek te verskaf.

Oor Nel, provinsiale voorsitter van die Grondwatervereniging, is hoewel die kontaminasie davy go-



Gert Nel (links), Oos-Kaapse voorsitter van die Grondwatervereniging, en dr. Matthys Dippenaar, nasionale voorsitter van die vereniging.

Foto: CARA-LEE DOORFLUNG

milks is om van die land en die bruisende boere wesenkapelise byeen te bring om hennu en hul jongste na versterking grondwater te beskerm, is dit vanjaar vir ’n baie belangrik om ook die gemeenskap se vas oor boorgate te beantwoord.

Die organisasie se hoofkantoor is om mensure bewoos te maak dat grondwater die antwoord op waterprobleme is, mits dit reg bestuur word.

Oor die algemeen is boorgatewater veilig vir min na mensak, maar Dippenaar moedig die verbruikers aan om dit te drink sonder om die kwaliteit te voorsien.

Hy’s voorsien ’n boorgate gesink word, moet doeltreffend ondergrondse word. Daar moet vas gesien word hoewel water per dag omtrent kan word wat goem of baie min nadelig vir die ekologie of langtermyn grondwaterverbruik sal inhoud. – Carla-Lee Dorflung

We thank and acknowledge the following sponsors for their contributions:

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Poster Session



Acknowledged student/ delegate sponsors:

SRK Consulting, Waterworks (PTY) LTD, NRF, GWD

MAJOR THEMES

Fundamentals of **Groundwater Drilling**

Site selection, borehole construction and depths, pump testing, water quality testing.

Fundamentals of **Groundwater Management**

Recharge versus abstraction, groundwater monitoring, co-operation between private groundwater users and the water services providers/ authorities.

Fundamentals in **Water Conservation**

Bridging the gap between water availability and water use, efficient water usage (hardware and user education), addressing user expectations versus water availability.

Fundamentals in **Water Surety/ Security**

Key aspects to be aware of when your business, enterprise or institution absolutely depends on the constant availability of water; in-depth look at current shortfalls in scientific research into water surety.

We thank and acknowledge the Exhibitors and Networkers at the Conference:

AQUATICO
BLUTECH PROJECTS PTY LTD
DIGITAL BOREHOLE SURVEYING
EDRS
GCS
GWD/GSSA/ IAH-SA
GOODSPEED ENVIRONMENTAL SERVICES CC

HARSONIC
SADC-GMI
SRK CONSULTING
STEYNS DRILLING CC
TUCANA SOLUTIONS
USK-HMA
WIMS
WRC

Congratulations to the following attendees that received Awards at the Conference:

Best Oral Presenter: **Dr Amy Allwright (IGS)**

Best Oral presenter Student: **Anna-Lisa Vicente (SRK/UWC)**

Best Poster: **Jan Myburgh (AGES Omega)**

Best Poster Student: **Ashleigh Tomlinson (UWC)**

Best Exhibitor: **USK / HMA**

Best Networker: **BluTech**

Highlights at this Conference, apart from 76 individual presentations, included the two workshops hosted as plenary sessions:

- **DRILLING REGULATIONS WORKSHOP.** Chaired by Gert Nel and Wandile Nomqophu (WRC) with presenters and panelists: Zachariah Maswuma (DWS), Mark Schapers (JG Afrika) and Derek Whitfield (EDRS)
- **GROUNDWATER CONSERVATION WORKSHOP.** Facilitated by Etienne Mouton (Hallowed Ground Consulting) with presenters and panelists: Fanus Fourie (DWS) and Sivashni Naicker (DWS)

A new addition to the Conference was an OPEN DAY invitation to the public. This open day offered free access to the Conference Exhibition as well as an opportunity for attendees to ask pertinent and relevant borehole questions to a panel of experts.

The Conference was attended by 220 Conference Delegates.



GAKZN AGM, 05 March 2020, Durban



Mr Pieter Labuschagne (Chairman and Ground Water Division link) reported: On 5 March 2020 the GAKZN hosted its AGM with guest speaker Michael Singh from KZN DWS.

Some highlighted issues, brought over from 2019, included: CIDB Rated Tenders

Overview of Hydrogeology projects in the KZN

2019 DWS Meeting perspectives:

- Regulation of drilling contractors
- Groundwater data management in KZN
- Groundwater projects – tender inconsistencies
- Training initiatives
- GAKZN's role of bringing science, contractors and authorities together

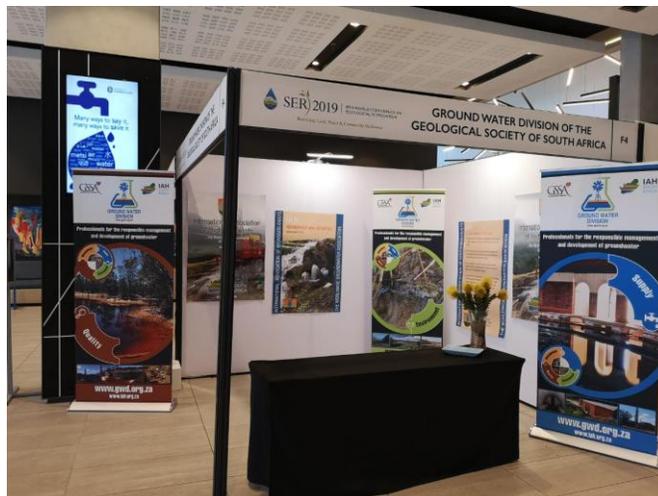
SPONSORSHIPS, ENDORSEMENTS & SECTOR INVOLVEMENT

The GWD and IAH-SA jointly exhibited at the SADC-GMI 2nd Annual Groundwater Conference held under the theme “Groundwater Contribution to achievement of Sustainable Development Goals in SADC Region.” The conference was hosted in Johannesburg, South Africa, during 4 – 6 September 2019.



The GWD and IAH-SA jointly exhibited at the Society for Ecological Restoration (SER) 8th World Conference on Ecological restoration. The conference was held in Cape Town, South Africa, **22-27 September, 2019**.

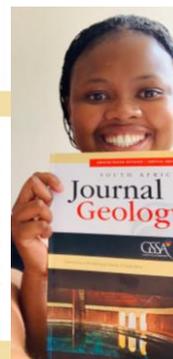
SER2019 connects researchers, practitioners, policymakers, industry professionals, and students with backgrounds in natural and social sciences, environmental engineering, urban and regional planning, natural resource management, public policy, and more. Conference sessions will foster knowledge sharing and debate around big-picture issues and trends, as well as specific tools, techniques, challenges, and strategies for ecological restoration around the world.



IAH-SA BID ON 2023 CONFERENCE

South Africa are submitting an IAH International Conference bid for this event to be jointly organized by IAH-SA and the GWD. The final decision will be announced in Brazil later in 2020.

PUBLICATIONS



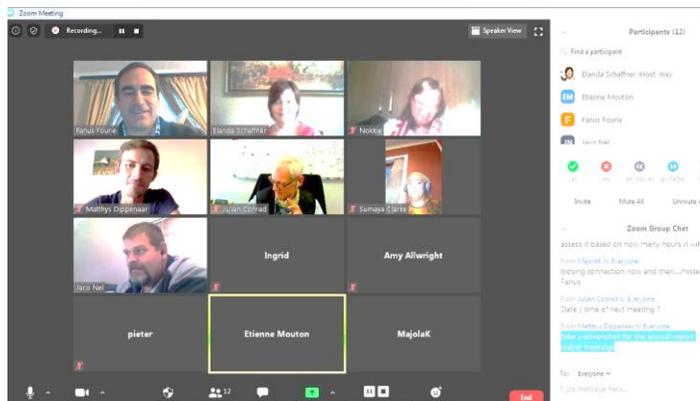
South African Journal of Geology (2019) 122 (3): 267-268.

Mathys Dippenaar; Shafick Adams
<https://doi.org/10.25131/sajg.122.0031>

NATIONAL OFFICE RESPONSE

With the country ordered into a COVID-19 lockdown in late March 2020, a number of the planned GWD activities that were to take place across the Country, were immediate and indefinitely postponed.

The Executive Committee proceeded with its online meetings (Pictured below: The EXCO testing the new Zoom platform) and subsequently regrouped after a period of adjustment.



The GWD procured a number of branded masks (the supplier offered a % of its proceeds to charities), for use by its branches and distribution to members or clients.

The GWD National Chair released two Membership communications during this period:

25 MARCH 2020. Groundwater Covid-19 Response Boreholes - part of essential services

With the current focus on sanitation as the major preventative measure re. viral control, the sector are aware that there are still a vast majority of villages & towns that are in desperate need of water.

The Minister (Human Settlements, Water and Sanitation) announced that water will still be provided in the form of water tankers and boreholes.

<https://www.gov.za/speeches/minister-lindiwe-sisulu-interventions-curb-spread-coronavirus-covid-19-25-mar-2020-0000>

SOS | The Department of Human Settlements, Water and Sanitation will increase the provision of water and sanitation in high-density public areas, informal settlements and rural areas in response to the novel coronavirus outbreak in South Africa. @LindiweSisuluSA/Twitter

There are several services linked to drilling (i.e. siting, drilling supervision, pump testing and water quality testing). Considerations of all practical implications for sinking boreholes and the measures that need to be in place to get the holes tested as soon as possible, will be prioritised.

Where drilling is considered, special permits will have to be issued to specific people or companies to ensure that professional services are rendered and that a supply of sustainable, potable water is ensured.

The Department have emergency measures in place to site, drill and test boreholes and are currently in the process to roll-out country-wide.

More information will be released soon.
Keep safe.GWD EXCO

20 APRIL 2020. During this period of lock-down, we all feel the impact of COVID-19 in our lives, business and communities. The new era that we are entering will have unique challenges, but I also believe, new opportunities.

The Regulations in the published Government Gazette declared water, sanitation and animal care as essential services. Many hydrogeological, drilling, pump testing and equipment companies already registered their businesses as essential services. I encourage those who have not registered yet to please do so. This entail services to provide water to the Local Municipalities and farming communities.

The Ground Water Division is in contact with the Department of Water and Sanitation about long term groundwater solutions for communities that need water for drinking and hygiene purposes. The Department assured me that the paperwork to appoint geohydrological professional services providers are ready if needs be. There is to my knowledge two projects already underway from private funders.

With the unknown future, many events are hanging in the balance. Many of the universities are now preparing to start classes online. Arrangements for the Field School 2020 are almost entirely organized, but the final decision on the go-ahead will only be taken in a few weeks. The decision will be made with the universities and their revised academic programs.

The 2023 IAH Bid is progressing very well. The Bid team is working hard during the lockdown period to get the proposal done with a program and finances.

And then lastly I would like to encourage everybody to take the challenge from Matthys Dippenaar on our Facebook page. Record a 2min video on groundwater in promoting groundwater from your specific expertise.

Be safe
National Chair

UPCOMING EVENTS

GWD FIELD SCHOOL 2020. The final decision regarding the annual Ground Water Division combined Field School for Industry and Honors Students has not been made at the time of this report. The EXCO will have a special sitting in June after clarity on the level of lockdown in the country has been attained.

DARCY LECTURE 2020: South Africa wish to participate in the 2020 Darcy Lecture series that is now being hosted online. The request was made in 2019 and we are awaiting finalisation of the possible dates. Dr. Reed Maxwell presents two extremely interesting topics: Lecture 1-“Hydrology from the bottom up:

how groundwater shapes the water cycle” and Lecture 2 - "Hydrology in the supercomputing age: How computational advances have revolutionized our field, and what big data and massively parallel simulations mean for the future of hydrologic discovery"

The GWD are adjusting to the trend to host online events and the following schedule with planned events are on the table (*subjected to change)

Host Branch	Presenter	Title	Date and time
Northern Region	C Vermaak	Experience with and practical tips on fieldwork	29 May 2020 @14:00 (online)
Gauteng	WRC & Other	WRC Dialogue: Improving groundwater development and management at municipal level	June 2020 (online)
Gauteng	Dr Altus Huisamen	Groundwater Modelling and Geochemistry & Publishing in the Mine Water and the Environment Journal	July 2020 (online)
Northern Region	Dr R Dennis	Engaging citizen science: Mobile groundwater app	31 July 2020 @ 14:00 (online)
Western Cape	Dr H Seyler	Machine Learning modelling techniques for groundwater availability in RSA Dolomites	August 2020 (online)
Gauteng	Dr Karen Villholth	Groundwater management in South Africa – Building the knowledge, capacity and partnerships required - from local to global level	September 2020 (face-to-face)
Western Cape	Dr J Nel	West Coast Wellfield development and MAR feasibility: successes and lessons learnt	October 2020 (UWC & online)
Central	Various	Groundwater geochemistry: a growing importance (prelim)	October 2020 (IGS & online)
Northern Region	Prof Bezuidenhout	Microbial populations in groundwater: The good guys and the not so good ones	30 October 2020 @ 14:00 Centre for Water Sciences and Management (Potch) and online
Gauteng	Dr Chris Moseki	Climate change and groundwater: current status and future implications for South Africa from a	November 2020 (online)

		groundwater perspective	
Western Cape	Dylan Blake	Steenbras Wellfield development and operations: The experience and lessons learnt	December 2020
Northern Region	All delegates	Groundwater challenges in the North-West and Limpopo: How do we address them	26 February 2021 (In Limpopo – venue to be confirmed) and online
Northern Region	Speaker tbc	Impacts of climate change on groundwater resources	23 April 2021

*More branch events are being planned and might not be listed. A full complete schedule will be released on the GWD website.

ANNOUNCEMENT

Following a poll opened via the GWD Website, membership were invited to select where they would like to attend the next GWD Conference as both the CENTRAL and GAUTENG Branch submitted very competitive and attractive bids.



The Poll also asked membership to select their months of choice: During May - June 2021 or During Sept - Oct 2021?

Results were tabled at the 7 MAY EXCO meeting:

31 Unique entries, 1 invalid vote:

10 Academia, 2 Local Government, 3 National Government, 14 Private Sector, 1 x Parastatal, 1 x Water Management Institution

Results:

Free State (Bloemfontein) – **8 votes**, Gauteng (Johannesburg/ Midrand) – **7 votes**, Gauteng (Pretoria/Centurion) – **16 votes**
May - June 2021- **9 votes**, Sept - Oct 2021- **22 votes**

Some of the Comments/ Motivations

#GAU - Convenience and Cost saving regarding transport and accommodation logistics resulting in optimum participation. Depends on where most of the attendees are from - in this time of The Virus, we HAVE to cut costs, which is why Pretoria (also most of the Govt departments and research institutes are in Pretoria)

#SEPT-OCT - June is a difficult time for local government as it is when our financial year ends and the most pressure is on us to spend the full budget allocations. & I teach April to June, so that period is bad for a conference for me.

CONGRATULATIONS!

The 2021 GWD Conference will be hosted in Gauteng (Pretoria/Centurion) during Sept - Oct 2021

FINANCIAL SUMMARY

Below is reporting on activities and balances from start of January to May 2020.

Annual Report Financial Reporting (Jan 2020 - May 2020)		
	Jan-20	May-20
Opening Balance Current Account	74,294.99	151,609.79
Opening Balance Investment Account	844,677.68	860,476.93
2020		
	INCOME	EXPENSE
Designs/ Website/ Email/ IT		3493.00
Bank Charges		748.85
SP Retainer (Dec2019/ 2020)		35000.00
Events	83490.00	
Meetings/ Travel Exco/ Refunds		7717.35
Advertising/ Marketing/ Sector Support		4025.00
Membership	47308.00	
Projects		2500.00
	130,798.00	53,484.20

□ END

In memory of **PANNIE ENGELBRECHT** (1949-2019)

Pannie hailed from Namaqualand and initially joined the police force before switching to medical technology. He joined the CSIR some 40 years ago and started research on the application of sewage sludge to land and quantified the risks of bacterial and heavy metal contamination of vegetables. His research greatly assisted the Department of Health to draw up guidelines for the safe use of sewage sludge as a fertilizer on edible crops. It extended to the wider use of sludge for example on sports fields. In those early days he was also involved in desalination of brackish water and was stationed in Henties Bay Namibia for nine months to monitor the desalination experiments with the EDR technique on behalf of the CSIR.

Since the 1970s the CSIR was monitoring the seawater quality and the marine group was involved in dilution studies at sewage outfalls in the marine environment. Pannie carried out the monitoring of the bacterial quality of the water both at Green Point and at Hout Bay. The Hout Bay study extended over two decades before and after construction of the marine outfall and this served as excellent material for a D Tech study, a token of his perseverance.

As part of the groundwater group he carried out research on the impact of cemeteries on groundwater quality and provided guidance to many consultants on the placement of such facilities. Pannie also contributed significantly to a wide variety of groundwater projects, notably the study of the occurrence of nitrate in groundwater in Botswana, Namibia and South Africa. He also played a key role in the investigation of groundwater pollution at the massive cattle graves in Ngamiland, Botswana. His resourcefulness made him an ideal team member for carrying out any task.

Pannie also was a talented graphic artist and had the knack to do graphs and presentations in an innovative way. He assisted many colleagues with this task and with designing report covers. He will also be remembered for the finesse to prepare the meat expertly when he organized a braai.

We honour a special colleague and friend and are grateful that we had the opportunity to work together. His presence and especially his Namaqualand humour will be sorely missed.

Gideon Tredoux
23 July 2019

