

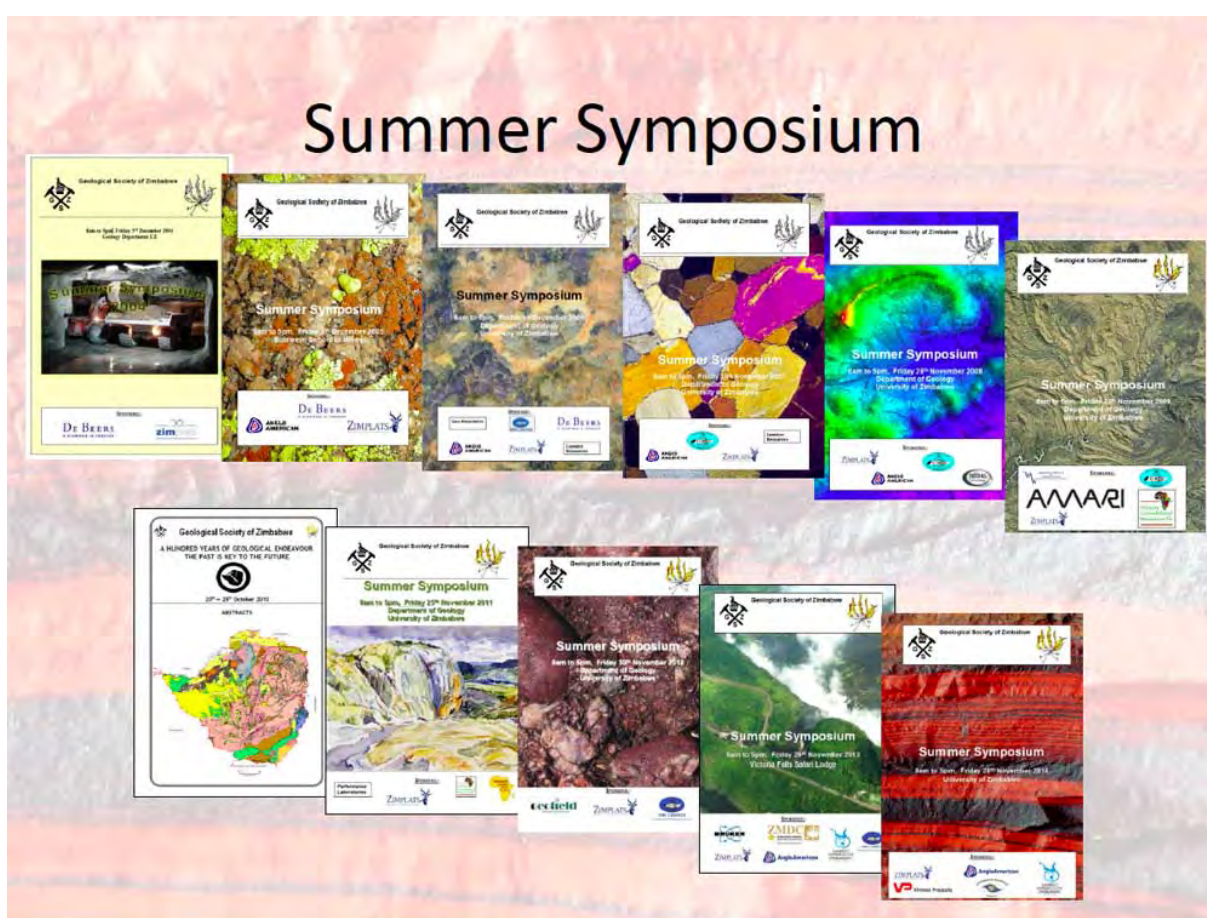
Geological Society of Zimbabwe



Newsletter



February 2015



The annual Summer Symposium has been a regular feature of the Society's programme for 13 years, and Andrew du Toit has organized the event for 12 of these years.

www.geologicalsociety.org.zw

The Geological Society of Zimbabwe, P.O. Box CY 1719, Causeway, Harare

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Editorial

Its AGM time as Andrew du Toit's year of office draws to a close and this year we welcome Ali Ait Kaci to Chair the incoming Committee. It is appropriate, therefore to give you details of the AGM venue and agenda, as we look forward to meeting up with you:

Notice is hereby given that the Annual General Meeting (AGM) of the Geological Society of Zimbabwe will be held as follows:

Date: 13th March 2015

Time: 17.00 hours

Venue: **The Country Club (CFX) Brompton Road, Highlands, Harare**

K. Musiwa
Hon. Secretary

AGENDA

1. CONVENING THE MEETING
2. OBITUARIES
3. APOLOGIES
4. MINUTES OF THE PREVIOUS MEETING
 - 4.1 Consideration and approval of the minutes
 - 4.2 Matters arising that are not covered in the agenda
5. CHAIRMAN'S STATEMENT
6. TREASURER'S REPORT
7. SURVEY FEEDBACK
8. ANNOUNCEMENT OF THE NEXT COMMITTEE 2015 – 2016
9. ANY OTHER BUSINESS

Dinner will commence at 1900hrs at a cost of \$20.00 per person with

10. A PRESENTATION BY DR RICHARD OWEN
11. AND AWARDS AND PRESENTATIONS
 - 11.1 A.E. Phaup Award
 - 11.2 Mike Vinyu Award
 - 11.3 Keith Viewing Award

This issue highlights some of the proceedings of the Summer Symposium, an event that has become a focal point of our Society Calendar. The front cover serves to highlight the thirteenth consecutive year in which this event has been staged, and we should recognize the sustained effort that Andrew du Toit and his sub-committees have put into organizing this interaction over the past twelve of those years, notably the celebration of the Centenary of the Geological Survey in 2010 and last year's Victoria Falls International Symposium. The vital message being expressed at the Symposium and in this Newsletter is for the "Powers that Be" to take cognizance of the need to review and adapt existing policies that affect the minerals and mining industry in Zimbabwe in a positive light to enable the attraction of the investment we so desperately need. Finding new mineral deposits and developing those deposits to production is a risky and time-consuming process. If we do not attract this available "free" cash, it will go some place else. We only need look at Tanzania, which in 1982 had a gold production of **zero**, but with a positive liberalization of policy that country is now significant in African and indeed World gold production. We know that the Hon. Fred Moyo, Deputy Minister of Mines and Mining Development took note of this message following his opening remarks at the Symposium. It is time to halt this prevarication over our mining legislation, and to put its wisdom into good practice in all of our interests.

Another highlight of 2014 within the Society is the establishment of our Website. A job well done, and a facility we must sustain. A challenge to the incoming Committee might be to make this Newsletter available on the Website, and thus broaden our outreach.

As always, we extend a grateful thank you to our regular contributors for their continued efforts in providing script.

Tim Broderick



Chairperson's Chat

Andrew du Toit

The Summer Symposium which was held on the 28th November at UZ was a success. The symposium was officially opened by the Deputy Minister of Mines and Mining Development, the Hon. Fred Moyo MP, and thirteen speakers presented a range of papers that focused on various aspects of the mineral potential of Zimbabwe. Copies of the presentations can be found in the News section of the Society Website.

The Society Website is now complete and fully functional – check it out: www.geologicalsociety.org.zw. In particular have a look at the Atlas Section where a number of outcrops and field trip locations can be viewed through a *Googlemaps* interface and their details accessed. There are descriptions, maps, photos and papers relating to each location. This is a collaborative effort so you are encouraged to register and contribute either your own sites and photographs or comment on sites that have already been uploaded. We hope that this will develop into a lively forum for debate on various aspects of Zimbabwean geology. Your participation is required for this to be a success.

A number of events are planned, please put the following in your diary.

Date	Event	Description	Champion
13 March 2015	AGM – Country Club, Brompton Road, Eastlea	Friday evening – speaker, Richard Owen	
23-25 May 2015	Chewore Dinosaur Track Site	Weekend field trip	Ali Ait Kaci
18-19 July 2015	Buchwa Mountain	Weekend field trip / Overnight camping	Charles Castelin
Sept 2016	IGC, Cape Town with Zim excursions	Events / Sharad Master	Gayle Hanssen

The Website also has an up to date membership list in the Membership Section. This list is becoming an increasingly important reference for people wishing to check on the credentials of people claiming to be Geological Society Members. Please check your details and if you have any queries contact our administrator, Julie Kuhn, geol.soc.zimbawe@gmail.com Julie is in the Society's office in the Geology Department at UZ most Wednesday afternoons if you need to drop off or collect anything.

I look forward to seeing you at the AGM on 13th March.



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Articles and Reports

Policy Development and its effects on mineral resource rich countries: from potential to actualisation

Benjamin Mapani

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A global survey on exploration budgets around the world from 2000 to 2012 reveals that while a general increase is observed, the increase is affected by results of inflation, currency fluctuations and a marginal real value increase. A critical analysis shows that mineral policies in various countries around the world have a direct bearing on the foreign direct investment stemming from mineral exploration.

One country that seems not to follow the trend is investment sourced from China, which has consistently grown regardless of the perceived risk factors in certain countries. In market driven economies, it is clear that countries such as Canada saw a lower rate of increase between 2011 and 2012 because of new changes in the mining law in the province of Ontario. European countries that were most affected by policy changes include Poland, which increases taxes on processing, and Bulgaria, which could no longer process its ore due to EU environmental requirements. African exploration activity varied greatly according to country specific fundamentals. The issues that affected African countries were (i) mineral supply concerns due to changes in mineral regulations; (ii) labour issues; (iii) issues concerning artisanal mining, e.g., copper artisanal miners in DRC; (iv) conflict minerals; (v) government pressures and political instability. Increases in mine taxes in Burkina Faso, the DRC, Guinea, and Senegal affected the rate of investment flow. Changes in mineral regulations in Namibia affected direct capital investment in 2010-2012, and proposed tax increases in Ghana and Cote d'Ivoire in 2012 ensured that investors had to wait and see what the margins of increase would amount to before investing. Latin America continued to be the preferred continent for major mineral investment projects.

A total of US\$20.53 billion was invested in metals and coal exploration (non-oil and gas) in 2012; this went mainly to gold (54%); base metals (17%); uranium (5%); diamonds (2%) and coal, iron ore and all other commodities accounted for 22%. This amount is shared as follows by continent/country: Latin America 25%; Africa 17%; Canada 16%; Rest of the World 15%; Australia 12%; United States of America 8% and the Asia Pacific Region obtained 7%. Junior companies continue to raise more funds for exploration across the globe, and accounted for 57% of the budget share in 2012. Australian companies had a total of 650 exploration projects in 37 African countries. It looks increasingly certain that more exploration is poised to continue in Africa, the question is which countries will benefit from this capital inflow? The countries with the lowest risk are currently attracting a lot of money.

Overview of Zimbabwe's Mineral Resource Potential – Tip of the Iceberg?

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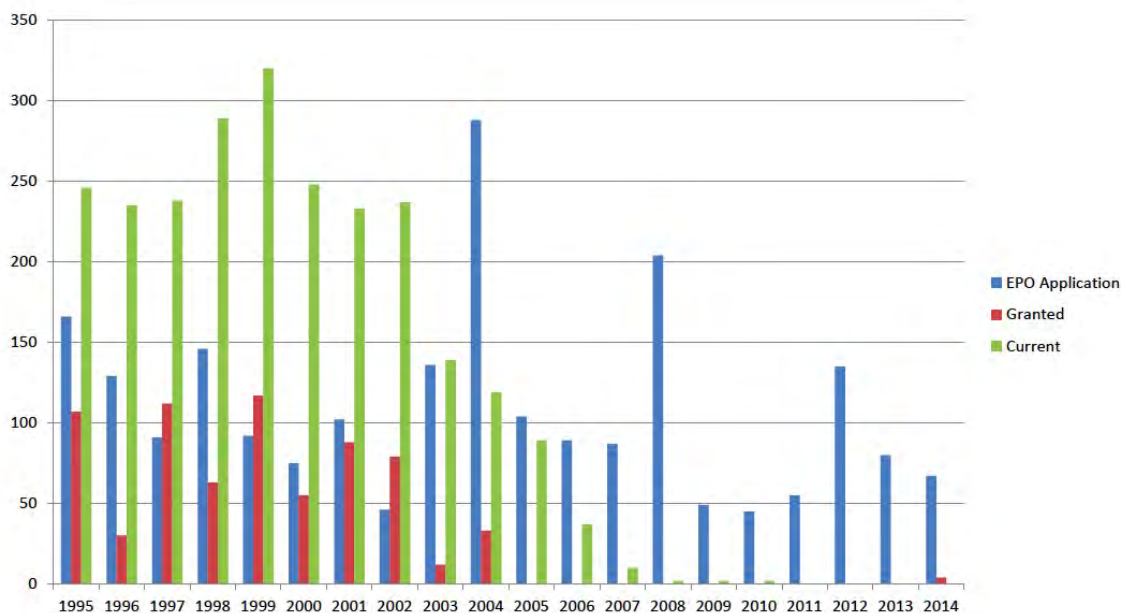
With a heterogeneous geological environment spanning a period from the present era to the Archaean, Zimbabwe is favourable for occurrences of a variety of mineral deposits and ore body types. This rich mineral endowment was perceived by respective visits by Arabs and Portuguese during the 10th and 16th centuries respectively, when they recognised extensive ancient workings in many parts of the present day Zimbabwe. Corroboration of these observations by adventurers and hunters such as Karl Mauch, Thomas Baines, Henry Hartley and Frederick Selous who visited the country early in the 19th century inspired Cecil John Rhodes to conquer the country to secure the mineral riches. Zimbabwe is therefore perhaps the only country whose colonization by Europeans can be attributed to its perceived mineral riches.

Although not as per the expectation of discovering huge mineral deposits following colonization, the mining industry gradually grew to become an important sector of the economy. Over 40 different economic minerals have been mined from more than 6000 prospects, making Zimbabwe one of the best-known mineral-rich countries. World-class deposits of gold, asbestos, platinum, chromite, coal, coal-bed methane, diamonds, nickel, and pegmatite minerals have now been recognized in Zimbabwe's geological environments.

Despite the apparently rich mineral endowment and a long history of mining activity, various technical and political reasons have hindered full realization of Zimbabwe's mineral potential. Available information suggests that only a small portion of the huge 'iceberg' of our potential mineral resource has been identified. Arguments supporting this concept are as follows:

- The country's laws do not compel companies to delineate certain resources before mining. Consequently, resources at many mineral deposits are not known. The majority of mines operate at zero reserves or may only calculate reserves a few months ahead of production. Small-scale producers, who dominate the industry, do not have the capacity to delineate reserves. However, many mines have been intermittently worked for nearly 100 years on this basis without being exhausted. This suggests that there are substantial mineral reserves at many deposits, most of which have only been sporadically worked.
- Political and economic challenges faced by the country at various stages of its development have hampered the use of modern equipment and technology such as high-resolution geophysics and geochemistry, remote sensing, and manipulation of large datasets in Geographical Information Systems (GIS) that have contributed immensely to the discovery of mineral deposits in other countries. Systematic green-field exploration in Zimbabwe has virtually stopped.
- The post-independence influx of mining companies with requisite capital, technology and innovative ideas resulted in the recognition of world-class mineral deposits at several mines including Ayrshire, Connemara, Eureka, Giant, Freda-Rebecca, Indarama, Isabella, Pickstone, Royal Family, Turkey, and Vubachikwe, that had previously been considered to be small deposits. New discoveries were also made at the Maligreen, Ipanema and Hungwe gold deposits. This period coincides with the discovery of the Kanyemba uranium deposit and commissioning of the Hartley Platinum Mine, and the exploration window that lasted less than ten years clearly demonstrates that given an environment that encourages exploration, this country has unlimited opportunities for mineral discoveries.

Systematic exploration has virtually stopped.



- Although small-scale mining, for which Zimbabwe is renowned, often points to possible significant mineralization, the partitioning of ore bodies by small-scale mining claims belonging to different owners has presented challenges to modern scientific exploration. The potential of such areas remains, obscured although consolidation of some claims has occasionally led to a major mineral discovery, e.g. the Vubachikwe deposit.
- The structure of the mining industry in Zimbabwe is highly skewed as there is now a gap between hundreds of small-scale mines and a few large mines. The apparent dearth of medium sized mines indicates that there are many small mines or groups of claims with a potential to develop into medium and large-scale producers.
- The majority of those mines re-discovered following colonization of this country have ceased operations, with only a few having been mined to significant depths from the surface. Most of these have never been scientifically investigated. Reasons for the closure of the majority of mines are unknown. Technical data on many of these dormant workings is clearly suggestive of the need for further investigations. Thus with hundreds of old mines dotted across the country, opportunities for re-discovering some of them as large deposits are enormous.
- Large areas of the country that have not been considered for mineral exploration, simply because they do not have an obvious history of mining, are proving to be fertile ground. These include minor greenstone belts such as Mount Darwin (Ruia and Mukaradzi), Dindi (Ball Mine area), Makaha (Chipenguli Hill), Mutare-Odzi (Penhalonga), Beatrice (Beatrice-Roma), Felixburg and Lower Gwanda (Antelope and Legion areas), the Limpopo Mobile Zone (Ngundu area), and the Umkondo basin (Tarka Forest gold, Marange and Chimanimani placer diamonds).

- Zimbabwe has a similar geological environment to some great mineral producing countries such as Australia and Canada. There are no geological reasons to explain the current differences in the nature and size of mineral deposits in Zimbabwe and those in these countries. Current studies of Large Igneous Provinces and super continents are not only suggesting diachronous evolution of these geological provinces, but that some of them formed as a unit in space and time and later separated. They thus should share many similarities including mineral potential.

Just like the tip of the iceberg, Zimbabwe's known mineral resources are therefore undisputedly representing a small part of the possible resource. That the country remains under-explored despite the overwhelming mineral potential has more to do with policy issues than geological limitations. In the same way that appreciation of the full size of an iceberg can only be achieved by probing beneath the protruding above water, realization of the full mineral resource of the country can be accomplished by comprehensive exploration and research. Systematic exploration in Zimbabwe has virtually ceased. Favourable policy intervention and concerted research are necessary to promote mineral exploration to reveal the nature of our 'iceberg'.

A snapshot of PGE resources of the Great Dyke

Collins Mwatawa
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The Great Dyke of Zimbabwe is a major repository of world-class Platinum Group Element (PGE) resources that are associated with Nickel, Copper and Cobalt mineralization. The Great Dyke is a layered mafic-ultramafic intrusion that transects the Zimbabwe Archaean Craton over a distance of some 550km. It is an elongate body with a maximum width of 12km, and in transverse section is trumpet-shaped. The Great Dyke is divided into two major successions - an upper sequence of mafic rocks consisting of gabbro and norite and lower ultramafic succession made up of dunite, harzburgite, olivine pyroxenite and pyroxenite.

Several occurrences of PGEs in different stratigraphic and structural positions have been identified within the layered sequence of the Great Dyke and its marginal rocks. The PGEs are associated with the Main Sulphide Zone (MSZ), Lower Sulphide Zone (LSZ), chromite layers, the marginal sequence and in gabbroic rocks. The MSZ is the most important source of world-class PGE resources, and quantification of the resources in light of ongoing exploration is the focus of this presentation.

It is believed that the MSZ was originally a continuous layer over most of the length of the Dyke. Erosion has subsequently removed much of the cover mafic sequence including the MSZ, leaving remnant portions with preserved mafic cover rocks in the Musengezi, Darwendale, Sebakwe, Shurugwi and Wedza sub-chambers. The economic PGE resources are confined to a 2-3m-zone of the MSZ within the Wedza, Shurugwi, Sebakwe and Darwendale sub-chambers. The MSZ mineralization is uniform over the Great Dyke, subtle vertical variations in distribution of the PGEs occurring within each sub-chamber.

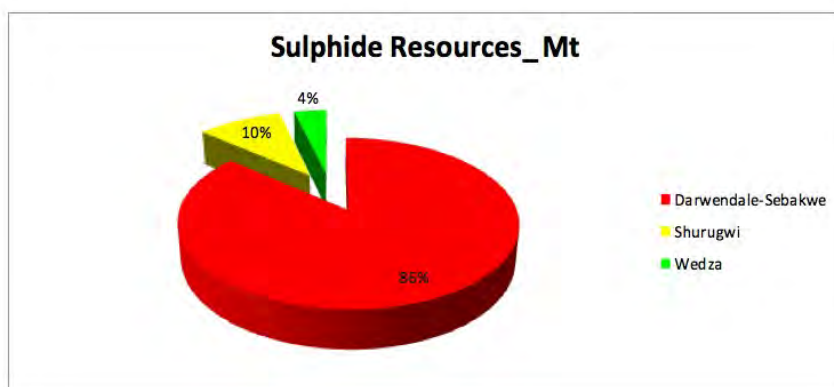
The resources stated in this report are a result of concerted exploration work that has been carried out over the past decade by mining companies on the Great Dyke whose resources are audited and verified by independent third parties before publication in their annual reports.

The resources as published by the mining companies follow SAMREC or JORC reporting guidelines and are compiled by competent persons on PGE mineralization.

Sulphide Resources distribution

Resources Compiled from Published Annual Reports
Subject to peer and external reviews.
4E= Pt +Pd+Rh+Au.
Table-Sulphide resources.

	Mt	4E_Moz	4E_g/t
Zimplats	1990.8	216.6	3.38
ZMDC and Other	873.2	99.1	3.53
ENRG	91.3	10.7	3.64
Mimosa	117.1	13.8	3.67
Unki	236.5	32.0	4.21
Total	3308.9	372.2	3.50



A total inclusive sulphide resource of 3.2Bt has been reported by mining companies operating on the Great Dyke with a total 4E content of 373.6Moz, which reflects increased exploration and understanding of the MSZ PGE mineralization. The total Pt resource of the Great Dyke had been estimated at 143Moz by Prof. Grant Cawthorn in 2009. The 4E average grades, at resource cuts of 180cm to 250cm, range from 3.6g/t to 3.3g/t. The Darwendale and Sebakwe sub-chambers have the largest PGE resources followed by Shurugwi sub-chamber and Wedza Complex with 86%, 10% and 4% respectively in terms of resource tonnes, and 84%, 11% and 4% respectively in terms of 4E ounces. Oxide resources approximate 3-4% of the total sulphide resource.

A Comparison Between the PGM Mineralogy of the Pristine Sulphide and Oxidised Ores of the Wedza Complex of the Great Dyke, Zimbabwe

Freddy Chikwiri
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This presentation will give a qualitative and quantitative overview of platinum-group minerals (PGM) composition in the pristine sulphide and in the oxidised ores in order to establish how weathering affects PGE distribution in the rather complex surface oxidised ore. Estimated value and potential for future mining will also be discussed.

The Great Dyke, striking NNE and approximately 550 km long and 4-11 km wide, is an Archaean (2575.4 ± 0.7 Ma) linear layered intrusion, which comprises an upper mafic

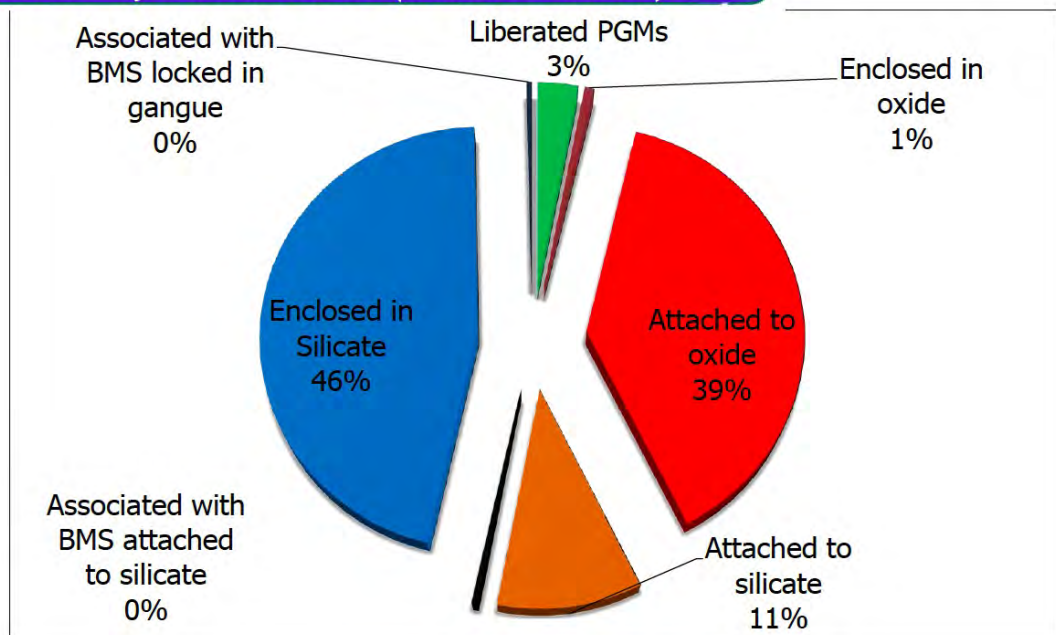
sequence and a lower ultramafic sequence. The Great Dyke holds the second largest reserve of PGE after the Bushveld Complex in South Africa, and its oxidised ores represent a treasure chest for future mining. Recent attempts at mining oxidised ore have been hampered by the low recoveries of PGE. Economic concentrations of PGE in the Great Dyke are hosted in the Main Sulphide Zone (MSZ) which is a 2.5 m-thick PGE-rich layer located at the base of websterite and orthopyroxenite contact. The pyroxenite comprises cumulus opx altered to hydrous silicates, intercumulus plagioclase, cpx and a late stage, high temperature assemblage of quartz and K-feldspar. In the oxidised ores, base metal sulphides (BMS) are replaced by iron hydroxides. PGMs were identified using a Mineral Liberation Analyser, which is an automated FEI Quanta 600 Scanning Electron Microscope (SEM), and also using a Scanning Electron Microscope (SEM) Jeol5610 at IGEM RAS.

PGM in sulphide ore have been found to exist as magmatic primary PGM, mainly PGE bismuth tellurides, sperrylite and cooperite/braggite chiefly associated with BMS. Weathering of the pristine sulphide ore has changed the PGM proportions, distribution and textural setting. In the oxidised ore PGM exist as:

- i. Relict primary PGM mainly sperrylite, minor Pt_3Fe as well as rare laurite, Pt-Ir sulphoarsenides and Pt-Pd bismuth tellurides.
- ii. Secondary PGM neof ormation (e.g. Pt- complex alloys with Bi and Te admixtures, Pt-Fe alloys with Cu and Pd admixture, Pd-Hg compounds and Au-Ag alloys)
- iii. PGE oxides and hydroxides either in altered primary PGM or representing neof ormations (e.g. PdO and PdO₂).

All these species in oxidised ore are associated with iron oxides, silicates (mainly bronzite) and hydrous silicates. In the samples studied, PtAs₂ is the most stable PGM in the supergene environment and it occurs as fresh grains or grains with altered surfaces coated by low reflectance Pt oxides/hydroxides. There is a significant Pd loss during weathering and its fate at this time is unknown. There is also a conspicuous gain in Cu and Au, which might be due to a secondary supergene concentration process that concentrates the metals in narrow newly forming cementation zones.

PGM Mode of Occurrence (Oxidised Ore)



The redistribution of PGE in oxidised ore creates metallurgical complications in that the ore cannot be upgraded by conventional metallurgical methods. Suggested possible pyrometallurgical and hydrometallurgical methods by Evans (2002) require large-scale technical equipment and expensive equipment and are hence uneconomic to use at present. Further research is needed to develop novel metallurgical methods in order to convert this sitting resource into a minable reserve.

Hydrocarbon Potential in Zimbabwe

Brent Barber

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The possibility of discovering oil or natural gas in Zimbabwe is one that has frequently been raised and, due to the costs in foreign currency of purchasing petroleum products, remains an intriguing question.

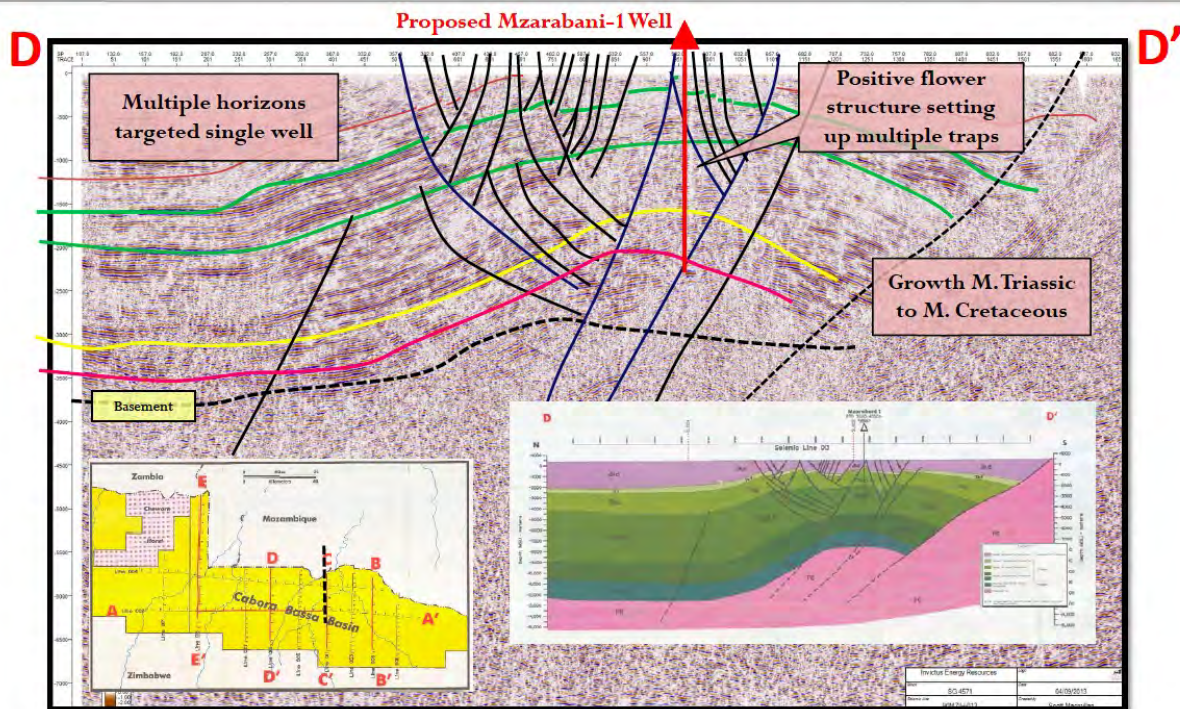
Decades ago it was believed that hydrocarbons formed virtually exclusively from the decay of micro-organisms under anaerobic conditions within marine sediments of Cainozoic to Mesozoic age. In Zimbabwe, as life did not proliferate until the Phanerozoic, the prospects of finding oil were considered relatively meagre, with sediments possessing the potential to possibly generate and host hydrocarbons restricted to the Zambezi and Save-Limpopo Rift Trends.

Contrary to malformed rumour Mobil Exploration Zimbabwe did not discover oil during the investigations undertaken along the mid-Zambezi Valley in the early 1990's. What the exploration completed did confirm was the presence of very thick sedimentary piles of Karoo and younger strata which, in the Cabora Bassa Basin, are over 10 kilometres thick. At this time the source rocks sampled were determined to be predominantly gas-prone and, as

insufficient interest in the joint venture drilling of a well could be generated, the prospect was judged to be of too high risk and the option to continue the exploration was discontinued.

Some 20 years later exploration concepts, proven by the discovery of oil in similar depositional environments as close as the Albertine Graben in Uganda and Lokichar Basin in Kenya, have evolved and the hydrocarbon potential of the sedimentary basins in the mid-Zambezi and Save-Limpopo areas merit reappraisal.

Mzarabani Prospect - Seismic Line 13



The Waterberg Platinum Discovery

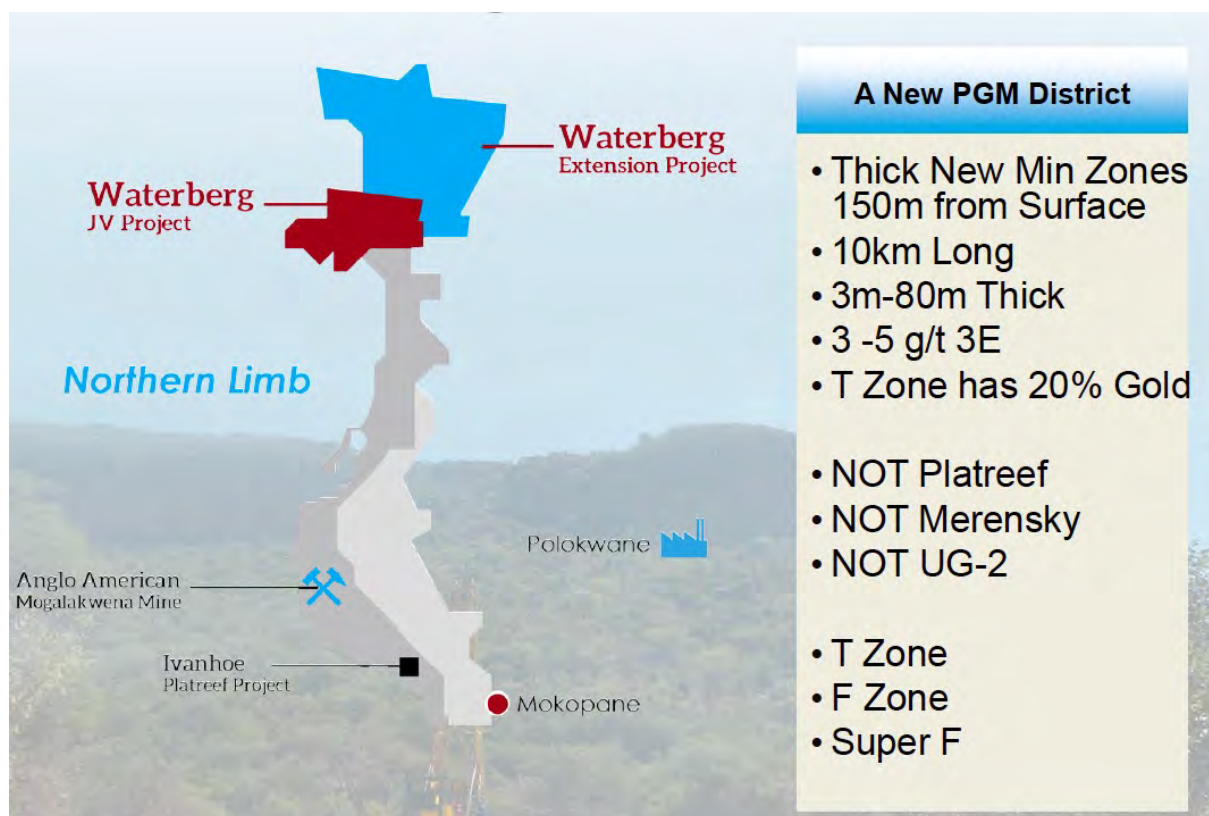
Gordon Chunnnett
gchunnnett@yahoo.com

The art of exploration is seldom more thrilling than when turning over a stone, done so many times before, but this time looking differently and finding treasure. The Waterberg Platinum Discovery continues to amaze even our own pundits such that we can't wait to bring this new deposit to account. The team were set a task and have steadfastly opened up new ground on strike to expose new mineralized units of unimaginable geological astonishment. Recently 80m at 4g/t (32,000cmg/t) has yet to be added to this already-announced 29Moz Pd, Pt, Au deposit.

The mineralization is atypical of the known platinum horizons including that of the Platreef. Consequently direct lateral comparisons are avoided. Suffice to say that with the

metallurgical work to hand the recoverability is at levels of at least Platreef-style deposits.

Cunningly this deposit is masked by variable thicknesses of Waterberg sedimentary material in a relationship yet to be confirmed, but intriguingly atypical, with sniffs of the textbook-rewrite type. The PTM team is commended for a great piece of work concluded so far with wide-open horizons ahead.



Exploitation of gangue minerals and their contribution towards a country's economic development

Kennedy Magomo

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Gangue minerals are commonly defined as “that portion of an ore deposit that is of no commercial value but which cannot be avoided during mining - it is removed during processing as waste.”

These gangue minerals occur in all rock classes and geological environments so can be found everywhere. However, it is when these gangue minerals become highly concentrated through various geological processes (igneous, metamorphic or sedimentary) in sufficient quantities at their highest level of purity do they become industrial minerals. Industrial minerals are therefore geological materials that are mined for their commercial value, which are not fuel minerals and are not sources of metallic. They are used in their natural state or after beneficiation either as raw materials or as additives in a wide range of applications. These industrial minerals are processed to optimize their intrinsic properties in order to obtain the required characteristics and specifications such as strength, conductivity, electrical and heat

resistance, etc. These properties are then used in various applications that are linked to human standards of living and to the level of economic development of a country. It is proven that countries that make full use of industrial minerals are more developed as compared to those who make little use of these resources. Zimbabwe is endowed with a variety of these, and this paper will seek to highlight what Zimbabwe can do to optimise the use of its “gangué”/industrial minerals.

WHAT ZIMBABWE/ANS NEEDS TO DO

- **Improve Infrastructure**
 - Rail, Road, Electricity and Access to Port (s)
- **Improve Operating Environment**
 - Too many Laws (>20 Statutory Instruments for mining)
 - Simplify laws (Indigenisation too complex)
- **Simplify export process**
 - Just in Time Delivery (e.g Japan)
- **Tax Incentives**
 - Lower Royalties
- **Develop factories for local market**
 - Tiles, Paper (tissues), toothpaste, foundry



News



Geology Department, University of Zimbabwe

For you Geology Students, the following is a small insight into why your Society perpetuates the name “Mennell”.

“*Tangasaurus* is an extinct genus of aquatic basal tangasaurid neodiapsid known from the Late Permian period (late Changhsingian stage, 252.5-251 Ma ago) of Tanga, northeastern Tanzania. It contains a single species, *Tangasaurus mennelli*. *Tangasaurus* is known only from three syntypes, which represent two individuals. The smaller is well preserved in two specimens (part and counterpart), and is known from a partial skull and a nearly complete postcranial skeleton, was designated as the lectotype of the genus. The part slab (showing the

partial skull and postcranial) is hosted at the Natural History Museum in Bulawayo, Zimbabwe, while the counterpart slab SAM 6231 (showing the other side of the postcranial) is hosted at the South African Museum, Cape Town. The third syntype, SAM 6232, represents a nearly complete postcranial skeleton from a larger individual, but it is poorly preserved. All specimens were collected by F. P. Mennell in 1922 from the Mizimbazi River near Tanga City, northeastern Tanzania, which is in the Ruhuhu Valley.

Tangasaurus was first described and named by Sidney H. Haughton in 1924 and the type species is *Tangasaurus mennelli*. The generic name is derived from the name of the Tanga Region in which the only known specimens were found, and Greek *sauros*, meaning "lizard". The specific name honours F. P. Mennell, the geologist who reported and collected the specimens of *Tangasaurus*." (Wikipedia).

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Note: DG – Department of Geology; GSZ – Geological Society of Zimbabwe

Other Staff Members at DG: Dr T Mulugheta; Dr T Njila; Mr T Marova; Mr G Chinoda; Ms D Mudimbu

The Professor Tom Blenkinsop UZ Geology Field Trip Fund

Following the successful presentation of the 2013 A.M. Macregor Memorial Lecture in Harare and Bulawayo, and his lead of the field trip in the Renco Mine area, Professor Tom Blenkinsop made a generous donation of \$200 to the Geological Society of Zimbabwe (GSZ). This was in support of University of Zimbabwe (UZ) geology student field trips. Over the years the UZ Geology Department has been under funded, resulting in their failure to raise sufficient money to conduct the mandatory field trips for its students. The GSZ responded by donating funds and materials from its own resources as well as from members. This assistance went towards the welfare of the geology students, especially in meeting costs for field trips.

Using the donation from Prof. Blenkinsop as seed money, the GSZ has now established the “*Professor Tom Blenkinsop UZ Geology Field Trip Fund*” to be administered by its Executive Committee. Tom has indicated an interest in supporting the Geology Department on a long term basis, not only to help in mobilizing funds for various activities, but by also providing moral and material support. Annually the students go on their main field trip, which lasts around 2 weeks with direct costs being in the range of \$6000 per class. Therefore we are appealing to all our members to donate generously to this worthy cause both in cash or

in kind. Materials such as fuel and food are most welcome.

The direct benefits that accrue to the geological profession are that it ensures a properly trained graduate. Referring to the adage that the best geologist is the one who has seen the most rocks, our students need quality field trips. From these field excursions we also want to develop the Zimbabwe Geology Atlas.

Your donations, either in cash or in kind, should be forwarded to our Treasurer, Collins Mwatahwa – E-mail: cmwatahwa@Angloplat.com or to our Administrator, Julie Kuhn - E-mail: geol.soc.zimbabwe@gmail.com

THANK YOU FOR YOUR GENEROSITY

H. N. Gumbo

June 2014



ZIMBABWE

Geological Survey Department

Forbes Mugumbate

Staffing matters

The Ministry continues to recruit geologists and technicians to work in the newly established Provincial offices. A number of these recruits are still attached to the Geological Survey while their offices in the provinces are being secured. Those that have already been deployed to the provinces are clamouring to come back to the Geological Survey as they are finding the going tough on their own. Nearly all of them are raw, having been working as high school teachers for many years. They need training and some experience before they can be deployed to work on their own. This is presenting challenges as the department has limited facilities to train and mentor so many aspiring geologists.

The Ministry is still working on how the activities of professionals in the provinces will relate to the functions of the existing technical departments of the

Geological Survey, Mining Engineering, and Metallurgy as there are differences in the interpretation of a new structure from the Public Service Commission. While some in the Ministry understand the structure to mean that the professionals will be in the Provincial structures divorced from line departments, others believe that they are still under departments in line with their professions. The Geological Survey is of the opinion that provincial geologists and their technicians should fall directly under the department to enable allocation of resources and distribution of individuals to perform tasks commensurate with their capabilities. It would also be easy for the Department to audit and edit work by individual officers from Provinces, which conform to departmental and international best practices.

The African Development Bank Project

More geological and cartographic equipment purchased under the African Development Bank (AfDB) project has been delivered. A hole had to be punched into the wall of a room in the first floor of the Maufe Building to allow delivery of equipment that was too big for conveyance through the corridors.

Meanwhile suppliers of geophysical equipment flew into the country to assemble the equipment and to train members of staff on how to operate the new equipment.

MINING INDUSTRY NEWS

Forbes Mugumbate

Mineral exploration

In his keynote speech at the Geological Society of Zimbabwe Summer Symposium held at the University of Zimbabwe in November 2014, Professor Ben Mapani contended that money injected into economies through mineral exploration projects is free money - just like money coming from tourism. Countries should allow companies to secure ground for exploration in return for money to be spent on the exploration projects, in employment, the generation of geological information, and in proving possible new mineral discoveries. With its extensive mineral potential, discussed at the Symposium, Zimbabwe can sustain unprecedented exploration projects. However, currently there are only five active EPOs, which were granted in mid-2014. It is also apparent that nearly all Special Grants for coal and coal bed methane (CBM) have expired, and these have not been renewed. The country therefore continues to lose ground in its need to find and develop new ore bodies.

These negative facts suggest that there must be some policy bottlenecks hindering normal mineral exploration activities.

The recent resuscitation of the Mining Promotion Corporation (MPC), a government-owned company responsible for mineral exploration, is believed by government to be the panacea to mineral exploration in the country. Where the company will get the risk capital required to sustain this exploration, given the state of our economy, remains to be seen.

Meanwhile **Daniel Chatora** who was the acting CEO of the MPC has left the company, and is back at Metallon. The vacant CEO post has already been advertised in local newspapers.

Mines and Minerals Amendments

We reported in previous issues of the Newsletter that government had abandoned the process of amending the current Mines and Minerals Act, Chapter 21:05, preferring to generate a new Act, which was to be preceded by a minerals development policy. A consultant who had been engaged had already completed public consultations to gather information to be included in the policy. However, for some reasons, government has returned to the route of amending the old Act. Several meetings have already been held to discuss an amendment draft to be submitted to the Cabinet Committee on Legislation. We can only hope that this time the amendments will be completed.

New Mining Cadastre

The project to modernise management of mining titles has progressed with the awarding of a tender to one of several companies that submitted bids for executing the project. The project will commence soon after the company signs a contract with government.

Alluvial Gold Mining

After successfully campaigning for banning of alluvial gold mining, which resulted in significant loss of gold production and jobs, the Zimbabwe National Water Authority (ZINWA) has come up with a concept of de-silting suspected gold-rich rivers. The process involves ZINWA allocating licences to private companies to de-silt allocated portions of rivers and dams along rivers in return for a royalty on gold recovered. How this concept that restricts the de-silting activities to active river channels will succeed remains to be seen.

De-silting of rivers may be a noble idea, but this concept is inspired by the perceived gold contained in some river alluviums. The question that arises is whether rivers such as the Save, with no gold, which are chocking with silt and sand emanating from poor farming (not mining) practices, will ever be de-silted.

\$100 million facility for Small-Scale Mining

The government has approved a guarantee for small-scale miners to access a US\$100 million line of credit from a Chinese Developmental Bank. The loans that will be accessed through a local bank will be used to purchase mining equipment from XCMG of China.

Platinum Refinery

A platinum export levy announced by government in 2013 to compel platinum mining firms to beneficiate PGMs locally is now mired in controversy after the planned deferral of the tax to 2017 was not provided for in the country's 2015 Finance Bill gazetted on 9th January. Companies fear that if government does not address their concerns the effective rate of royalty for platinum miners would rise to 25 % over and above other numerous fragmented existing mining charges. Government has promised to impose a total ban on raw platinum concentrates exports in the near future.

The country has three active platinum mines, namely Ngezi, Unki and Mimosa, and a number of projects, including Todal, Ruschrome, and Global Platinum are at different stages of development.

Chamber of Mines appoints CEO

Isaac Kwesu, an economist, has been appointed Chief Executive Officer of the Chamber of Mines of Zimbabwe with effect from January 2015. Mr Kwesu joined the Chamber of Mines in 2011 as the Chief Economist and was subsequently appointed acting Chief Executive Officer in March 2014 until his substantive appointment. During his acting tenure, Isaac presided over the formation of a Zimbabwe Mining Industry Advisory Board to help the government on policies aimed at facilitating the growth of the resources sector. The Board comprises stakeholders in the mining sector, members of the private sector, the academia and the Chamber of Mines in Zimbabwe.

News about Zim Geoscientists

We hope your contributions may improve with the Facebook initiative. Talk to you on the Geological Society of Zimbabwe Group, an open link. Join us there for better communication.



There is a closed group on Facebook, “*Interaction of Zimbabwean Geologists and Geoscientists*”, which has 556 Members from all over the World. It is administered by **Emissary Macdee Isaac** (UZ 2006-2009) who works at Chibuluma Mines Plc in Zambia, **David Katemaunzanga** (Wits 2009-2013) formerly Senior Project Geologist at Bastillion Resources, **Portia Mungate** (UZ 2006), **Benedict Mabenge**; **Senzeni Maggie Mandava** and **Benson BaRopa Bhunu** who works in Namibia. By visiting this site, the chances are that you will link up with old friends and colleagues.

Please provide us with news about yourself or other geologists. We need to keep in touch with all of you out there. E-mail: andrewdutoitzim@gmail.com or makari@zol.co.zw

Conferences

Groundwater: From Theory to Action. 14th Biennial Ground Water Division Conference and Exhibition, Muldersdrift, South Africa – 21-23 September, 2015. Contact Conference Secretariat, Geological Society of South Africa at info@gwd.org.za

The Southern African Institute of Mining and Metallurgy (SAIMM), the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) and the Australasian Institute of Mining and Metallurgy (AusIMM) will jointly convene a **World Gold Conference** at Misty Hills, Gauteng, South Africa in September 2015. Contact: camielah@saimm.co.za

The 23rd International Geological Congress, Cape Town, South Africa – 2016.

3D EARTH EXPLORATION (Pty) LIMITED

Geophysical Contractors & Mineral Exploration Consultants

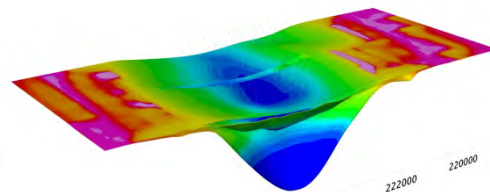
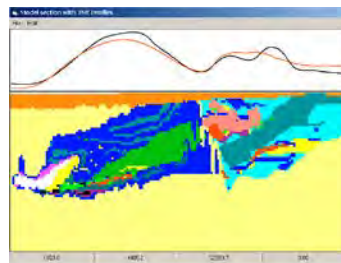
3D Earth Exploration is a Botswana-registered company operating in the Africa theatre and provides the following services:

- Ground geophysics surveys
- Physical rock properties measurements ...&... 3D Data processing and interpretation

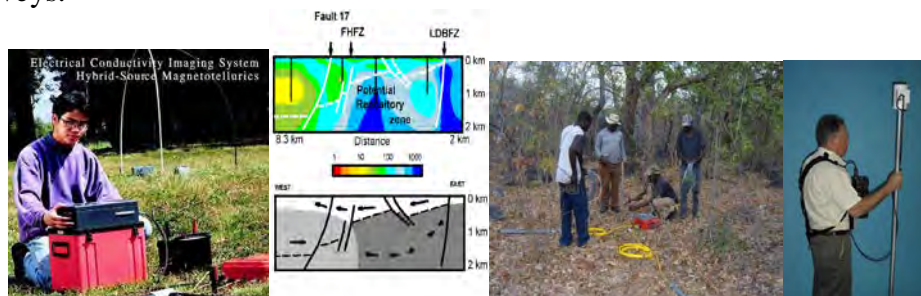


GDD MPP-EM2S+ Magnetic susceptibility and conductivity probe and aximOnsite data processing

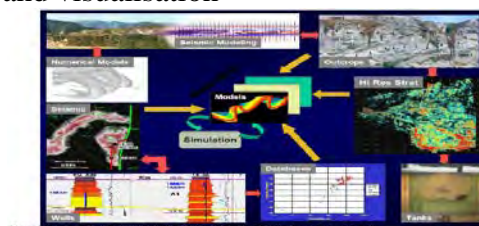
- 3D magnetic and gravity data modelling



- CSAMT, ground magnetic surveys, Induced Polarisation, gravity (CG3/5, La Coste), rock properties, EM, GPR, radiometrics and a wide range of other ground geophysics surveys.



- 3D Data integration and visualisation



CONTACT:

For more information please contact Mr Hillary Gumbo +263-772-566912, email: hgumbo@mweb.co.zw



GSZ Research and Development Fund

Enquiries relating to the distribution of funds through this facility should be made through the standing Chairperson.



SEG Timothy Nutt Scholarship Memorial Fund

This fund will be available to provide financial support for geology students and young economic geologists located in Zimbabwe or in Southern Africa with ties to Zimbabwe. The fund may be used to support SEG student chapter activities, travel to meetings, field trips, for research or study grants, technical lectures or any other activities approved by the SEG Regional Vice President for Africa.

Applicants must describe what the project is, why the research is important and how it is to be done.

An estimate of expenses for the project must be included with the application.

Grants are expected to be fully utilized by year-end.

Grant recipients are required to provide a year-end accounting of how the money was spent together with a suitable progress report or final abstract.

See the Society of Economic Geologists website for further details and the next call for applications.

GEOLOGICAL SOCIETY OF ZIMBABWE: CONTACT DETAILS OF MEMBERS OF THE EXECUTIVE COMMITTEE FOR 2014		
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Institutional Membership, 2014

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 Chamber of Mines of Zimbabwe
 Goldsearch Technical Services
 Marowa Diamonds (Pvt) Limited
 Samrec Vermiculite Zimbabwe (Pvt) Limited
 SMC Drilling
 Unki Mines (Pvt) Limited
 Zimbabwe Mining Development Corporation
 Zimbabwe Mining Investments
 Zimbabwe Platinum Mines Limited