
APPRAISAL REPORT:

**The Value of the Precious Metal Reserves on the
Blaauwbank Gold Mine (Zuikerboschfontein) is
\$32,766,004,706 USD**

July 2017



Prepared by: Sipho Tshabalala, Independent Consultant-Geologist, Geodata Solutions (Pty) Ltd.

APPRAISAL REPORT - THE BLAAUWBANK GOLD MINE SITUATED IN THE MAGALIESBURG DISTRICT OF GAUTENG, SOUTH AFRICA.

Appraisal Report - The Blaauwbank Gold Mine Situated in the Magaliesburg District of Gauteng, South Africa.

PREPARED FOR: Protea Mines (Pty) Ltd

Appraisal on the Blaauwbank Gold Mine Situated in the Magaliesburg District of Gauteng, South Africa.

Prepared on July, 07th 2017

PREPARED BY:

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CONCLUSION: BASED ON MY DETAILED ANALYSIS OUTLINED HEREIN THE VALUE OF THE PRECIOUS METAL RESERVES ON THE BLAAUWBANK GOLD MINE AS OF JULY, 07TH 2017 IS \$32, 766, 004, 706 USD.



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SIGNED BY: MR SIPHO JOHANNES TSHABALALA,

INDEPENDENT CONSULTANT GEOLOGIST, GEODATA SOLUTIONS (PTY) LTD



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1. OVERVIEW

1.1 Blaauwbank Gold Mine

The Blaauwbank Gold mine is situated in the Magaliesburg district of Gauteng. It is the site where the first gold mining on the Witwatersrand was undertaken and accepted as “The Roots of Johannesburg”. The mine is solely owned by Protea Mines (Propriety) Limited, a company which is parent to and manages the Zuikerboschfontein farm where the gold mine is situated.

Protea Mines has been granted the New Order mining license with full mining rights over the entire farm. Geological work, undertaken by Geologist Tony Jamieson using CAMEG of the University of the Witwatersrand, up to 30 metres underground, has indicated 677 915 tons of dump and underground ore at a minimum of 4 grams per ton (g/t) and a further potential 700 000 tons of ore at a minimum of 4 g/t equivalent to an additional potential.

The geological model proffered by CAMEG under the supervision of retired geologist Tony Jamieson was proven over a 50 metre length. Two raises were embarked upon to connect to the adjoining cusp. Mining, milling, assaying, and sampling produced good results with some assay results ranging from 1 to 454 grams of gold (nugget effect) per ton.

Further sampling, mapping and drilling are required to substantiate the proposed model and complete the prospect evaluation for phase 2. The evidence available so far suggests that good value may be realized from further exploration and development of the Rietfontein Fault.

1.2 Location

In the Magaliesburg area, Gauteng and North West Province, RSA, 6 km from the town of Magaliesburg

1.3 Ownership

Mr Selvin Chetty /Protea Mines Pty Ltd

1.4 Current Process Flow.

Crusher1 → Chrusher2→ Milling → Johnson Burrell→ Jameson table → Germania table.

1.5 Geology

Epigenetic gold deposits. Gold-bearing quartz veins with associated alluvial so-called gravel paddocks. Suitable for opencast (80% quartz above 50 m). Deep underground mining opportunities at approximately 2000 m into the conglomerate structure not covered in this proposal.



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Gold reserves estimated at 120-142 million tons of gold bearing ore across 2,000Ha. Average estimated gold grade at 4-6 g /t. Excludes underground reserves in conglomerate structure.

1.6 Valuation

Valuation performed by Dirk C de Jager on 11 January 2010 valued the gold under — Timeball Hill at USD \$26 Billion.¹

THE VALUE OF THE PRECIOUS METAL RESERVES ON THE BLAAUWBANK GOLD MINE AS OF 10 JULY 2017 IS \$32, 766, 004, 706 USD.

2. INTRODUCTION

2.1. History

At a time, several millions of years ago (almost half the age of the Earth itself), the inland plain and drainage wetland underwent massive geological upheaval and the area split into two sections, and the ground tilted to the north, forming a line of two parallel mountain ranges which stretch for some 120 kilometres, from Pretoria, through Rustenburg to the Pilansburg. This was the birth of the Magaliesburg Mountain range, which forms a natural barrier between the lower lying Bushveld to the north, and the cooler Highveld to the South.

The Witwatersrand Gold Reef was formed over hundreds of thousands of years, with its most northern reaches being discovered just a few kilometres from the village of Magaliesburg, at Blaauwbank. This is where the first strike of the Witwatersrand System, was made and in 1874, the Blaauwbank area was pegged out for formal gold mining activities.

Although the existence of the "Witwatersberg goldfield" predates the discovery of the Witwatersrand Goldfields (Johannesburg), very little is generally known of these epigenetic gold deposits.

Gold was first discovered and mined in the Blaauwbank area in 1872, pre Anglo Boer War. At the end of the war the Boers decided not to sell the rights to any Anglo owned company.

Two of the oldest gold mines in the South Africa, known as Blaauwbank East and Blaauwbank Mine, are located on the farms Koesterfontein and Zuikerboschfontein immediately to the west of the village of Magaliesburg. (In South Africa it is customary to name a mine after the farm upon which it was developed).

The east mine known as the Blaauwbank Mine was put back in production a while ago and is open to the public.



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The west mine on Golden Hill (Goudkoppie) was in full production when the Anglo Boer War started in 1899. This was on the farm Zuikerboschfontein (I.Q. 157 - Portion 4), included in the current Mining Right. Numerous incline shafts, trenches and other excavations gave access to the ore body. The oldest mill in South Africa stands on this property.

In 2005 new legislation dictated that all Mineral Rights were to be owned by the State forcing the hand of the Owner's to register the rights. The application was successful and the rights were given over the property.

Although the existence of the Witwatersberg goldfield predates the discovery of the Witwatersrand goldfields, very little is known about the origin of these epigenetic gold deposits.

Two old mines, referred as Blaauwbank mine (west mine or Goudkoppies) and Blaauwbank East, which are located on the farms Koesterfontein and Zuikerboschfontein immediately to the west of the village of Magaliesburg have produced small tonnages of gold during several periods of intermittent mining since 1872. (Hammerbeck) Production records from the offices of the Government mining engineer reflect some 12,000t at between 4.9 g/t – 34.7 g/t. Au from Zuikerboschfontein and Koesterfontein (west mine).

In 1872 Coetzer and Coetzee began mining activities in the Zuikerboschfontein – Koesterfontein area, mainly alluvial mining but later small workings on the Quartz formation. (Their surnames were the origin of the name Koesterfontein) This became the Goudkoppies or Blaauwbank West mine.

In 1874 an Australian prospector, Henry Lewis, started mining activities on alluvial as well as the quartz reef gold on Jennings farm. The Nil Desperandum Cooperative Quarts Co. was formed. It later became the well-known McNamara Gold Mine. This is the Blaauwbank East Mine.

The Blaauwbank East gold mine, as well as Goudkoppies (or Blaauwbank West) Mine, Koesterfontein and Golden Valley deposits are all closely associated with the WNW trending Rietfontein wrench fault system. SoutWestward verging bedding plane thrusting is developed in the north-dipping Timeball Hill Formation.

2.2. Current Ownership

The mining rights to 2,000Ha of gold bearing land is registered to: Protea Mines Pty Ltd. Mr Selvin Chetty has control over the entire 2,000Ha referred to in this proposal as Zuikerboschfontein.



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3. THE GEOLOGY

3.1 Summary

Sufficient historical and recent geological reporting, coupled with recent exploration data, indicate the presence of epigenetic gold deposits of major economic significance on the farms Koesterfontein IQ 45 portions 11 and 22, Zuikerboschfontein IQ 151 portion 4 and Vaalbank IQ 512 portion 2, vicinity Magaliesburg, Gauteng Province, Republic of South Africa.

The present status of past exploration initiatives is compliant with SAMREC standards (South African Standards for the Reporting Of Mineral Resources) which is set for an inferred reserve as the presence, location and assay values of Au is known from limited field sampling, trenching and drilling analysis (see attached reports).

The presence of Au sampled indicates g/t values ranging from 1.68–34.7 g/t with values as high as 623 g/t recorded within a major fault system transgressing the properties.

3.2. Geological Reports

According to assay records recovered from the present owner and licence holder, Mr Selvin Chetty, assay values have been recovered from in situ sampling and drilling. For assay results see attached laboratory results and geological reports.

The assay results as reflected by the findings made by Performance and Super laboratories suggests the type values to be expected during a more detailed exploration program of the properties. Measured against assay results from limited sampling and tests, and the author's (P Boshoff) knowledge of the areas geology, the following can be said:

- a) The area's geology supports gold mineralization - this is an established fact.
- b) The area has an established history of gold mining.
- c) Gold values recovered from assaying samples vary hold promise as being of economic importance with a realistic average recovery expectancy of 4 - 6 g/t.
- d) Gold mined is of high purity with a high percentage of the available ore bodies being close to surface < 80m.
- e) Gold distribution across the concession is erratic, but host rock type being soft and often friable makes for ease of mining operations.
- f) Gold associates with sulphides and therefore will make the gold isolation by the cyanidation process easy.



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g) Mining operations may be relatively small scale, opencast, as gold bearing veins, veinlets folds and a major fault (Rietfontein fault) seem to be in extreme close proximity and often exposed on surface with mylonite/phyllite and quartz outcrops being in evidence.

h) Field mapping of outcrop, aided by photo-geology will be relatively uncomplicated as outcrop and surface topography follows closely along fold trends so that even weathered sections of syn and anticlines can be reconstructed with a high degree of confidence.

3.3 Mining Methodology

Based on the epigenetic gold deposits having approximately 80% of the gold reserve less than 50m from the surface, open cast mining methodology is recommended. Besides being less complicated than tunnel mining it is also considerably less expensive to mine.

Gold-bearing ore being open-pit mining, also known as open-cast mining and open-cut mining, refers to a method of extracting rock or minerals from the earth by their removal from an open pit or borrow.

The term is used to differentiate this form of mining from extractive methods that require tunnelling into the earth. Open-pit mines are used when deposits of commercially useful minerals or rock are found near the surface; that is, where the overburden (surface material covering the valuable deposit) is relatively thin or the material of interest is structurally unsuitable for tunnelling (as would be the case for sand, cinder, and gravel). For minerals that occur deep below the surface—where the overburden is thick or the mineral occurs as veins in hard rock— underground mining methods extract the valued material.

3.4 Evaluation of Gold Reserves

The evaluation of the reserves were done on three phases being the overall mine ore body reserve ,the mine dump lying above surface of the mining area generated from the historical mining that took place in the farm 100 years ago and the free loose ore material in the old shafts that can be vacuumed out with ease.

On the mining area it is estimated that between 120 million and 142 million tons of gold bearing ore exists within the quartz deposits across the 2,000Ha area with average gold grade of between 4 and 6g/t. The gold grades of the ore body as reported on the geological report by A.A Jamison, Prof.M.J Viljoen CAMEG Wits University.

The gold-bearing ore dump is estimated between 3 million and 3.2 million tons of gold ore material. This material was generated from the stomp mill operation from the early mining activities in the mine. The gold grades of the dump as reported from recent analysis reported by Super Laboratory from samples taken recently are averaging at 5.1-6 g/t.

The loose gold-bearing ore material left in the old shafts is estimated to be between 10 thousand 12 thousand tons at an average gold grade of 12.6 g/t as reported in the Super Laboratory report from samples taken from the shafts recently.



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Table 1: Gold Assay Results for the Old Shafts Loose Material

| Sample Description | Assays | Grade(G/T) |
|--------------------|--------|------------|
| PM1 | Au | 4,74 |
| PM2 | Au | 12,71 |
| PM4 | Au | 11,79 |
| PM5 | Au | 2,27 |
| PM6 | Au | 7,36 |
| PM7 | Au | 9,33 |
| PM8 | Au | 4,74 |
| PM9 | Au | 4,78 |
| PM10 | Au | 4,84 |
| PM11 | Au | 8,06 |
| PM12 | Au | 11,27 |
| PM13 | Au | 37,08 |
| PM15 | Au | 3,41 |
| PM16 | Au | 2,21 |
| PM17 | Au | 15,68 |
| PM18 | Au | 16,14 |
| PM19 | Au | 7,47 |
| PM20 | Au | 62,98 |
| PM21 | Au | |
| AVERAGE | Au | 12,60 |



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Table 2: Gold Assay Results for the Mine Dump Ore Material

| Sample Description | Assays | Grade(G/T) |
|--------------------|--------|------------|
| BBM20 | Au | 8,14 |
| BBM21 | Au | 6,72 |
| BBM22 | Au | 3,59 |
| BBM23 | Au | 1,91 |
| BBM24 | Au | 1,42 |
| BBM25 | Au | 1,12 |
| BBM26 | Au | 3,91 |
| BBM27 | Au | 28,14 |
| BBM28 | Au | 0,99 |
| BBM29 | Au | 8,61 |
| BBM30 | Au | 2,29 |
| BBM31 | Au | 1,16 |
| BBM32 | Au | 1,84 |
| BBM33 | Au | 0,75 |
| BBM34 | Au | 7,21 |
| BBM35 | Au | 3,16 |
| AVERAGE | Au | 5,06 |



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Table 3: Additional Gold Assay Results from the Plants Shaking Table Tailings Dam

| Sample Description | Assays | Grade(G/T) |
|--------------------|--------|------------|
| PM BBM 1 | Au | 8,17 |
| PM BBM 2 | Au | 1,47 |
| PM BBM 3 | Au | 1,35 |
| PM BBM 4 | Au | 0,91 |
| PM BBM 5 | Au | 2,78 |
| PM BBM 6 | Au | 2,08 |
| PM BBM 7 | Au | 1,16 |
| PM BBM 8 | Au | 0,47 |
| PM BBM 9 | Au | 0,79 |
| PM BBM 10 | Au | 0,99 |
| PM BBM 11 | Au | 6,77 |
| PM BBM 12 | Au | 0,8 |
| PM BBM 13 | Au | 1,84 |
| PM BBM 14 | Au | 0,75 |
| PM BBM 15 | Au | 1,95 |
| PM BBM 16 | Au | 2,47 |
| PM BBM 17 | Au | 0,92 |
| PM BBM 18 | Au | 0,84 |
| PM BBM 19 | Au | 0,55 |
| AVEAGE | Au | 2,17 |

This is extra materials lying in the tailings dam from the processing plant's shaking table; these were not included on the reserve evaluation. This is currently recorded as waste, but plans of reprocessing the material are in place.



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Table 4: Total Gold Reserve Quantification and Evaluation to Monetary Value at Todays Gold Price.

| ITEM | DESCRIPTION | TONNAGE OF RESERVE | AVERAGE GOLD GRADE(g/t) | GOLD(K G) | GOLD (OZ) | VALUE\$ |
|-------------------------------|--|--------------------|-------------------------|-----------|-----------|----------------------|
| MINE DUMP MATERIAL | This is virgin Gold bearing dump material lying above ground; this was created 100years back when the first mining was done. This material can be processed as is. | 3 000 000 | 5,1 | 15180,00 | 535398,6 | \$ 649 920 360,54 |
| LOOSE SHAFT ORE | This is loose Gold bearing material laying in the shaft | 10 000 | 12,6 | 126,00 | 4444,02 | \$ 5 394 595,878 |
| TOTAL RESERVES OF MINING AREA | This is the total reserve of the mining area excluding the reserve on the dumps and loose material | 125 000 000 | 6,0 | 750000,00 | 26452500 | \$ 32 110 689 750.00 |

Table 5: Total Quantity of Gold Reserve with Total Monetary Value.

| TOTAL GOLD RESERVE(OZ) | TOTAL VALUE OF RESERVE |
|------------------------|------------------------|
| 26 992 342,62 | \$32 766 004 706,418 |
| | |

GOLD PRICE @ \$1 213.90/OZ

4. MINING RIGHTS AND DMR (DEPARTMENT OF MINERALS RESOURCE) LICENCES

- ✚ Mining rights for the Blaauwbank Gold Mine are held by Protea Mines Pty Ltd under the following DME reference: GP. 30/5/1/2/2 (224) MRC.
- ✚ Protea Mine Pty Ltd also holds a refinery licence that allows it to mine and refine gold onsite and can also sell unlimited gold onsite.
- ✚ Protea Mines Pty Ltd has a special resolution from DMR that allows it to mint gold coins onsite.



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5. CONCLUSION

- ✚ The mine is currently operating as a small scale mine mainly focusing of recovering the free gold on the ore body.
- ✚ The current production is seating at around 20 kg of gold a month.
- ✚ The mine is looking at expanding the operation to a commercial scale mining.
- ✚ Images of the mine as it stands and infrastructure can be seen on APPENDIX A
- ✚ Ownership certificate on Appendix B as attachment.
- ✚ Copy of mining right on Appendix C as attachment.
- ✚ Geological report on Appendix D as attachment.
- ✚ Analysis certificates on Appendix E as attachment



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APPENDIX A: MINE IMAGES AND INFRASTRUCTURE.



Figure 1: Part view of the mine



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Figure 2: Current processing plant



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Figure 3: Image of an old shaft



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Figure 4: Image of the milling plant



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Figure 5: Image of the mine offices



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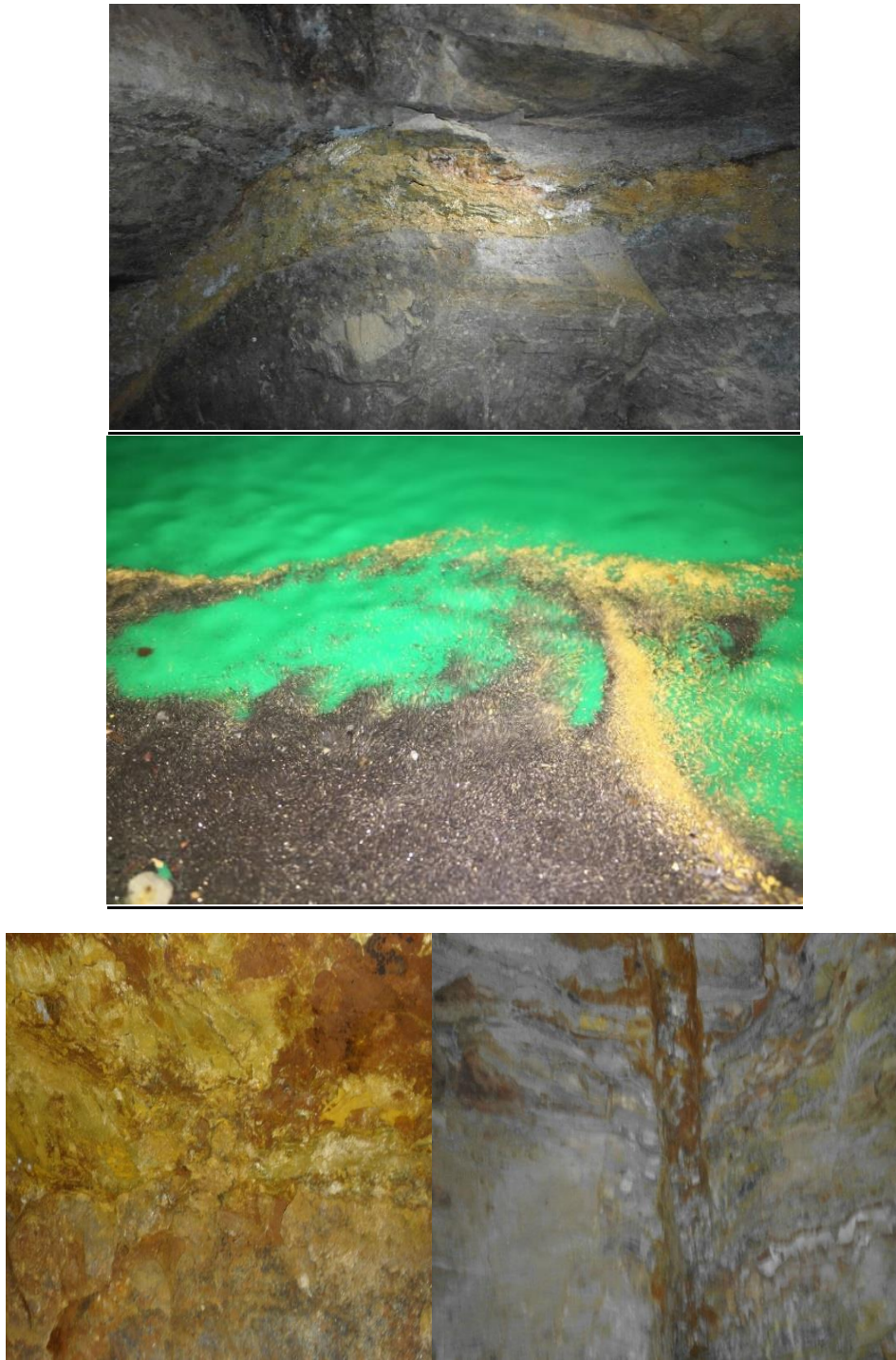


Figure 6: Images of the ore body



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6. APPRAISER'S QUALIFICATIONS: SIPHO JOHANNES TSHABALALA

Academic Achievements:

- ✚ Bachelor Degree: Geology 2009-2012
- ✚ National Diploma: Economic Geology 2004-2007
- ✚ Sable for Data Managers, completed at Sable
- ✚ Analytical Methods and QAQC, completed at GASA
- ✚ MapInfo Professional, completed at ST Group (RSA)
- ✚ Power Pivot for Excel, completed at Audit Excel
- ✚ Introduction to ArcView , completed at MSA Geoservices

Software Proficiency:

- ✚ Sable Advanced.
- ✚ Mine sight Advanced.
- ✚ MapInfo Advanced.
- ✚ Discover 3D Intermediate.
- ✚ Surfer Advanced.
- ✚ ArcGIS Intermediate.
- ✚ SQL Server Advanced.
- ✚ Surfer Intermediate.
- ✚ Microsoft Access Intermediate.

Professional Affiliations:

- ✚ South African Council for Natural Scientific Professions: 400185/15.
- ✚ Geological Society of South Africa (GSSA): 966216.
- ✚ Geostatistical Association of South Africa: 013002.

Work Experience:

- ✚ November 2014 to Present: Geodata Solutions (Pty) Ltd, Independent Consultant.
- ✚ October 2011 to January 2015: Khoemacau Copper Mining (Pty) Ltd - Botswana, Geological Database/GIS Manager.
- ✚ May 2011 to September 2011, mine sight Applications Limited SA, Mine sight Specialist.
- ✚ August 2008 to April 2011: Nkwe Platinum (SA) (Pty) Ltd, Geodata Officer.
- ✚ Feb 2008 to July 2008: GISNet cc, Data Administration.
- ✚ July 2005 to Jan 2008: MSA Geoservices (Pty) Ltd, Trainee Geologist.

