HERITAGE STATEMENT FOR THE WATERBERG PROSPECTING RIGHTS APPLICATION, BLOUBERG, LIMPOPO PROVINCE

PLATINUM GROUP METALS

MARCH 2013

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This document has been prepared by **Digby Wells Environmental**.

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Report Type:	**NHRA Section 38(8) in terms of MPRDA EMP Scoping**
Project Number:	**PLA 2162**

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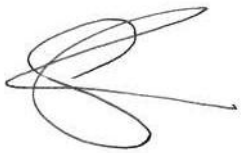
Shahzaadee Karodia *Archaeology Consultant*	Specialist & Desktop Report Compiler		11 April 2013
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EXECUTIVE SUMMARY

Platinum Group Metals (PGM) has requested Digby Wells Environmental (Digby Wells) to compile and submit Environmental Management Plans (EMPs) in support of approved applications for several Prospecting Rights areas (the Project and Project Area). The EMPs will be compiled in accordance with the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) for submission to the Department of Minerals Resources (DMR). A primarily desktop-based heritage study was completed, informed in part by a Heritage Screening Assessment. Data that were collected during the desktop and field visit were collated and presented in a Heritage Statement report. The Heritage Statement was summarised and submitted in support of a Notification of Intent to Development in terms of Section 38 of the NHRA and in compliance with requirements for an EMP in terms of the MPRDA.

Heritage resources were identified and recorded in five of the six proposed prospecting licence areas. A total of 25 sites were recorded that included historical settlements and graves, Iron Age, Stone Age and rock art sites during the Heritage Screening Assessment. Additional information gathered during the desktop assessment indicates that the prospecting licence area is a significant landscape comprising of both geological and cultural attributes. Due to the size of the project area, intensive survey was not feasible. However a representative sample of heritage resources were obtained during the Heritage Screening Assessment identifying both tangible (e.g. Stone and Iron Age sites, rock art sites, burial grounds and graves) and intangible heritage resources (e.g. rain-making and initiation, ZCC gathering areas, burial grounds and graves). The relative lack of recorded archaeological sites identified during reviews of previous impact assessment reports, as well as during the Heritage Screening Assessment, may be due to the low arable land capability inherent in the land types associated with the project area. This may also be indicative relatively sparse occupation of the area in the past.

Sources of risk were identified that may impact on heritage resources. These risks will be primarily associated with clearing of vegetation and topsoil. These risks and associated impacts may be avoided and minimised following the recommendations that were made. However, the proposed prospecting activities were in general considered to be of negligible risk to potential heritage resources that may occur in the project area. As such, it was recommended that the project be exempted from further heritage assessments.

GLOSSARY OF ABBREVIATIONS AND TERMS

BCE	Before Common Era, synonymous with BC, from 2000 years BP and earlier
BP	Before Present (also Before Physics), denotes years before present where the present has been established as 1 January 1950; usually refers to radiocarbon dates.
c.	Abbreviation of circa, denoting an approximate date, e.g. c. 200 years ago.
CE	Common Era, synonymous with AD, i.e. past two millennia
DMR	Department of Minerals Resources
EMP	Environmental Management Plan
Env. IA	Environmental Impact Assessment
ESA	Early Stone Age, archaeological period corresponding to the emergence of early *Homo* species and earliest stone tools, approximately 2.5 MYA to 20 KYA
GN. R.	Government Notice Regulation
Historic period	Changes in various parts of South Africa. Usually considered from first long-term contact between Europeans and indigenous groups - c. 1652 in Western Cape to around 1840 in the interior. However, recently also considered to include past 500 years irrespective of contact (cf. Swanepoel et al 2005). For the purposes of this report, the Historic period includes early contact (c. 1840) to 60 years ago (c. 1952)
HRA	Heritage Resources Authority
HSA	Heritage Screening Assessment
IAP	Interested and Affected Party
ka	Thousand years ago
LIA	Late Iron Age, archaeological period characterised by distinct settlement patterns, manufacture and use of low fired ceramics (pottery), date range between c. 1300-1840 CE
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of

	2002)
MSA	Middle Stone Age, archaeological period corresponding to the emergence of modern *Homo sapiens* species and more refined cognitive (modern) behaviour most often witnessed in tool manufacture and art, approximately 250 KYA to 20 KYA
MYA	Million years ago
PHRA	Provincial Heritage Resources Authority
PPP	Public Participation Process
Project Area	The proposed Project Area defined and delineated by boundaries that may include infrastructure footprints, buffer zones, exclusion areas and attributes specific to the proposed Project
SEP	Stakeholder Engagement Plan
Site	1. Any place where objects, features, or ecofacts manufactured or modified by human beings are found. A site can range from a living site to a quarry site, and it can be defined in functional and other ways. 2. A term used to define places of archaeological interest. Typically, they are assumed to be places (Concise Oxford Dictionary of Archaeology, 2008)
Site complex	A complex of sites that may be associated spatially and/or temporally with each other. Sites complexes may be synchronic or diachronic related.
SoW	Scope of Work
Study Area	The wider regional area within which the proposed Project Area is located, includes regional cultural landscapes and environment.

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1 INTRODUCTION

Platinum Group Metals (PGM) has requested Digby Wells Environmental (Digby Wells) to compile and submit Environmental Management Plans (EMPs) in support of approved applications for the Prospecting Rights area (the Project). The EMPs will be compiled in accordance with the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) for submission to the Department of Minerals Resources (DMR).

2 PROJECT BACKGROUND

2.1 Project Details

PGM has requested Digby Wells to compile and submit EMPs in support of approved applications for the Prospecting Rights for the farms located in the Blouberg and Mogalakwena Magisterial Districts of the Limpopo Province. All the EMPs will be compiled in accordance with the requirements of the MPRDA and Regulations in terms of the MPRDA (GN R 527 of 23 April 2004). Prospecting activities will be undertaken over a period of 60 months. PGM have applied for both invasive and non-invasive methods for their prospecting activities. Invasive methods are defined as activities that result in land disturbances and include:

Diamond drilling and/or percussion drilling;

- Sampling and sampling storage; and
- Should an outcrop be established, initiating of trenching, and sampling.

Non-invasive methods are methods that do not cause disturbances to the land and include desktop research and include detailed ground magnetic surveys, and/or gravity and/or magneto telluric studies.

It is anticipated that nine prospecting rights application sites will need to be developed and drilled over the 60 month period.

Minerals that would be prospected for include gold, chrome, copper, iron, nickel, platinum group metals and vanadium.

Table 2-1 below presents the Prospecting Rights areas.

Prospecting activities will be undertaken over a period of 60 months. PGM have applied for both invasive and non-invasive methods for their prospecting activities. Invasive methods are defined as activities that result in land disturbances and include:

- Diamond drilling and/or percussion drilling;
- Sampling and sampling storage; and
- Should an outcrop be established, initiating of trenching, and sampling.

Non-invasive methods are methods that do not cause disturbances to the land and include desktop research and include detailed ground magnetic surveys, and/or gravity and/or magneto telluric studies.

It is anticipated that nine prospecting rights application sites will need to be developed and drilled over the 60 month period.

Minerals that would be prospected for include gold, chrome, copper, iron, nickel, platinum group metals and vanadium.

Table 2-1: Prospecting Right Applications included in the EMP

Application number	Farms
LP30/5/1/1/2/10804PR	Norma 365 LR RE, Norma 365 LR Ptn1, Uitkyk 394 LR RE , Uitkyk 394 LR Ptn 2, Schoongezicht 362 LR, Early Dawn 361 LR, Old Langsine 360 LR, Barenen 152 LS, Langbryde 324 LR, Lomondside 323 LR, Ritterhouse 151 LS, Miltonduff 322 LR, Terwieschen 77 LS, Brodie Hill 76 LS, Wilhanshohe 78 LS
LP30/5/1/1/2/10805PR	Bonne Esperance 356 LR, Too Late 359 LR, Mont Blanc 328 LR, Nieuwe Jerusalem 327 LR, Gallashiels 316 LR, Sweethome 315 LR, Blackhill 317 LR, Bognafuran 318 LR, Liepsig 264 LR RE, Liepsig 264 LR Ptn1, The Park 266 LR
LP30/5/1/1/2/10806PR	Windhoek 307 LR
LP30/5/1/1/2/10807PR	Normandy 312 LR, La Rochelle 310 LR, Les Fontaines 271 LR, Springfields 268 LR, Langlaagte 279 LR, Berg-En-Dal 276 LR
LP30/5/1/1/1/2/10668PR & LP30/5/1/1/2/10808PR	Disseldorp 369 LR, Bayswater 370 LR, Carlsruhe 390 LR, Niet Mogelyk 371 LR, Kirstenspruit 351 LR, Breda 373 LR, Duren 387 LR, Polen 389 LR
LP30/5/1/1/2/10667PR & LP30/5/1/1/2/10809PR	Groenepunt 354 LR, Rosamond 357 LR, Millstream 358 LR
LP30/5/1/1/2/10810PR	Udney 321 LR, Millbank 325 LR

2.2 Description of Property and/or Affected Environment

2.2.1 Location Data

The Project is located in two local and district municipalities approximately 83 km north of Polokwane and 97 km east of Lephalale. Surrounding nearby towns include Steilloopbrug, Steilwater, Uitzicht, Senwabarwana (previously Bochum). The location details are summarised in Table 2-2.

Table 2-2: Summary of location details per prospecting area

Total prospecting licence area	168 170 hectares / 1681.704 km^2
Approximate centre of prospecting licence area	S 23.2651 E 28.8931
LP30/5/1/1/2/10804PR	
Province	Limpopo
Magisterial District / Local Authority	Capricorn District Municipality
Municipality	Blouberg Local Municipality
Property Name and Number	Norma 365 LR RE, Norma 365 LR Ptn1, Uitkyk 394 LR RE , Uitkyk 394 LR Ptn 2, Schoongezicht 362 LR, Early Dawn 361, Old Langsine 360 LR, Barenen 152 LS, Langbryde 324 LR, Lomondside 323 LR, Ritterhouse 151 LS, Miltonduff 322 LR, Terwieschen 77 LS, Brodie Hill 76 LS, Wilhanshohe 78 LS
1: 50 000 Map Sheet	2328 BB Ka-Gobe 2328 BC Rebone 2328 BD Mahlwareng 2329 AC Bochum
GPS Co-ordinates **(relative centre point of study area)**	S 23.2777 E 28.9825
Project area size	270.165788 km2
LP30/5/1/1/2/10805PR	
Province	Limpopo
Magisterial District / Local Authority	Capricorn District Municipality
Municipality	Blouberg Local Municipality
Property Name and Number	Bonne Esperance 356 LR, Too Late 359 LR, Mont Blanc 328 LR, Nieuwe Jerusalem 327 LR, Gallashiels 316 LR, Sweethome 315 LR, Blackhill 317 LR, Bognafuran 318 LR, Liepsig 264 LR RE, Liepsig 264 LR Ptn1, The Park 266 LR
1: 50 000 Map Sheet	2328 BB Ka-Gobe 2328 BD Mahlwareng

GPS Co-ordinates (relative centre point of study area)	S 23.2247 E 28.8654
Project area size	223.021413 km2
LP30/5/1/1/1/2/10668 PR and LP30/5/1/1/2/10808 PR	
Province	Limpopo
Magisterial District / Local Authority	Waterberg District Municipality
Municipality	Mogalakwena Local Municipality
Property Name and Number	Niet Mogelyk 371 LR, Carlsruhe 390 LR, Polen 389 LR, Breda 373 LR, Duren 387 LR
Magisterial District / Local Authority	Capricorn District Municipality
Municipality	Blouberg Local Municipality
Property Name and Number	Disseldorp 369 LR, Bayswater 370 LR, Kirstenspruit 351 LR
1: 50 000 Map Sheet	2328 BC Rebone 2328 BD Mahlwareng
GPS Co-ordinates (relative centre point of study area)	S23.371881 E28.762733
Project area size	158.713252 km^2
LP30/5/1/1/2/10667PR & LP30/5/1/1/2/10809PR	
Province	Limpopo
Magisterial District / Local Authority	Capricorn District Municipality
Municipality	Blouberg Local Municipality
Property Name and Number	Groenepunt 354 LR, Rosamond 357 LR, Millstream 358 LR
1: 50 000 Map Sheet	2328 BD
GPS Co-ordinates (relative centre point of study area)	S 23.3275 E 28.8472
Project area size	62.9191 km2

LP30/5/1/1/2/10810PR	
Province	Limpopo
Magisterial District / Local Authority	Capricorn District Municipality
Municipality	Blouberg Local Municipality
Property Name and Number	Udney 321 LR, Millbank 325 LR
1: 50 000 Map Sheet	2328 BB 2328 BD
GPS Co-ordinates **(relative centre point of study area)**	S 23.2184 E 28.9255
Project area size	42.098713 km2

2.2.2 Location Maps

Location maps are provided in Appendix B: Location and Site Maps. Plan 1 to Plan 3 places the Project area within the regional context. Plan 4 presents the geological context of the Project and Study areas.

2.2.3 Site Maps

The site map is presented in Appendix B: Location and Site Maps as Plan 5. The site map depicts heritage resources that were identified from a survey of historical aerial photographs, a review of previous impact assessment reports, and a screening assessment of the Project area.

2.2.4 Type of development

Minerals prospecting in terms of the MPRDA.

2.2.5 Rezoning and/or land subdivision

No rezoning and/or land subdivision is required for the Project.

2.2.6 Development context of Study Area

The Waterberg District Integrated Development Plan (WD-IDP) was reviewed to gain a more detailed understanding of the development context within which the Project Area is situated. With regards to heritage, an understanding of the development context of the Study Area is important in order to assess and/or predict the magnitude of possible impacts on heritage

resources that are identified in the Study Area. Cumulative impacts on heritage resources and the cultural landscape can also be more accurately addressed.

The Waterberg area is well-known for its scenic qualities and is rapidly becoming one of the best-known tourist destinations in the Limpopo Province. This trend is evident in the great number farms being converted into game reserves. There are several attractions in the Waterberg District Municipality such as private reserves, the Waterberg Biosphere Reserve, the Historic Cave (Makapan Caves), and the Blouberg Nature Reserve (in Capricorn District Municipality) approximately 92 km south west, 83 km south and 18 km north east of the Project Area respectively. A large portion of the Waterberg District Municipality is designated as a Biosphere Reserve. Another key tourism activity is hunting which attracts many overseas tourists. Most land is under private ownership and most of these landowners have converted their farms into private game/hunting farms (Waterberg District Municipality, 2010).

According to the WD-IDP (2010), a tourism development and implementation plan is in place to guide the development and promotion of tourism and also to make the Waterberg a preferred tourist destination. This tourism development and implementation plan is however due for review, and if implemented may have implications for the Makgabeng plateau situated partially within the Project Area.

Mining in the Waterberg area is said to contribute to the economic development of the Waterberg District and the Limpopo Province (Waterberg District Municipality, 2010). In the Limpopo Province, the Waterberg area is the largest area contributing to platinum. Coal mining and petroleum development in Lephalale have increased the demand of coal for electricity generation (Waterberg District Municipality, 2010). Other mineral being mined include cement and ferrous deposits. Future mining activities in the greater study area may result in various positive and negative cumulative impacts on heritage resources and/or tourist destinations in the area vicinity.

2.3 Relevant Contact Details

The contact details of the client (PGM) and consultant (Digby Wells) are listed in Table 2-3 and

Table 2-4 below. Details of landowners are provided in Table 2-5.

Table 2-3: Client contact details

ITEM	COMPANY CONTACT DETAILS
Company	Platinum Group Metals Ltd
Contact person	Mike Wasserfall

ITEM	COMPANY CONTACT DETAILS
Tel no	011 782 2186
Fax no	011 782 4338
E-mail address	mike@platinumgroupmetals.co.za
Postal address	PostNet Suite No. 81 Private Bag X12 Rooseveltpark 2129

Table 2-4: Consultant contact details

ITEM	COMPANY CONTACT DETAILS
Company	Digby Wells Environmental
Contact person	Lucy Koeslag
Tel no	011 789 9495
Fax no	011 789 9498
E-mail address	lucy.koeslag@digbywells.com
Postal address	Private Bag X10046, Randburg, 2125

2.4 Legislative Framework

2.4.1 Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA)

The MPRDA stipulates under section 5(4) No person may prospect for or remove, mine, conduct technical co-operation operations, reconnaissance operations, explore for and produce any mineral or petroleum or commence with any work incidental thereto on any area without (a) an approved environmental management programme or approved environmental management plan, as the case may be.

2.4.2 National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA)

Section 38(8) - The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.

2.4.3 World Bank

2.4.3.1 World Bank Operational Policies

The World Bank Operational Policies for cultural resources (OP4.11) fall within the broader Environmental Authorisation Policies (EAPs). Physical cultural resources are important as sources of valuable scientific and historical information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices. This policy assists countries to avoid or mitigate adverse impacts on physical cultural resources from development projects that are financed through the World Bank. The impacts on physical cultural resources resulting from project activities, including mitigating measures, may not contravene either the borrower's national legislation, or its obligations under relevant international environmental treaties and agreements.

2.4.3.2 Equator Principles (EPs)

The Equator Principles Financial Institutions (EPFIs) adopted principles in order to ensure that the projects financed are developed in a manner that is socially responsible and reflect sound environmental management practices. By doing so, negative impacts on project-affected ecosystems and communities should be avoided where possible, and if these impacts are unavoidable, they should be reduced, mitigated and/or compensated for appropriately.

Principle 2: Social and Environmental Assessment

For each project assessed as being either Category A or Category B, the borrower has conducted a Social and Environmental Assessment ("Assessment") process to address, as appropriate and to the EPFI's satisfaction, the relevant social and environmental impacts and risks of the proposed project. The Assessment should also propose mitigation and management measures relevant and appropriate to the nature and scale of the proposed project.

Principle 3: Applicable Social and Environmental Standards

For projects located in non-OECD (Organisation for Economic Co-operation and Development) countries, and those located in OECD countries not designated as High-Income, as defined by the World Bank Development Indicators Database, the Assessment

will refer to the then applicable IFC Performance Standards and the then applicable Industry Specific Environmental Health and Safety (EHS) Guidelines ("EHS Guidelines").The Assessment will establish to a participating EPFI's satisfaction the project's overall compliance with, or justified deviation from, the respective Performance Standards and EHS Guidelines.

2.4.3.3 International Finance Corporation (IFC)

The IFC's Performance Standards form part of the EP's and aims to manage social and environmental risks (and impacts) to enhance development opportunities in its private sector financing in its member countries eligible for financing (IFC, 2012). The main focus of the risk assessment of a proposed development is primarily on the potential impacts associate with the project activities during construction, operation, and decommissioning and closure phases.

2.4.4 Summary of Public Participation Process (PPP)

A Stakeholder Engagement Plan (SEP) was required for the Project. Through public consultation, stakeholders were provided with the platform to contribute essential local knowledge to project planning and design, and thereby influence the decision making process. As such, the SEP was implemented to comply with the requirements for consultation in accordance with the:

- MPRDA Section 5(4),10;
- NEMA Section 2; and
- World Bank Operation Policies OP4.11 (11).

Communities and/or individuals that were identified and consulted – total 43 – within the relevant prospecting right application areas are summarised in Table 2-5. These communities were identified by means of Windeed searches.

Digby Wells' SEP team conducted site visits from 5 to 8 March 2013 to further identify affected communities with the assistance of local traditional authorities. Two traditional authorities have jurisdiction in the proposed project area: Bahananwa (alternative names include Bahananoa, Maleboch, Maleboho and others) and Seakamela Traditional Authorities. In addition the Limpopo Department of Rural Development and Land Reform was identified as an Interested and Affected Party (IAP).

Table 2-5: Details of identified communities and/or individuals during the SEP.

Prospecting Licence	Farm Name	Company / Owner	Community	Occupier, Headman, Chairperson
LP30/5/1/1/2/10804PR	Norma 365 LR	Government Of Lebowa / Bakoni Stam-Tribe	Norma A	Mr Mamabolo
			Norma B	Mrs Masekwa
	Uitkyk 394 LR	Jim Likgale Stam-Tribe/ Kokoeni Likgale Stam-Tribe/ Hosea Machaka Stam-Tribe	Uitkyk 1	Mr Dikgale
			Uitkyk 2	Mr Raboshaka
			Uitkyk 3	Mr Mankga
	Schoongezicht 362 LR	Limpopo Department of Rural Developement and Land Reform Limpopo	Schoongezicht	Mr S. Ngwepe-Son
	Early Dawn 361 LR	Bakoni Stam-Tribe	Ga Ngwepe	Mr N. Mokobane
	Old Langsine 360 LR	Government Of Lebowa	Old Langsine	Mr Seanego
	Barenen 152 LS	Government Of Lebowa	Barenen	Mr Legodi
	Langbryde 324 LR	Government Of Lebowa	Located in the mountains, no community	
	Lomondside 323 LR	Government Of Lebowa	Galekwara	Mr Lekgwara
	Rittershouse 151 LS	Government Of Lebowa	Mokumuru	Mr Mothiba
	Miltonduff 322 LR	Government Of Lebowa	Matemana	Mr F Maela
			Tshabapula	Mr Mochemi
	Terwieschen 77 LS	Ramutla Stam-Tribe	Garammutla	Mr W. Rammutla
	Brodie Hill 76 LS	Government Of Lebowa	Nailana	Mr Nailana Caiphus
			Gamoloto	Mr Moloto
			Gamochemi	Mr D. Mochemi
	Wilhanshohe 78 LS	Molepo Stam	Ditatsu	Mr W. Molepo

Prospecting Licence	Farm Name	Company / Owner	Community	Occupier, Headman, Chairperson
LP30/5/1/1/2/10805PR	Bonne Esperance 356 LR	Limpopo Department of Rural Developement and Land Reform Limpopo	Located in the mountains, no community	
	Too Late 359 LR	Bahanana Tribe	Located in the mountains, no community	
	Mont Blanc 328 LR	Limpopo Department of Rural Developement and Land Reform Limpopo	Located in the mountains, no community	
	Nieuwe Jerusalem 327 LR	No information available	Located in the mountains, no community	
	Gallashiels 316 LR	Government Of Lebowa	Jerusalem	Mr Hlako
	Sweethome 315 LR	Limpopo Department of Rural Developement and Land Reform Limpopo	Sweethome	P. Maboya
	Blackhill 317 LR	Government Of Lebowa	Kobe	Mr Cairo Kobe
	Bognafuran 318 LR	Malaboch Stam-Tribe	Bognafuran	Mr Kubu
	Leipsig 264 LR	Bahananoa Tribe / Berliner Missionsgesellschaft Trust	Sehlong	Mr Waleng
	The Park 266 LR	Bahananoa Tribe	Located in the mountains, no community	
LP30/5/1/1/2/10806PR	Normandy 312 LR	Bahananoa Tribe	Madibeng	Mr Morukhu
	La Rochelle 310 LR	Bakoena Stam-Tribe	La Rochelle	Mrs Mokwele
	Les Fontaines 271 LR	Limpopo Department of Rural Developement and Land Reform Limpopo	Sekhung	Mr Molokomme
	Springfields 268 LR	Limpopo Department of Rural Developement and Land Reform Limpopo	Morotsi	Mr Molokomme
	Langlaagte 279 LR	Government Of Lebowa	Langlaagte	Mr S. Mpya
	Berg-En-Dal 276 LR	Republiek Van Suid-Afrika	Berg-En-Dal	Mr Seduma
	Windhoek 307 LR	Bahananoa Tribe	Gamankgodi	Mr Marakalala

Prospecting Licence	Farm Name	Company / Owner	Community	Occupier, Headman, Chairperson
	Silvermyn 311 LR	Mabeba Manase	Silvermyn	Mr Morodu
LP30/5/1/1/2/10807PR	Normandy 312 LR	Bahananoa Tribe	Madibeng	Mr Morukhu
	La Rochelle 310 LR	Bakoena Stam-Tribe	La Rochelle	Mrs Mokwele
	Les Fontaines 271 LR	Limpopo Department of Rural Developement and Land Reform Limpopo	Sekhung	Mr Molokomme
	Springfields 268 LR	Limpopo Department of Rural Developement and Land Reform Limpopo	Morotsi	Mr Molokomme
	Langlaagte 279 LR	Government Of Lebowa	Langlaagte	Mr S. Mpya
	Berg-En-Dal 276 LR	Republiek Van Suid-Afrika	Berg-En-Dal	Mr Seduma
LP30/5/1/1/1/2/10668PR & LP30/5/1/1/2/10808 PR	Bayswater 370 LR	Government Of Lebowa	Ongoing consultation conducted by PTM	
	Carlsruhe 390 LR	Government Of Lebowa	Ongoing consultation conducted by PTM	
	Disseldorp 369 LR	Denosha Piet	Ongoing consultation conducted by PTM	
	Kirstenspruit 351 LR	Bakoni Stam-Tribe	Ongoing consultation conducted by PTM	
	Niet Mogelyk 371 LR	Government Of Lebowa	Ongoing consultation conducted by PTM	
	Breda 373 LR	Government Of Lebowa	Breda	K. Mpherwane
	Duren 387 LR	Batlokoa Tribe	Duran	J. Moremi
	Polen 389 LR	Batlokoa Tribe	Polen	T. Manthata
LP30/5/1/1/2/10667PR & LP30/5/1/1/2/10809PR	Groenepunt 354 LR	Government Of Lebowa	Located in the mountains, no community	

Prospecting Licence	Farm Name	Company / Owner	Community	Occupier, Headman, Chairperson
	Rosamond 357 LR	Limpopo Department of Rural Developement and Land Reform Limpopo	Located in the mountains, no community	
	Millstream 358 LR	Bakoni Stam-Tribe	Located in the mountains, no community	
LP30/5/1/1/2/10810PR	Udney 321 LR	Government Of Lebowa	Mongalo	Mr L. Makwiting
			Dithabaneng	Mr Seapela
	Millbank 325 LR	Government Of Lebowa	Bodie	Mr Ramporo

2.5 Terms of Reference

PGM submitted applications for Prospecting Rights in terms of Section 16 of the MPRDA to the DMR. PGM proposed to conduct prospecting activities on the farms presented in Prospecting activities will be undertaken over a period of 60 months. PGM have applied for both invasive and non-invasive methods for their prospecting activities. Invasive methods are defined as activities that result in land disturbances and include:

- Diamond drilling and/or percussion drilling;
- Sampling and sampling storage; and
- Should an outcrop be established, initiating of trenching, and sampling.

Non-invasive methods are methods that do not cause disturbances to the land and include desktop research and include detailed ground magnetic surveys, and/or gravity and/or magneto telluric studies.

It is anticipated that nine prospecting rights application sites will need to be developed and drilled over the 60 month period.

Minerals that would be prospected for include gold, chrome, copper, iron, nickel, platinum group metals and vanadium.

Table 2-1 in Section 2.1. The Prospecting Rights applications are subject to an approved EMP compilation in accordance with the MPRDA.

The EMP was compiled and will be implemented to ensure appropriate management of the proposed prospecting activities. The EMP was based primarily on desktop research conducted by specialists. The EMP involved the following activities but was not limited to:

- Description of the environment likely to be affected by the proposed prospecting;
- Identifying potential impacts;
- Assessing significance of potential impacts of the proposed project on the environment, socio economic conditions and cultural heritage; and
- Evaluating proposed mitigation measures to minimise negative impacts.

2.6 Scope of Work

A primarily desktop-based heritage study, informed in part by a heritage screening assessment was completed. Data that were collected during the desktop and field visit were collated and presented in a Heritage Statement report. The Heritage Statement was summarised and submitted in support of a Notification of Intent to Development in terms of Section 38 of the NHRA and in compliance with requirements for an EMP in terms of the MPRDA.

3 METHODOLOGY

3.1 Literature review

Relevant and available published works such as academic journals, academic books, unpublished theses and reports, previous palaeontological and heritage assessments, and websites were reviewed.

3.2 Historical layering

A review of historical maps, such as the Major Jackson Series, previous 1:50 000 topographical maps, and aerial imagery was completed. Aerial imagery was overlaid to assess the changes in the receiving environment over time. Additionally, published geological maps were also examined.

3.3 Heritage Screening Assessment

A heritage screening assessment (HSA) was completed on 1 April to 4 April 2013 to ground-truth heritage resources within the Project area and to record the current state of the cultural landscape. The HSA was completed by two three-person survey teams under supervision of Digby Wells specialists between 31 March and 4 April. Teams consisted of Johan Nel and Justin du Piesanie and four students currently completing Honours degrees in archaeology in the Department of Anthropology and Archaeology, University of Pretoria. The area was surveyed using both vehicle and pedestrian techniques. Aerial imagery, both historical and satellite photographs were examined to prioritise access routes and unaffected natural environs. Regions that have been previously disturbed such as agricultural fields and settlements were excluded from the assessment. Areas designated for survey were accessed by vehicle. Potential areas for heritage resources were identified along the routes and examined by foot. Unaffected natural environs identified through aerial imagery were surveyed on foot.

3.4 Site Naming

3.4.1.1 Confirmed sites identified during desktop study

Sites may be identified based on previous relevant reports. The site names and/or numbering that were used in the original reports will be used, but suffixed with the relevant SAHRA report number if available, for example a heritage resource identified in Roodt (1999) described as an archaeological site and numbered Site 1 in that report will be **Site 1/1999-SAHRA-0021**.

3.4.1.2 Unconfirmed sites identified during desktop study

Potential sites not previously identified, but noted as a result of historical layering, desktop studies or through indicators such as vegetation, were named using the Digby Wells Project

number, followed by the map sheet number and reference to the relevant NHRA section suffixed with the site number: **PLA2162/2328BB/S.35-001**.

This number may be shortened on any plans or maps to the NHRA reference number suffixed with the site number: **S.35-001**.

3.4.1.3 Sites identified during screening assessment

Sites identified during the screening assessment were named using the site naming format described above in Section 3.4.1.2.

4 STATE OF THE RECEIVING ENVIRONMENT/CULTURAL LANDSCAPE

4.1 Environmental background

4.1.1 Geology and palaeontological potential

The Project Area is dominated by sedimentary rocks of the Matlabas Subgroup of the Waterberg Group. The Waterberg Group is of Mongolian age (2 070 to 1 080 mya) and is predominantly arenaceous (consisting of sand or sand-like particles). The Makgabeng Formation of the Matlabas Subgroup is a large-scale trough with planar cross-beds of fine-medium grained sandstone which area Aeolian in origin.

The Makgabeng Plateau in the Project Area and is one of the most interesting geological phenomena in the Soutpansberg area. The scientific geological research of the mid-1970s proposed that the rocks of the Makgabeng Plateau were deposited in a desert environment. This idea is supported by more recent work which shows that the Makgabeng rocks have been deposited under sub-aerial (wind-blown) conditions as opposed to sub-aqueous (water driven) conditions (Eriksson, et al., 2000; Simpson, et al., In press). An example of these geological features were identified during the HSA and illustrated in Figure 1and Figure 2 below.

Figure 1: Example of palaeodune deposited during a desert conditions in the Makgabeng.

Figure 2: Detail of palaeodune, note the striation evident, indicative of windblown sand deposit.

In addition, evidence of playa lakes within the Makgabeng strata where trace fossils of cyanobacteria were discovered in the playa lake deposits (Eriksson, et al., 2000).

Important fossil deposits in the south-western sections of the Study Area (i.e. greater regional study area) include the plant fossils associated with the Ecca Group of the Karoo Supergroup and Plio-Pleistocene hominin fossils found in the prehistoric cave fills in the

dolomitic rocks at Historic Cave (part of the Makapans Cave complex) north of Mokopane and about 85 km south of the project area.

The sedimentary Kransberg Group rocks are considered sterile of any macrospcopic fossils due to the 2 070 mya to 1 080 mya age range of these rocks (Durand, 2013).

4.1.2 Pedological background, land capability and land use

A desktop pedological study was completed by Digby Wells for the proposed prospecting licence area. Land type data represents generalised soil patterns and terrain types for South Africa published in the form of maps with a scale of 1:250 000. Data was collected from the Agricultural Geo-referenced Information system (AGIS). Five land types and several subunits were identified. Each land type and subunit is characteristic of the geology and topography (i.e. slopes) of the area. Land capability, i.e. arable, grazing, wetland and wilderness, is linked to slopes, topsoil texture, affective rooting depth and topsoil permeability.

Land capability of the entire proposed prospecting licence area was classified into three groups: arable, grazing and wilderness. Grazing far outweighed arable and wilderness capability, comprising 72% of the entire proposed prospecting licence area. Arable capability comprised 22% and wilderness only 6%.

Grazing capability was further considered to be equally moderate to intensive, but may reflect topographical differences. In terms of arable land, only 12% of the proposed project area was considered to be suited to agriculture with the remaining 88% considered as poorly adapted cultivation areas illustrated in Figure 3. This may be due to the predominance of shallow sandy soils that are in general easily leached, resulting in low fertility and high acidity.

Figure 3: General view of landscape south of Blouberg. Note general absence of cultivated fields, possibly due to low arable capability

As soil forms only change over extended periods of time, current conditions and historic land use can be used to extrapolate past land capabilities. The project area therefore represented relatively low arable capability that would be required for more extensive, longer-term occupation by early farming communities. However, grazing capability was shown to be high that may have resulted in seasonal grazing activities by pastoralists and farming communities over the past two millennia.

4.2 Archaeological background and potential

The Early Stone Age (ESA) dates between one million years ago (mya) and 200 thousand years ago (ka). The Middle Stone Age (MSA) dates between 200 ka and 20 ka. The ESA in the Soutpansberg area is relatively rare, whilst MSA occurrences are more common. Little research has been undertaken on the ESA and MSA of the Makgabeng Plateau and Blouberg: any occurrence of such sites should thus be considered significant.

The Later Stone Age (LSA) dates between 20 ka and a 1000 years ago. Van der Ryst (1998) is of the opinion that the Limpopo Province was sparsely occupied during the LSA when compared to the areas further south. This may be due to a lack of research but also as a result of climatic conditions during the LSA. However, the LSA is significant better documented in the Makgabeng and Soutpansberg areas than the ESA and MSA.

In the Makgabeng, LSA sites are frequently associated with rock art sites (discussed separately below). Archaeological research commenced in the area during the 1950s when Jean Humphreys excavated the Makgabeng Shelter. Material culture that was identified there included typical lithics from the Smithfield industry, dated from about 1 020 ± 150 BP (Mason, 1962; Sampson, 1974; Eastwood & van Schalkwyk, 2003). These lithics were very similar to the Smithfield series at Olieboompoort about 160 km south east of the Project Area. According to Mason (1962), the Olieboompoort groups have been associated with LSA groups in the Makgabeng.

More intangible aspects associated with LSA hunter-gatherer groups are the so-called ‘Bushmen water holes’ found on the Makgabeng Plateau as well as in the Soutpansberg area. These features comprise circular or ovoid openings found in horizontal beds of sandstone, frequently covered by a stone ‘lid’ (Cnoops, 1998). Significantly, the presence of both these waterholes and the presence of Bushmen communities in the region are celebrated through the name change of Bochum to Senwabarwana. Senwabarwana in the local Sotho dialect means ‘the place where the Bushmen found water’.

Although there is a relative continuation of the Stone Age in the study area, clear evidence of specific Bushmen and Khoi group identities only appear during the Early Iron Age (EIA) alongside the arrival of Bantu-speaking farming communities. These Bantu-speaking EIA farmers entered the Blouberg-Makgabeng and Soutpansberg areas from approximately 700 CE, settling in permanent villages usually near permanent water sources. The EIA communities practiced mixed agriculture: sorghum and/or millet were cultivated whilst stock was kept, notably sheep and goats and cattle. However, these sedentary agricultural practices were significantly supplemented by hunting and collecting plant food. Evidence for

pottery production and iron working has also been found at sites in both the Makgabeng and the southern parts of the Blouberg (Holt, 2009). In the Blouberg-Makgabeng area, EIA sites were found on the southern side of Blouberg and on the northern side of the Makgabeng Plateau. This is consistent with the land capability of the area, as the most arable land (12% of the entire proposed prospecting licence area) occurs on the plains at below the Makgabeng plateau and Blouberg.

The archaeological evidence also suggests that the autochthonous LSA Bushmen and later pastoralist Khoi groups were not replaced by the farming communities. Instead, there is sufficient evidence to indicate co-existence in an independent relationship (Eastwood & van Schalkwyk, 2003). However, there is clear evidence that both the Bushmen/Khoi and EIA communities were replaced or absorbed by Late Iron Age (LIA) groups entering the area from 1300 CE onwards. These (LIA) groups are generally considered to be the direct ancestors of modern Sotho (Tswana and Pedi), Venda and Ndebele language groups. These groups entered the Blouberg-Makgabeng area at different times between 1350 CE and 1850 CE.

The terminal phase of LIA occupation in the Makgabeng/Blouberg area is considered to be associated with the Hananwa who were firmly established by the mid-19th century when the first whites – European missionaries and Boers – arrived (Eastwood & van Schalkwyk, 2003). There is though evidence to suggest that the protohistoric *Difeqane* period that took place throughout most of South Africa from the late 18th century to early 19th century significantly changed LIA occupation in the area. The Difeqane may have been the catalyst that drove the Hananwa to sanctuary in the Blouberg.

Mzilikazi was the dominant driving force of the Difeqane throughout the *Zuid-Afrikaanse Republiek* (ZAR) or Transvaal. His Ndebele (Matabele) army entered and subjugated or destroyed numerous communities in the region. During the early 19th century a combined Boer and Pedi force successfully expelled the Matabele from the region and drove them into Southern Rhodesia, where Mzilikazi finally settled.

4.3 Background to rock art

The Makgabeng Plateau is one of four distinct rock art areas in the Central Limpopo Basin: the other being the Soutpansberg, the Limpopo-Shashe Confluence area, and north-eastern Venda. Over 460 rock art sites have been documented in the region. A rock art survey that started in 2001 identified and recorded 120 previously unrecorded/unknown sites on the eastern plateau alone. This area only constitutes about a fifth of the plateau's entire surface area (Eastwood, et al., 2002).

Three rock art traditions are represented on the Makgabeng Plateau, each associated with particular cultural groups:

- The first and oldest tradition is the fine line paintings associated with autochthonous LSA and Bushmen hunter-gatherer groups;

- The second tradition is the finger paintings associated with the later arrival of Khoi pastoralists; and
- The last, third tradition is finger paintings associated with much later and possibly historic Sotho-speaking farming communities.

All three rock art traditions are well-preserved and co-occur differentially. The co-occurrence suggests that there were some cultural interactions between the three groups.

Bushmen rock art was produced using fine brushes, quills or sticks. Realistic and proportionally correct animals such as various antelope species are often found. In addition, human figures and more symbolic beings are also represented. A few partially finger-painted images are associated with Bushman art, but these are predominantly of men, women, and animals as well as of loincloths and aprons white (Eastwood, et al., 2002).

In contrast to the Bushman tradition, Khoi (or Khoekhoen) pastoralists are typified by predominantly finger-painted geometric images. The geometric designs are composed entirely of circles, finger lines, finger dots, and handprints that are mostly painted in red pigment, sometimes in red and white, and occasionally only in white (Eastwood, et al., 2002).

The most recent of the three traditions is that associated with Sotho-speaking Iron Age and historical groups. These paintings may be related to nearby archaeological and early historical Sotho settlements. The paintings are predominantly anthropomorphic, zoomorphic and geometric and are mostly white in colour. Evidence of this tradition continuing into the historical period is through the appearance of people in western dress, trains, wagons and at least one painting of a camel. Four unrecorded rock art sites were found during the HSA, representing all three traditions.

4.4 Historical background

White settlement in the region began in the 1840s and increased after the defeat of Mzilikazi when Schoemansdal was established in the Soutpansberg, approximately 67 km east of the project area near modern Makhado (previously Louis Trichardt). This was soon followed by missionary settlement, particularly by the *Berliner Missionsgesellschaft* or the Berlin Mission Society (BMS). The BMS was instrumental in establishing schools and hospitals in the area. Historical sites associated with the BMS are found throughout the area notably a mission station near Blouberg built by Christoph Sonntag. Sonntag was also a confidant of Maleboho, chief of the Bahanwa (Sontag 1983).

Conflict between Boer settlers and terminal LIA groups arose early. Many LIA groups were already scattered as a result of the Difeqane, and the Boers occupied their vacant lands. The most important conflict in the region is perhaps that between the Boers and the Hananwa in 1894, known as the Maleboch War. As noted above the Hananwa was already well established in the Blouberg by the time whites began entering the region. Maleboho refused to pay taxes or be subjugated by the ZAR government. As a result, the ZAR under

General Piet Joubert declared war on Maleboho and laid siege to the Hananwa stronghold on Blouberg.

The siege lasted from May to July 1894. During this period several forts encircling the Hananwa capital were built, cutting off the Hananwa from all food and water supplies (Van Schalkwyk & Moifatswane, 1991). At least 20 fortifications were built by the burghers. These structures are characterised by loopholes that were used to position guns, cartridge cases, and pieces of metal – possibly shrapnel (Van Schalkwyk & Moifatswane, 1991). Forts have been recorded across Blouberg that extends approximately 27 km north of the Project Area.

The current population of the Makgabeng/Blouberg comprises descendants of earlier LIA groups as well as Hananwa, Ndebele and Koni groups and whites. Racial prejudice was evident from early on, but became legislatively entrenched soon after the establishment of the Union of South Africa in 1910. This increased after the National Party came into power in 1948 creating the Apartheid government. A radical move towards institutionalised racial segregation forced countless black communities into the notorious homelands after the Republic of South Africa was founded in 1961. However, no records of forced removals of black communities within the project area were found during the period between 1960 and 1980. The nearest significant records that were found related to evictions that took place in then Louis Trichardt.

From 1960 to 1980, the black community living in Louis Trichardt were evicted from their homes and relocated to the black townships Vleikfontein and Tshikota (Case 3216 - Muzila Phulwana, 1997). The townships are located just outside of Louis Trichardt. The intention of the then apartheid government was to incorporate these two townships into Venda. The eviction of blacks from that area was also intended to create a white-only space in Louis Trichardt with a tarred road and houses (Case 3216 - Muzila Phulwana, 1997).

A direct reaction against the 1961 Apartheid government was the formation in the same year of Mkhonto weSizwe (MK), the armed militant wing of the African National Congress (ANC). The armed action of MK included a sabotage campaign against the government. Mpasa Jacob Rapholo was born on the farm Uitkyk 394 and joined MK in the 1980s after which he received training in Angola and Yugoslavia. He infiltrated South Africa through Swaziland, along with Willy Maditsi to prepare underground bases for future attacks on the government (Jacob Mpasa Rapholo Applicant (AM 5298/97) - AC/2000/081, 2000). According to the Truth and Reconciliation (TRC) case, Rapholo, decided to operate in the area of his birth. However, it is unclear where attacks, if any, took place in the area. The case report mentions a number of attacks on civilians by Rapholo in the Pietersburg (now known as Polokwane) area. It may be possible that the ‘area’ referred to in the case report includes the wider Polokwane area and not specifically the Bochum area.

4.5 Sites Identified During the Desktop Study

Based on results of a review of the University of the Witwatersrand Archaeological Site Database (WASD) as well as of relevant previous impact assessment reports, nine

confirmed EIA and LIA sites and a possible single grave were identified within and around the project area. These sites are listed in Table 4-1 below.

Table 4-1: Confirmed sites identified in the project area

Site Number	Location	Type	Reference
Site-1/1999-SAHRA-0021	11.2 km east of Project Area, near Bochum	Late Iron Age	Roodt, 1999
Site-2/1999-SAHRA-0021	9.6 km east of Project Area, near Bochum	Late Iron Age	Roodt (1999)
BRU001/2002-SAHRA-0051	744 m east of Project Area	Possible single grave	AINP (2002)
2328BB	In Project Area, on the Makgabeng Plateau	Unknown	WITS (2010)
2328BB1	6.04 km north east of Project Area	Early Iron Age	WITS (2010)
2328BB2	In Project Area, on the farm Millbank 325 LR	Early Iron Age	WITS (2010)
2328BB3	In Project Area, on the farm Millbank 325 LR	Late Iron Age Venda site	WITS (2010)
2329AA1	In Project Area, on the farm Brody Hill 76 LS	Late Iron Age stonewalled site	WITS (2010)
2329AAx	In Project Area, on the farm Brody Hill 76 LS	Unknown	WITS (2010)

4.6 Heritage Screening Assessment

The HSA was a high-level, extensive survey aimed at further characterising the cultural landscape, specifically in terms of Sections 34 to 36 of the NHRA. The results of the HSA are presented in this section. Heritage resources were identified and recorded in five of the six proposed prospecting licence areas. A total of 25 sites were recorded that included historical settlements and graves, Iron Age, Stone Age and rock art sites. These are summarised in Table 4-2 below.

Areas of interest and potential sites were identified via aerial imagery prior to the team entering the fields. Access routes into the project area were primarily on municipal road, and where possible, through private / unofficial routes. Areas visible from the vehicle that displayed qualities for potential heritage resources (i.e. clearings, alien vegetation, clusters of rocks etc.) were examined by foot. During the pedestrian survey of unaffected areas, dense vegetation posed limits and an adaptive survey technique was adopted. Where possible, the group would divide and transect an area to cover the maximum surface area and increase the potential to identify heritage resources. Identified heritage resources were recorded through GPS, photographs and detailed notes.

Informal interviews with community members were conducted during the course of the HSA, specifically requesting information regarding intangible and living heritage in the area. Based on the interviewees' responses, some intangible and/or living heritage exists in the project area that included:

- Rainmaking sites on Blouberg mountain and possibly other hills – however, most interviewees consistently said that rainmaking is not actively being practiced;
- Initiation sites in the area of Jerusalem (farm Nieuw Jerusalem 327 LR) where boys' initiation rites are still practiced;
- Use of at least one shelter with rock art as a ZCC gathering place; and
- All burial grounds and graves were considered as living heritage sites as evidence of active, current use of these sites by local communities were evident.

Table 4-2: Summary of heritage resources identified and recorded during the HSA, per prospecting area.

Site_ID	Short Name	Site Type	Map No.	Farm name	Lat.	Lon.
LP30/5/1/1/2/10804PR						
PLA2162/2328BD/S.36_04	S.36_04	S.36 - BGG	2328BD	Early Dawn 361 LR	-23.32876	28.93805
PLA2162/2328BD/S.35_09	S.35_09	S.35 - Iron Age	2328BD	Early Dawn 361 LR	-23.32803	28.92459
PLA2162/2328BD/S.35_10	S.35_10	S.35 - Iron Age	2328BD	Early Dawn 361 LR	-23.32656	28.92381
PLA2162/2328BD/S.35_11	S.35_11	S.35 - Iron Age	2328BD	Early Dawn 361 LR	-23.32608	28.92291
PLA2162/2328BD/S.36_19	S.36_19	S.36 - BGG	2328BD	Norma 365 LR	-23.38921	28.94229
LP30/5/1/1/2/10805PR						
PLA2162/2328BD/S.34_05	S.34_05	S.34 - historical	2328BD	Leipsig 264 LR	-23.16094	28.90101
PLA2162/2328BB/S.34_06	S.34_06	S.34 - historical	2328BB	Sweethome 315 LR	-23.19694	28.8267
PLA2162/2328BD/S.35_18	S.35_18	S.35 - Iron Age	2328BD	Nieuwe Jerusalem 327 LR	-23.26451	28.89769
PLA2162/2328BB/S.34_20	S.34_20	S.34 - historical	2328BB	Mont Blanc 328 LR	-23.23949	28.84958
PLA2162/2328BB/S.34_21	S.34_21	S.34 - historical	2328BB	Leipsig 264 LR	-23.16241	28.90013
PLA2162/2328BB/S.36_22	S.36_22	S.36 - BGG	2328BB	Leipsig 264 LR	-23.16077	28.90035
PLA2162/2328BD/S.35_23	S.35_23	S.35 - rock art	2328BB	Gallashiels 316 LR	-23.23124	28.88136

Site_ID	Short Name	Site Type	Map No.	Farm name	Lat.	Lon.
PLA2162/2328BD/S.35_24	S.35_24	S.35 - rock art	2328BB	Gallashiels 316 LR	-23.23497	28.8787
PLA2162/2328BD/S.35_25	S.35_25	S.35 - rock art	2328BB	Gallashiels 316 LR	-23.23451	28.87902
LP30/5/1/1/2/10807PR						
PLA2162/2328BB/S.35_07	S.35_07	S.35 - rock art	2328BB	Springfields 268 LR	-23.1588	28.84574
LP30/5/1/1/2/10808PR						
PLA2162/2328BD/S.35_08	S.35_08	S.35 - Stone Age	2328BD	Carlsruhe 300 LR	-23.41976	28.77551
PLA2162/2328BC/S.34_12	S.34_12	S.34 - historical	2328BC	Breda 373 LR	-23.36731	28.717
PLA2162/2328BC/S.34_13	S.34_13	S.34 - historical	2328BC	Breda 373 LR	-23.36656	28.7229
PLA2162/2328BC/S.34_14	S.34_14	S.34 - historical	2328BC	Duren 387 LR	-23.38248	28.67977
PLA2162/2328BC/S.34_15	S.34_15	S.34 - historical	2328BC	Breda 373 LR	-23.36892	28.71754
PLA2162/2328BC/S.34_16	S.34_16	S.34 - historical	2328BC	Breda 373 LR	-23.36604	28.72305
PLA2162/2328BC/S.34_17	S.34_17	S.34 - historical	2328BC	Breda 373 LR	-23.36536	28.71571
PLA2162/2328BD/S.35_26	S.35_26	S.35 - rock art	2328BC	Breda 373 LR	-23.36389	28.69722
LP30/5/1/1/2/10810PR						
PLA2162/2328BD/S.35_23	S.35_23	S.35 - Iron Age	2328BD	Millbank 325 LR	-23.26328	28.90293

4.6.1 LP30/5/1/1/2/10804PR

Five heritage sites were recorded in this prospecting licence area, including:

- Three archaeological sites; and
- Two burial grounds.

4.6.1.1 Section 35 – archaeological sites: PLA2126/2328BD/S.35_09, S.35_10 and S.35_11

All three sites comprised ceramic scatters that occurred on the southern slopes the Makgabeng Plateau. Most ceramics were un-diagnostic as illustrated in Figure 4. Of those that did exhibit some decorative motifs the predominant type consisted of bands of fine line incisions, with some having rows of punctates as illustrated in Figure 5. However, the decorative motifs were not sufficient to be considered diagnostic and thus no further inferences regarding relative age and/or ceramic facies were made.

The ceramics scatters were found outside any context in relation to settlement features such as middens, walling or house remains. These sites were considered to be consistent with finds associated with downslope wash from the plateau.

Figure 5Figure 4: Ceramics found at S.35_09. Note predominant undecorated pieces. The decorated pieces were not considered diagnostic.

Figure 5: Examples of fine line incision decorated ceramics from S.35_10. These were also considered undiagnostic.

4.6.1.2 Section 36 – burial grounds and graves: PLA2126/2328BD/S.36_04 and S.36_19

Two burial grounds were recorded.

Burial ground S.36_04 was located on the southern foot of a small hill near Ga-Ngwepe. This site consisted of more than 50 graves, most of which comprised formal granite dressings illustrated in Figure 6.

Burial ground S.36_19 was located on the outskirts of Ga-Masekwa. Approxiamtely 140 graves were noted, the majority of which comprised formal granite grave dressings and headstones as seen in **Error! Reference source not found.**. The earliest date of a deceased noted was 1941. The burial ground was fenced off and access restricted through a gate. At least five majority family groups were represented at this site:

- Ramoroka;
- Ngoepe;
- Mojela;
- Setumu; and
- Masekoa.

Figure 6: General view of burial site S.36_04 at foot of hill near Ga-Ngwepe.

Figure 7: General view of burial ground S.36_19. Note the massive formal granite headstones and dressings that characterise this burial ground.

4.6.2 LP30/5/1/1/2/10805PR

Nine heritage resource sites were identified in this prospecting area. These included:

- Four historical sites;
- A burial ground associated with one of the historical sites; and
- Three rock art sites.

4.6.2.1 Section 34 – historical structures: PLA2126/2328BD/S.34_05 and PLA2126/2328BB/S.34_06, S.34_20 and S.34_21

Site S.34_05 and S.34_21 were located on the southern foot of Blouberg between Ga-Kobe and Ga-Malokela. Both sites comprised low terrace walling on the contours of the slope towards Blouberg. Although two 'sites' were recorded, this is probably an arbitrary distinction as the sites are separated only be a drainage channel originating upslope. These sites may be associated with existing structures visible on 1965 historical aerial photographs. As a result, the sites may represent earlier, now-abandoned wards of either one of the named villages. Large concentrations of ceramics were noted at the lowest point of the sites, adjacent to modern, occupied homesteads. Most ceramics were undecorated and all were undiagnostic. However, several fragments were clearly burnished with red ochre and graphite, indicating a late Sotho ceramic tradition. These ceramic concentrations evidently washed down the mountain slope and no context could be determined as indicated in Figure 8.

Figure 8: Area with extensive ceramic concentration below Site S34_21. Note the sisal plants in the left middle ground, indicating relative recent historical occupation. Site S.34_21 is located on the low elevations visible behind the first line of trees.

The sites are characterised by terraces that divide the sites into individual household units and activity areas, consistent with early historical settlement. Ash middens were noted at the back and sides of households. Hut melt (i.e. remains of unfired mud walls) was noted in most household areas. Site S.34_05 still exhibited existing structures seen in Figure 9.

At least three types of stone walls were noted. Free standing walls in the areas located higher upslope – and therefore presumably older – comprised double-coursed walls with stone and gravel fill illustrated in Figure 11. Terrace and retaining walls in these areas indicated great skill and technique seen in Figure 10.

Walls in the lower areas were predominantly single packed walls illustrated in Figure 12. These may either have delineated gardens, or may indicate decreased skill in stone masonry over time.

Figure 9: View of existing structures at S.34_05. Note the decaying structure in the left foreground creating typical hut melt. Also note dry packed stone retaining wall to the right of the structures.

Figure 10: Retaining wall at Site S.34_05 showing level of skill and technique typical of walling in household areas higher up the slope and presumably older.

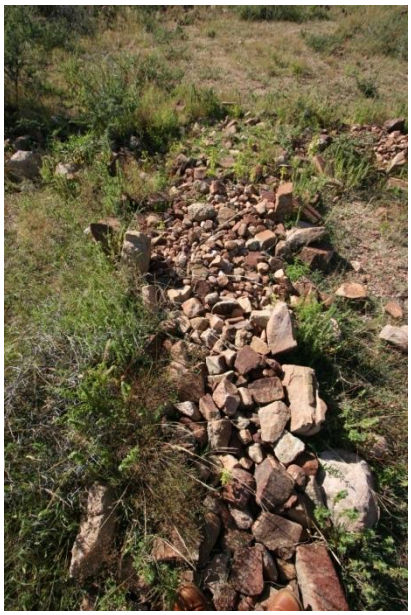

Figure 11: Freestanding double-coursed wall with stone infill near Site S.34_21.

Figure 12: Terraces on lowest slope below site S.34_21. Note difference in walling compared to walling in Figure 10 and Figure 11.

4.6.2.2 Section 36 – burial grounds and graves: PLA2126/2328BD/S.36_22

The burial ground is associated with site S.34_21. At least five graves were noted surrounded by a circular stone wall. Each grave consisted of a low stone cairn a large stone placed on the western end as a headstone illustrated in Figure 13. The graves were oriented approximately east-west. The orientation and fact that the graves had some form of dressing as well as headstones indicate Christian influence and thus more historical dates for the graves. This is consisted with the evidence of the sites and historical photographs.

Figure 13: Burial ground S.36_22 associated with S.34_21. The headstone is being pointed out by K. Rammutloa.

4.6.3 LP30/5/1/1/2/10807PR

Only a single rock art site was recorded in the proposed prospecting licence area although several burial grounds were noted.

4.6.3.1 Section 35 – rock art: PLA2126/2328BB/S.35_07

The recorded site comprised a rock shelter on the western part of the Blouberg. The site was south facing and at least 30 m long as seen in Figure 14 and Figure 15.

The predominant rock art tradition visible in the shelter was found to be Sotho. The paintings consisted of white finger painted animal figures illustrated in Figure 16. Animals included giraffes, possible felines and antelope. At least two human figures with drawn bows were also noted. The white finger paintings seemed to be superimposed over earlier red and yellow paintings.

Figure 14: View towards east of shelter.

Figure 15: View of shelter from south-western approach. Note the relative accessibility of site.

Figure 16: White finger painted animal figures, typical of Sotho rock art traditions.

A separate panel comprising red and yellow figures was noted to the left of the white paintings Figure 17. These also included animals such as giraffe, and possibly a warthog, wild dog and ostrich seen in Figure 18, Figure 19 and Figure 20. These figures were more realistic than the white paintings. Although finger painting here is also evident, some figures showed finer lines, such as the warthog-like figure, possibly indicating the use of some type of 'brush'. However, none of the figures that could be seen displayed typical fine line painting associated with Bushmen rock art.

Figure 17: Panel depicting animal figures in red and yellow, to left of white finger painted panel.

Figure 18: Close up of yellow finger painted giraffes. Note the dog-like figure above the first giraffe to the left.

Figure 19: Close up of a possible warthog painted in yellow pigment. Note the relative finer style compared to the white finger painted figures.

Figure 20: Close-up of a possible ostrich painted in red pigment.

Evidence of current use of the shelter by presumably local communities was found. Several traps were constructed at the bottom of the shelter seen in Figure 21. These traps were constructed using rocks that provided small openings through which animals can move. Poles with wire snares were positioned across these openings to snare small animals such as porcupines. Porcupine remains were found in the shelter with evidence of deliberated slaughter. Significantly, no obvious damage to the rock was noted given current use of the site.

Figure 21: Traps constructed using rocks, poles and wire snares at the bottom of the shelter. These are presumably used to trap small mammals such as porcupines.

In a separate shelter immediately east of the main shelter, a feature was found constructed with slabs of sandstone and a wooden pole, cemented with mud illustrated in Figure 22 and Figure 23. The feature may represent some form of storage space, or may be a more symbolic structure. No direct association with the main shelter could be established.

Figure 22: A structure constructed with slabs of sandstone and cemented with mud found in a narrow, deep shelter immediately east of the main shelter.

Figure 23: Close up of the feature, note the wooden pole at the entrance.

4.6.4 LP30/5/1/1/2/10808PR

Seven heritage resource sites were identified in the proposed prospecting licence area that included:

- Six historical sites, one associated with a burial ground; and
- A MSA site.

4.6.4.1 Section 34 – historical sites: PLA2126/2328BC/S.34_12 to S.34_17

Historical sites S.34_12 – S.34_17 were located on a rise and consisted of stone walled features, kraals, middens and graves. S.34_12 consisted on a single layered rectangular stone wall. Un-diagnostic ceramics and metal were scattered within the vicinity of the wall. It was located within close proximity of S.34_17 and was probably associated with the homestead. S.34_17 consisted of a large kraal (± 30 m diameter), two middens, dilapidated structure, several stone foundations and two burials.

Of the two burials, one was covered in formal dressing and granite tombstone, and the other had very little stone grave dressing and no tombstone. The information on the grave was as follows:

Kopedi Noko France Ngoepe

Born 10.02.1875

Died 05.04.1971

Figure 24: Grave identified at S.34_17

Figure 25: Dilapidated structure and stone foundation in the background at S.34_17

S.34_15 was a single kraal with an approximate 20 m diameter. No settlement features were identified expect the remains of a lower grindstone, ceramic scatters and a historic metal peg. S.34_13 and S.34_16 are most likely one homestead. This homestead consisted of one kraal and several dilapidated structures. The structures were constructed using varying building material. The majority of structures were stonewalled and circular, while some where rectangular and constructed using concrete. The area around this homestead is overgrown suggesting that it has been abandoned for an extended period of time. Material culture remains found in the homestead were limited to un-diagnostic potsherds.

Figure 26: Collapsed stone walled structure at S.34_16

Figure 27: Concrete floor of rectangular structure at S.34_16

S34_14 is a dilapidated historic structure on the outskirts of an established settlement. This is a more recent structure that has been abandoned and where no material culture was identified.

Figure 28: Abandoned structure recorded at site S.34_14.

4.6.4.2 Section 35 – MSA site: PLA2126/2328BC/S.35_08

The Stone Age site was located along the municipal road within the floodline of a stream approximately 150 m to the north. The site consisted of a low density scatter of MSA flakes. An area of approximately 30 m^2 was canvassed yielding less than 15 flakes. Only one scraper was identified.

Figure 29: Stone tool flakes identified at S.35_08

4.6.5 LP30/5/1/1/2/10810PR

Only a single Iron Age site was identified in this prospecting area.

4.6.5.1 Section 35 – Iron Age: PLA2126/2328BD/S.35_23

Site S.35_23 was located on the eastern escarpment of the Makgabeng plateau. The site comprised surface scatters of lower grinding stones, illustrated in Figure 30. The grindstones were predominantly flat with polished surfaces, although some had shallow circular grinding hollows illustrated in Figure 31 and Figure 32. No other artefacts, deposits or structures were noted.

Figure 30: General view of site S.35_23.

Figure 31: Example of a hollowed lower grindstone found at site S.35_23.

Figure 32: Example of a flat grindstone with polishing evident at site S.35_23.

5 SOURCES OF RISK

The proposed prospecting activities will be limited to relatively small footprints associated with invasive methods such as diamond and/or percussion drilling. These activities will result in localised land disturbances. These disturbances will however undergo site rehabilitation will be undertaken and project-related mitigation measures will be implemented throughout the prospecting process. Consultation with affected communities will take place prior to any prospecting activities, thus reducing and avoiding impacts on tangible resources such as burial grounds and graves protected in terms of Section 36 of the NRHA, as well as more intangible resources such as sacred places. Actual drilling should pose minimal risk to heritage resources protected in terms of Section 35 of the NHRA, i.e. archaeological and palaeontological sites, features and objects, as the footprints will be relatively small. Historical structures protected in terms of Section 34 of the NHRA should not be impacted on at all.

Notwithstanding the above, sources of risk to heritage resources may include the following:

- Site clearing and/or levelling of drill platforms;
- Creation of prospecting access roads to drill sites; and
- Increased and concentrated human activity that may result in vandalism of sites.

Specific types of heritage resources that should be considered most sensitive due the identified sources of risk include:

- Rock art sites that may occur in shelters in cliff faces near prospecting activities;
- Archaeological sites that may occur in areas where access roads will be required, as well as at drill sites; and

- Unknown burial sites or graves that may be exposed during access road construction or site levelling.

The impacts on the above identified resources are significantly reduced where prospecting activities take place within human settlement and through consultation with local communities. However, in more remote areas the risks to sites increase. No impacts on significant surface or exposed palaeontological resources, i.e. fossils are expected.

Should viable outcrops be established and trenching and sampling be initiated, the identified sources of risk will increase exponentially given the area of trenching, additional equipment and larger workforces that will be required.

6 RECOMMENDATIONS

Due to the large surface area of the proposed project area and individual prospecting licence areas, an intensive, comprehensive Heritage Impact Assessment (HIA) will not be feasible considering regulated MPRDA timeframes. In addition, the actual impact of the individual prospecting activities will, arguably, be negligible especially in current human settlement areas.

A recommendation for a Letter of Request of Exemption (LRE) of a HIA and any other studies is therefore made. This recommendation is however made with the following provisions:

- Prospecting activities that may take place in locations near cliff faces where a greater potential for rock art can be expected, especially where shelters and/or caves are evident:
  - Drill sites must be placed at least 500 m from the cliff faces;
  - Workers' movement must be restricted and cliff faces assigned 'no-go' areas; and
  - Manual geological exploration of cliff faces, if required, must be conducted by a qualified geologist with attention paid to the possible existence of rock art.
- Where access routes are required, especially in remote, uninhabited areas:
  - A Phase 1 Archaeological Impact Assessment (AIA) should be completed for the proposed access route in terms of Section 38 of the NHRA; and
  - Where access routes will exceed 300 m in length a Phase 1 AIA is a legislated requirement independent of any other legislated requirements in terms of Section 38(1)(a) of the NHRA.
- Where trenching may be required, especially in remote areas:
  - A Phase 1 AIA should be completed in terms of Section 38 of the NHRA;
  - Where trenching and associated activities such as site clearing and levelling will require more than 5 000 m^2 (half hectare) a Phase 1 AIA is a legislated

requirement independent of any other legislated requirements in terms of Section 38(1)(c)(i) of the NHRA

- General provisions in terms of this recommendation further include that should any heritage resource protected in terms of the NRHA be found, exposed and/or accidentally damaged during prospecting activities:
  - Digby Wells will be notified immediately;
  - Chance find procedures must be implemented; and
  - All work in the immediate area must temporarily cease until a proper assessment can be made by Digby Wells specialists.

7 DISCUSSION AND CONCLUSION

Based on the information collected during the desktop research and HSA, it is evident that the proposed prospecting licence area is a significant landscape comprising geologically important aspects as well as various cultural attributes. The cultural landscape includes evidence of past human occupation from at least the LSA through to recent historical episodes.

Due to the extensive area incorporated into the proposed project area, intensive field surveys were not feasible. However, a representative sample of archaeological and other heritage resources were obtained during the HSA. This included tangible resources such as rock art sites, Stone and Iron Age sites and burial grounds and graves. Intangible heritage included potential activities carried out in the area during the South African liberation struggle by MK cadres. In addition, areas associated with living heritage may include caves and shelters currently being used by communities for religious or traditional purposes such as ZCC gatherings, rain-making and initiation, as well as burial grounds and graves.

Notwithstanding the heritage resources identified during the desktop study and the HSA, the proposed project is unlikely to significantly impact on heritage resources. In part this is due to increased human settlement on the plains that may already have resulted in the loss of archaeological resources, especially EIA sites. Conversely though, recent human settlement invariably increases the likelihood of intangible and living heritage being impact on. However, such impacts should be sufficiently addressed and mitigated due to the relatively minor scale of individual prospecting activities, as well as mitigation measures such as on-going community consultation that will be included in the EIA/EMP.

The relative lack of recorded archaeological sites identified during the review of previous impact assessment reports, as well as during the HSA may be due to the low land capability inherent in the land types associated with the project area. This indicated that the area has been relatively sparsely occupied in the past and thus decreases the likelihood of impacting on archaeological heritage resources. However, if this assumption is accurate when sites are identified, their value increases due to the relative rarity of sites. This is especially important in terms of EIA and rock art sites.

Sources of risk were identified that may impact on heritage resources. These risks will be primarily associated with clearing of vegetation and topsoil. These risks and associated impacts may be avoided and minimised following the recommendations that were made. However, the proposed prospecting activities were in general considered to of negligible risk to potential heritage resources that may occur in the project area. As such, it was recommended that the project be exempted from further heritage assessments.

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Appendix A: Curriculum Vitae of Specialists

JOHAN NEL

Mr Johan Nel

Unit manager: Heritage Resources Management

Social Sciences

Digby Wells Environmental

1 EDUCATION

2002 BA Honours - Archaeology

2001 BA Anthropology & Archaeology

1997 Matriculated Brandwag Hoërskool

2 LANGUAGE SKILLS

Fluent in English and Afrikaans

3 EMPLOYMENT

2011 to present	Unit manager: Heritage Resources Management, Digby Wells Environmental
2010-2011	Archaeologist, Digby Wells Environmental
2005-2010	Manager and co-owner, Archaic Heritage Project Management
2003-2005	Freelance archaeologist
	Resident archaeologist, Rock Art Mapping Project, Ndidima, Ukhahlamba-Drakensberg World Heritage Site
2002-2003	Special Assistant: Anthropology, Department of Anatomy, University of Pretoria
2001-2002	Technical Assistant: Department of Anatomy, University of Pretoria
1999-2001	Assistant: Mapungubwe Project, National Cultural History Museum & Department of Anthropology and Archaeology, UP

4 EXPERIENCE

I have 13 years of combined experience in the field of cultural heritage resources management (HRM) including archaeological and heritage assessments, grave relocation, social consultation and mitigation of archaeological sites. I have gained experience both within urban settings and remote rural landscapes. Since 2010 I have been actively involved in environmental management that has allowed me to investigate and implement the integration of heritage resources management into environmental impact assessments (EIA). Many of the projects since have

required compliance with International Finance Corporation (IFC) requirements and other World Bank standards. This exposure has allowed me to develop and implement a HRM approach that is founded on international best practice and leading international conservation bodies such as UNESCO and ICOMOS. I have worked in most South African Provinces, as wells Swaziland, the Democratic Republic of the Congo and Sierra Leone. I am fluent in English and Afrikaans, with excellent writing and research skills.

5 PROJECT EXPERIENCE

PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENTS:

- Above Ground Storage Tanks survey, SASOL Oil (Pty) Ltd, Free State Province, South Africa
- Access road establishment , AGES-SA, Tzaneen, South Africa
- Boikarabelo Railway Link, Resgen South Africa, Steenbokpan, South Africa
- Conversion of prospecting rights to mining rights, Georock Environmental, Musina, South Africa
- Galaxy Gold Agnes Mine, Barberton, South Africa
- HCI Khusela Palesa Extension, Bronkhorstspruit, South Africa
- Kennedy's Vale township establishment, AGES-SA, Steelpoort, South Africa
- Koidu Diamond Mine, Koidu Holdings, Koidu, Sierra Leone
- Lonmin Platinum Mine water pipeline survey, AGES-SA, Lebowakgomo, South Africa
- Mining right application, DERA Environmental, Hekpoort, South Africa
- Mogalakwena water pipeline survey, AGES-SA, Limpopo Province, South Africa
- Nzoro Hydropower Station, Environmental and Social Impact Assessment, DRC
- Randgold Kibali Gold Project, Environmental and Social Impact Assessment, Kibali, Democratic Republic of the Congo
- Randwater Vlakfontein-Mamelodi water pipeline survey, Archaeology Africa cc, Gauteng, South Africa
- Residential and commercial development, GO Enviroscience, Schoemanskloof, South Africa
- Temo Coal, Limpopo, South Africa
- Transnet Freight Line survey, Eastern Cape and Northern Cape, ERM, South Africa
- Van Reenen Eco-Agri Development Project, GO Enviroscience, South Africa
- Platreef Platinum Mine, Ivanhoe Nickel & Platinum, Mokopane, South Africa

MITIGATION PROJECTS:

- Mitigation of Iron Age archaeological sites: Kibali Gold Project, DRC

- Mitigation of Iron Age metalworking site: Koidu Diamond Mine, Sierra Leone
- Mitigation of Iron Age sites: Boikarabelo Coal Mine, South Africa
- Exploratory test excavations of alleged mass burial site: Rustenburg, Bigen Africa Consulting Engineers, South Africa
- Mitigation of Old Johannesburg Fort: Johannesburg Development Agency (JDA), South Africa
- Site monitoring and watching brief: Department of Foreign Affairs Head Office, Imbumba-Aganang Design & Construction Joint Venture, South Africa

GRAVE RELOCATION

- Du Preezhoek-Gautrain Construction, Bombela JV, Pretoria, South Africa
- Elawini Lifestyle Estate social consultation, PGS (Pty) Ltd, Nelspruit, South Africa;
- Motaganeng social consultation, PGS (Pty) Ltd Burgersfort, South Africa
- Randgold Kibali Mine, Relocation Action Plan, Kibali, DRC
- Repatriation of Mapungubwe National Park and World Heritage Site, DEAT, South Africa
- Smoky Hills Platinum Mine social consultation, PGS (Pty) Ltd Maandagshoek South Africa
- Southstock Colliery, Doves Funerals, Witbank, South Africa
- Tygervallei. D Georgiades East Farm (Pty) Ltd, Pretoria, South Africa
- Willowbrook Ext. 22, Ruimsig Manor cc, Ruimsig, South Africa
- Zondagskraal social consultation, PGS (Pty) Ltd,Ogies, South Africa
- Zonkezizwe Gautrain, PGS, (Pty) Ltd, Midrand, South Africa

OTHER HERITAGE ASSESSMENTS AND REVIEWS:

- Heritage Scoping Report on historical landscape and buildings in Port Elizabeth: ERM South Africa
- Heritage Statement and Cultural Resources Pre-assessment scoping report on Platreef Platinum Mine, Mokopane: Platreef Ltd
- Heritage Statement and Scoping Report on five proposed Photo Voltaic Solar Power farms, Northern Cape and Western Cape: Orlight SA
- Land claim research Badenhorst family vs Makokwe family regarding Makokskraal, Van Staden, Vorster & Nysschen Attorneys, Ventersdorp South Africa
- Research report on Cultural Symbols, Ministry for Intelligence Services, Pretoria, South Africa
- Research report on the location of the remains of kings Mampuru I and Nyabela, National Department of Arts and Culture, Pretoria, South Africa
- Review of Archaeological Assessment: Resources Generation, Coal Mine Project in the Waterberg area, Limpopo Province

- Review of CRM study and compilation of Impact Assessment report, Zod Gold Mine, Armenia

6 PROFESSIONAL AFFILIATIONS

Society for Africanist Archaeologists (SAfA)

7 PROFESSIONAL REGISTRATION

Association fo Southern African Professional Archaeologists (ASAPA)

Accredited by ASAPA Cultural Resources Management section

International Association of Impact Assessors (IAIA)

8 PUBLICATIONS

Nel, J. 2001. Cycles of Initiation in Traditional South African Cultures. *South African Encyclopaedia* (MWEB).

Nel, J. 2001. *Social Consultation: Networking Human Remains and a Social Consultation Case Study*. Research poster presentations at the Bi-annual Conference (SA3) Association of Southern African Professional Archaeologists: National Museum, Cape Town.

Nel, J. 2002. *Collections policy for the WG de Haas Anatomy museum and associated Collections*. Unpublished. Department of Anatomy, School of Medicine: University of Pretoria.

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Nel, J. 2004. *Ritual and Symbolism in Archaeology, Does it exist?* Research paper presented at the Bi-annual Conference (SA3) Association of Southern African Professional Archaeologists: Kimberley

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Nel, J. 2012. *HIAs for EAPs*. Paper presented at IAIA annual conference: Somerset West.

JUSTIN DU PIESANIE

Mr. Justin du Piesanie

Archaeology Consultant

Social Sciences Department

Digby Wells Environmental

1 EDUCATION

University of the Witwatersrand

- BA Degree (2004)
- BA Honours Degree (2005) - Archaeology
    - Title of Dissertation - Seal Skeletal Distribution of Herder and Forager Sites at Kasteelberg, Western Cape Province of South Africa.
- Master of Science (MSc) Degree (2008) – Archaeology
    - Title of Dissertation – Understanding the Socio-Political Complexity of Leokwe Society during the Middle Iron Age in the Shashe-Limpopo Basin through a Landscape Approach

2 LANGUAGE SKILLS

English First Language

Afrikaans Second Language

3 EMPLOYMENT

2011 to Present:	Archaeology Consultant at Digby Wells Environmental
2009 to 2011:	Archaeology Collections Manager at the University of the Witwatersrand.
2009 to 2011:	Freelance Archaeologist for Archaeology Resource Management (ARM), Matakoma Heritage Consultants, Wits Heritage Contracts Unit & Umlando Heritage Consultants.
2006 to 2007:	Tour Guide at Sterkfontein Caves World Heritage Site.

4 EXPERIENCE

- Wits Fieldschool - Excavation at Meyersdal, Klipriviersberg Johannesburg (Late Iron Age Settlement).
- Wits Fieldschool - Phase 1 Survey of Prentjiesberg in Ugie / Maclear area, Eastern Cape.
- Wits Fieldschool – Excavation at Kudu Kopje, Mapungubwe National Park Limpopo Province.
- Wits Fieldschool – Excavation of Weipe 508 (2229 AB 508) on farm Weipe, Limpopo Province.
- Survey at Meyerdal, Klipriviersberg Johannesburg.
- Mapping of Rock Art Engravings at Klipbak 1 & 2, Kalahari.
- Survey at Sonop Mines, Windsorton Northern Cape (Vaal Archaeological Research Unit).
- Excavation of Kudu Kopje, Mapungubwe National Park Limpopo Province.
- Excavation of KK (2229 AD 110), VK (2229 AD 109), VK2 (2229 AD 108) & Weipe 508 (2229 AB 508) (Origins of Mapungubwe Project)
- Phase 1 Survey of farms Venetia, Hamilton, Den Staat and Little Muck, Limpopo Province (Origins of Mapungubwe Project)
- Excavation of Canteen Kopje Stone Age site, Barkley West, Northern Cape
- Excavation of Khami Period site AB32 (2229 AB 32), Den Staat Farm, Limpopo Province

5 PROJECT EXPERIENCE

- Phase 2 Mitigation at Meyersdal, Klipriviersberg Johannesburg (ARM)
- Phase 1 Mitigation – Mapping of Late Iron Age Site in Pilansberg, Sun City (ARM)
- Phase 1 Mitigation – Survey of Witbank dam development (ARM)
- Phase 1 Mitigation – Survey of Glen Austin AH, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 34, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 38, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 44, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 46, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 47, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 48, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 49, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 50, Johannesburg (Matakoma)

- Phase 1 Mitigation – Survey of Modderfontein AH Holding 61, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 62, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 71, Johannesburg (Matakoma).
- Phase 1 Mitigation – Survey of Modderfontein AH Holding 72, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Modderfontein 35IR Portion 40, Johannesburg (Matakoma)
- Phase 1 Mitigation – Survey of Rhino Mines, Thabazimbi Limpopo Province (ARM)
- Phase 1 Mitigation – Survey of Moddergat 389KQ, Schilpadnest 385KQ, Swartkop 369KQ, Cronimet Project, Thabazimbi Limpopo Province (Matakoma)
- Desktop Study – Desktop study for the Eskom Thohoyandou SEA Project, Limpopo Province (Matakoma)
- Phase 2 Mitigation – Excavation of Iron Age site on Wenzelrust, Shoshanguve Gauteng (Heritage Contracts Unit)
- Phase 1 Mitigation – Mapping of Late Stone Age shelter, Parys, Free State
- Phase 1 Mitigation – Survey of Vaalkrans Battlefield for the Transnet NMPP Line (Umlando)
- Phase 1 Mitigation – Survey of Portion 222 of Mindale Ext 7 Witpoortjie 254 IQ & Portion 14 of Nooitgedacht 534 IQ, Johannesburg (ARM)
- Phase 2 Mitigation – Excavation of Site 19 for the Anglo Platinum Mines Der Brochen & Booysendal, Steelpoort, Mpumalanga (Heritage Contracts Unit)
- Phase 1 Mitigation – Mapping of sites 23, 26, 27, 28a & b for the Anglo Platinum Mines Der Brochen & Booysendal, Steelpoort, Mpumalanga (Heritage Contracts Unit)
- Desktop Study - Desktop study for the inclusion into the Thohoyandou Electricity Master Network for Eskom, Limpopo Province (Strategic Environmental Focus)
- Phase 1 Mitigation – Mapping of historical sites as part of the mitigation for the expansion of the Bathlako Mine's impact area (Heritage Contracts Unit).
- Phase 2 Mitigation – Kibali Grave Relocation Project (KGRP) for the Kibali Gold Project, Democratic Republic of Congo (Digby Wells)
- Phase 1 Mitigation – Heritage Assessment and Survey for the proposed Kibali Hydro Power Stations, Democratic Republic of Congo (Digby Wells)
- Phase 1 Mitigation – Heritage Impact Assessment & Survey of the farm Vygenhoek for Aquarius Resources Everest North Mining Project, Steelpoort, Mpumalanga (Digby Wells)
- Phase 1 Mitigation – Heritage Impact Assessment for the Gold One International Ltd Proposed Geluksdal Tailings Storage Facility and Pipeline Infrastructure, Johannesburg, Gauteng Province (Digby Wells)
- Phase 1 Mitigation – Burial Grounds and Graves Survey (BGGS) for Platreef Resources, Mokopane, Limpopo Province (Digby Wells)
- Phase 2 Mitigation – Archaeological Impact Assessment of sites for Resource Generation Boikarabelo Mine, Steenbokpan, Limpopo Province (Digby Wells)

- Phase 1 Mitigation – Watching Brief for Bokoni Platinum Mines (Pty) Ltd, Burgersfort, Limpopo Province (Digby Wells)
- Heritage Statement for Rhodium Reefs Limited Platinum Operations on the Farm Kennedy's Vale 361 KT, Steelpoort, Mpumalanga Province (Digby Wells).
- Socio-Economic and Asset Survey, SEGA Gold Mining Project, Cluff Gold PLC, Burkina Faso (Digby Wells)

6 PROFESSIONAL AFFILIATIONS

Society for Africanist Archaeologists (SAfA) Member

7 PROFESSIONAL REGISTRATION

Association of Southern African Professional Archaeologists (ASAPA): Professional & CRM Member

8 PUBLICATIONS

- Huffman, T.N. & du Piesanie, J.J. 2011. Khami and the Venda in the Mapungubwe Landscape. Journal of African Archaeology 9(2): 189-206

SHAHZAADEE KARODIA

Ms Shahzaadee Karodia

Archaeology Consultant

Social Science Department

Digby Wells Environmental

1 EDUCATION

- 2006 BA Anthropology & Archaeology, University of the Witwatersrand
- 2007 BSc Honours. Palaeontology, University of the Witwatersrand
  - Courses included: comparative vertebrate anatomy; cladistics analysis; primate and human evolution; Karoo biostratigraphy; dinosaurs and the origins of birds; Cenozoic mammals; taphonomy; and palaeoecology
  - Honours Thesis: “Encephalization and its relationship to orbit size in modern humans and a small bodied population from Palau, Micronesia”.
- 2012 MSc Archaeology, University of the Witwatersrand
  - MSc Thesis: “Naturally mummified human remains from Historic Cave, Limpopo, South Africa”.
  - Skills obtained during MSc included: stereo microscopy; light microscopy; scanning electron microscopy; and histology

2 LANGUAGE SKILLS

English (read, write, speak)

Currently completing French training for beginners

3 EMPLOYMENT

2012:	Archaeology consultant, Digby Wells Environmental
April 2012 – June 2012:	External archaeology research consultant, EcoAfrica
April 2011 – November 2011:	Archaeology intern, University of Pretoria

2007 – 2008:	Palaeontology collections assistant, BPI University of the Witwatersrand
2006 – 2007:	Tour guide, Sterkfontein Caves

4 EXPERIENCE

- Archaeology Field School in Klipriviersberg with Dr Karim Sadr, University of the Witwatersrand
- Archaeology Field School in Swartkrans and Maropeng with Dr Kathy Kuman, University of the Witwatersrand
- Archaeology Field School in Ottosdaal with Dr Thembi Russell, University of the Witwatersrand
- Palaeontology Field School in the Karoo with Professor Bruce Rubidge, University of the Witwatersrand
- Palaeontology Field School in Gladysvale with Professor Lee Berger, University of the Witwatersrand
- Palaeontology Field School in Wonderkrater with Dr Lucinda Backwell, University of the Witwatersrand

5 PROJECT EXPERIENCE

- Heritage Statement and Letter of Recommendation from Exemption for the Central Basin, Witwatersrand Acid Mine Drainage Project
- Heritage Impact Assessment for the Witwatersrand Gold Fields Acid Mine Drainage Project (Western Basin)
- Archaeological Watching Brief on Access Road for Bokoni Platinum Ltd
- Heritage Statement and Notification of Intent to Develop for Eskom Transmission Division – Roodepoort Strengthening Project;
- Heritage Statement and Notification of Intent to Develop for the Zandbaken Coal Mine Project, Zandbaken 585 IR, Sandbaken 363 IR and Bosmans Spruit 364 IS, Standerton, Mpumalanga
- Heritage Statement and Notification of Intent to Develop for Rhodium Reef Limited Platinum Operation, 2430 CA & CC, De Goedverwachting 332 KT, Boschkloof 331 KT and Belvedere 362 KT
- Heritage Statement and Notification of Intent to Develop for the Thabametsi Project, 2327CB, Vaalpensloop 313 LQ, Lephalale, Limpopo Province
- Heritage Impact Assessment for the Proposed Thabametsi Project, Lephalale, Limpopo Province

6 PROFESSIONAL AFFILIATIONS

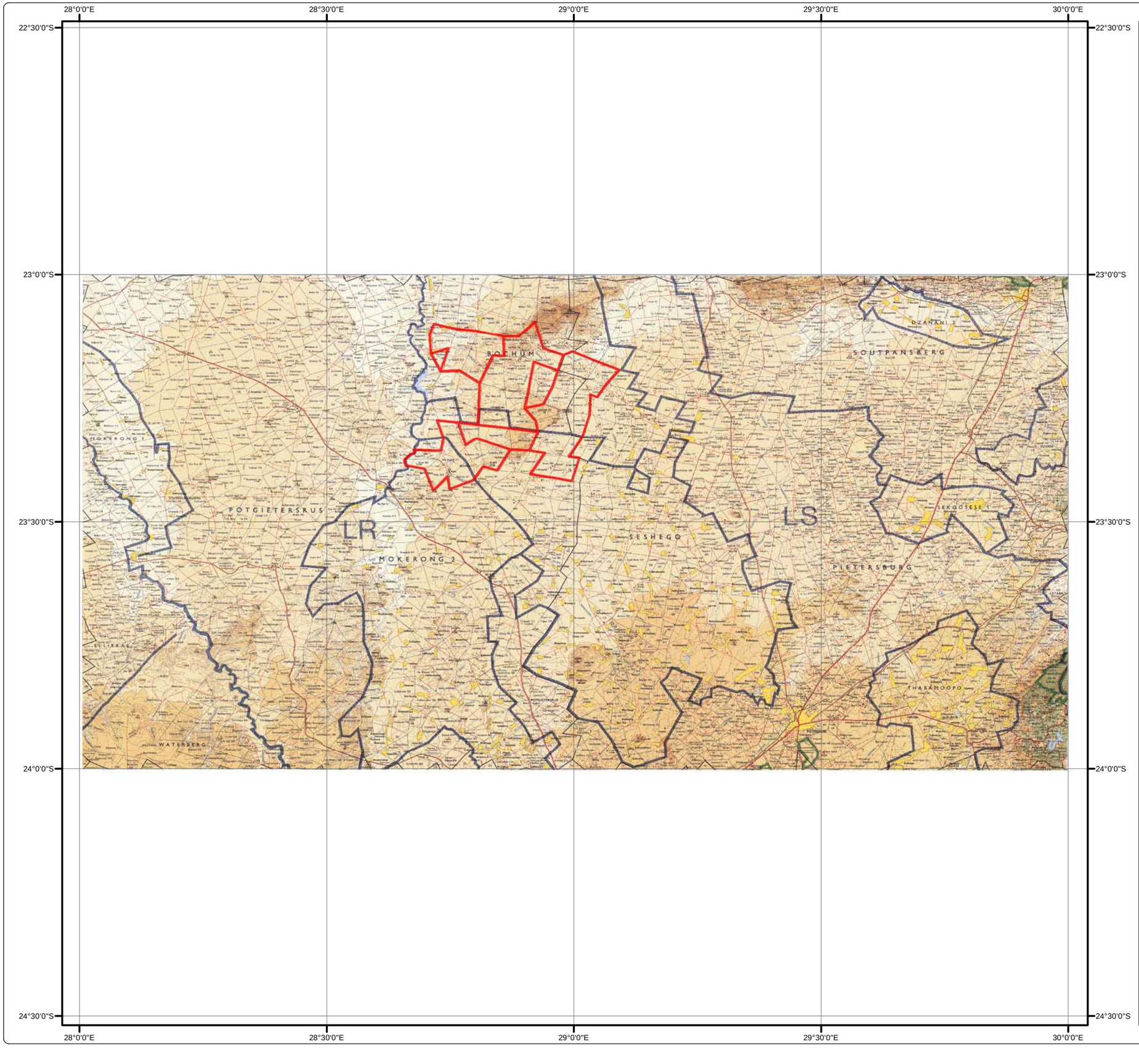
- Association of Southern African Professional Archaeologists (ASAPA)
- The South African Archaeology Society (SAAS)
- Society of Africanist Archaeologists (SAfA)
- The Geological Survey of South Africa (GSSA)
- The Palaeontological Society of Southern Africa (PSSA)
- The South African Society for Amateur Palaeontologists (SASAP)

Appendix B: Location and Site Maps

Plan 1

Waterberg PR Applications

Regional Location / Topographical Map
1 : 250 000



Legend

Prospecting Areas

1:250 000 Topographical Map

2328 - Polokwane

DIGBY WELLS ENVIRONMENTAL

www.digbywells.com

Projection: Transverse Mercator
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Ref #: amc.PLA2126.201303.231
Revision Number: 2
Date: 27/03/2013

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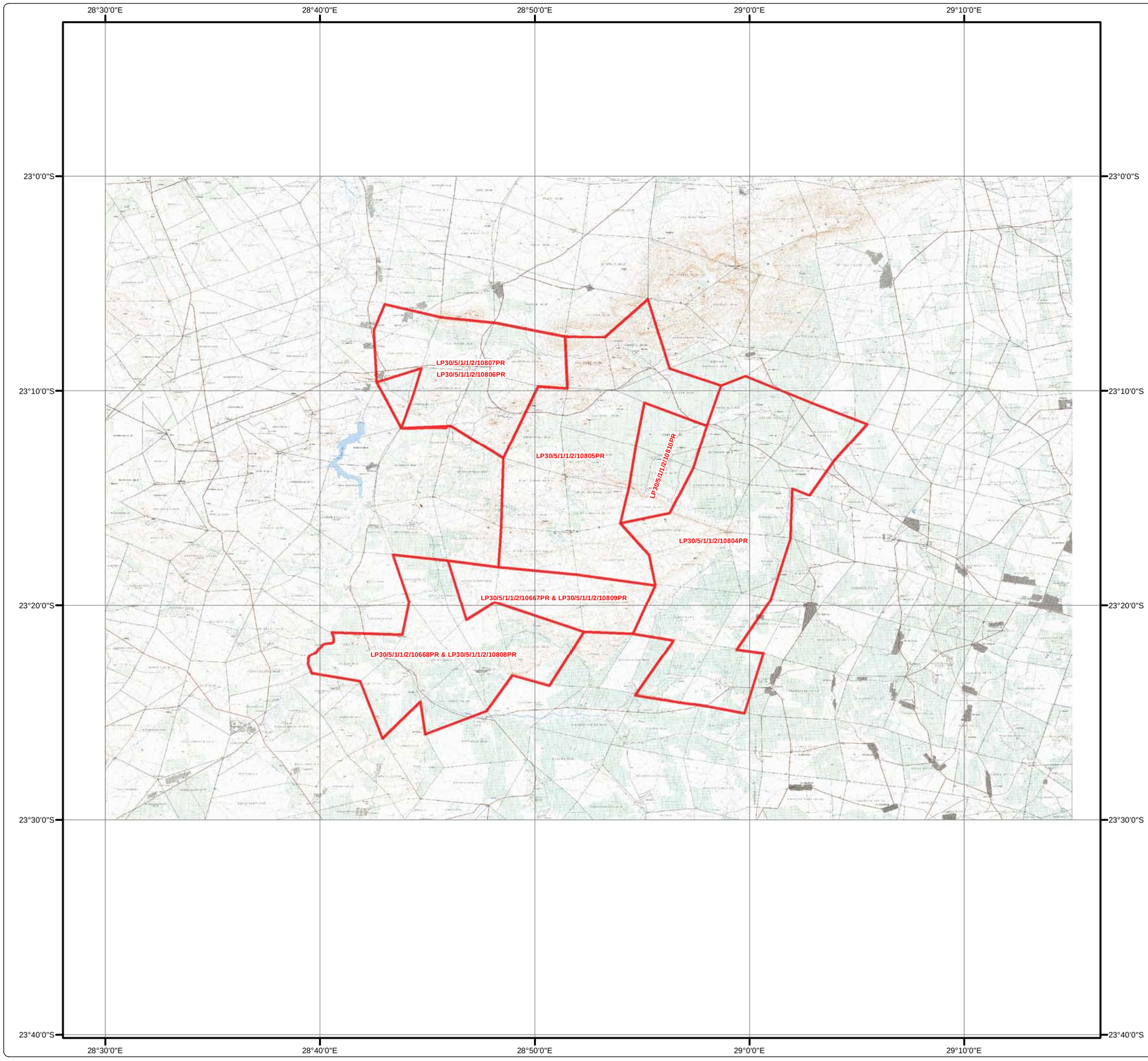
Kilometres
1:850 000

Plan 2

Waterberg PR Applications

Regional Location / Topographical Maps
1:50 000



Legend

Prospecting Areas

1:50 000 Topographical Maps

2328BA - Letswatla
2328BB - Ka-Gobe
2328BC - Rebone
2328BD - Mahlwareng
2329AA - Blouberg
2329AC - Bochum

DIGBY WELLS ENVIRONMENTAL

www.digbywells.com

Projection: Transverse Mercator
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Ref #: amc.PLA2162.201304.146
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Date: 08/04/2013

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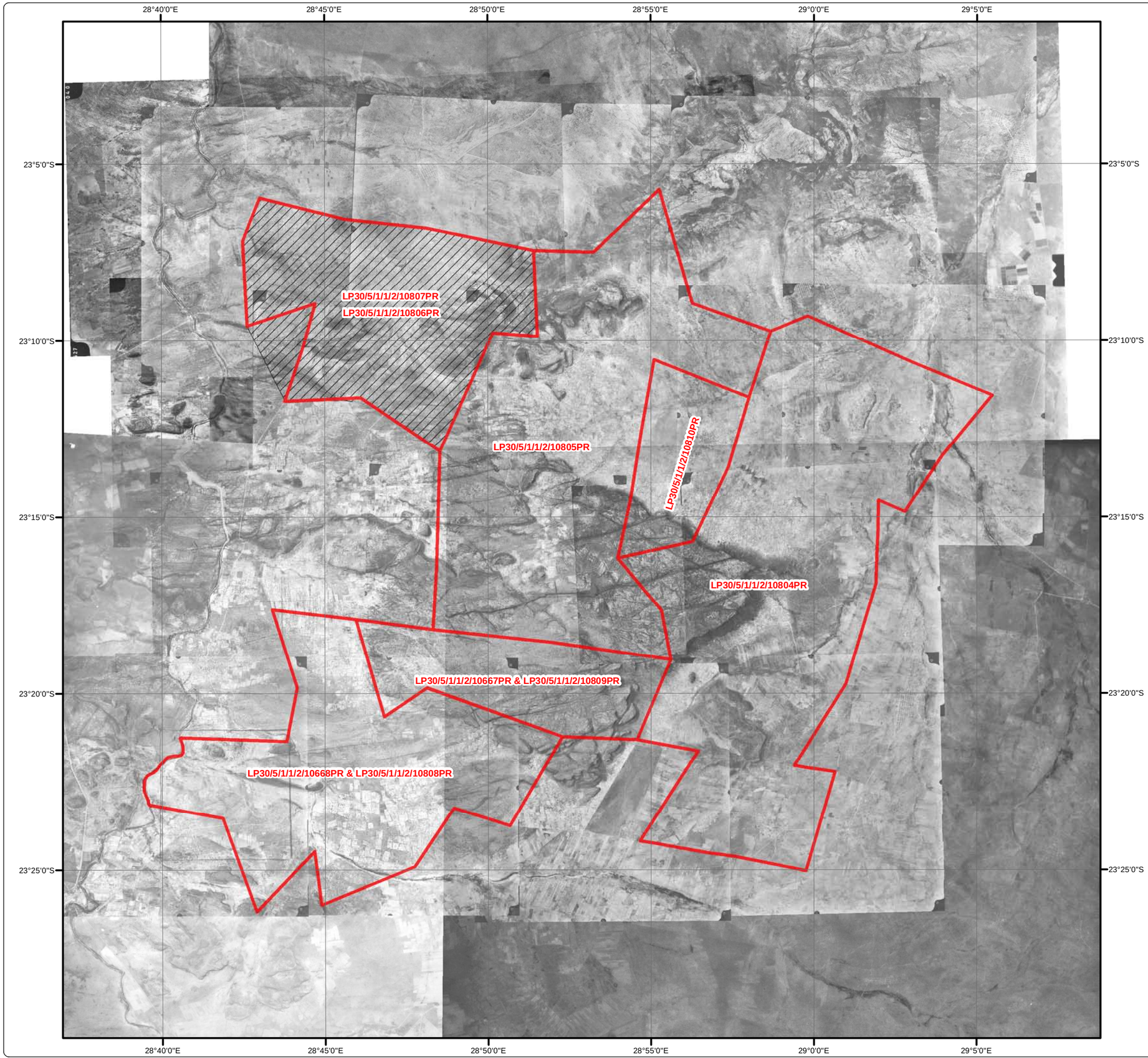
Kilometres
1:330 000

Plan 3

Waterberg PR Applications

Historical Layering



Legend

- LP30/5/1/1/2/10806PR
- Other Prospecting Areas

DIGBY WELLS ENVIRONMENTAL

www.digbywells.com

Projection: Transverse Mercator
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Central Meridian: 29°E

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Revision Number: 2
Date: 09/04/2013

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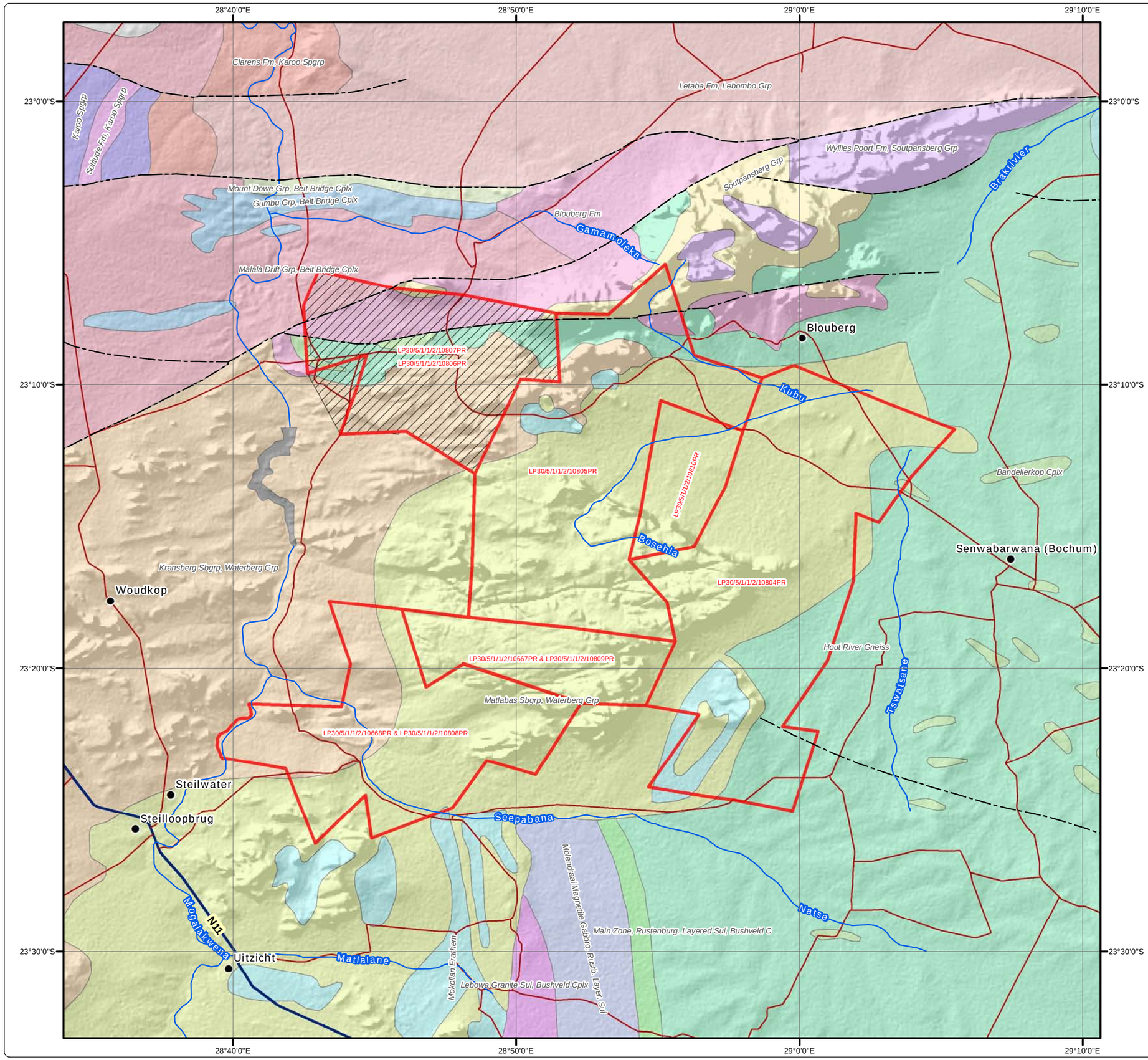
Kilometres

1:200 000

Plan 4

Waterberg PR Applications

Geological Context



Legend

- LP30/5/1/1/2/10806PR
- Other Prospecting Areas
- Major Town
- Secondary Town
- Other Town
- Settlement
- Main Road
- National Road
- Rivers

Geology

- Fault
- Unknown
- Bandelierkop Complex
- Blouberg Formation
- Clarens Formation, Karoo Supergroup
- Gumbu Group, Beit Bridge Complex
- Hout River Gneiss
- Karoo Supergroup
- Kransberg Subgroup, Waterberg Group
- Lebowa Granite Suite, Bushveld Complex
- Letaba Formation, Lebombo Group
- Main Zone, Rustenburg. Layered Suite, Bushveld C
- Malala Drift Group, Beit Bridge Complex
- Matlabas Subgroup, Waterberg Group
- Mokolian Erathem
- Molendraai Magnetite Gabbro, Rustb. Layer. Suite
- Mount Dowe Group, Beit Bridge Complex
- Pietersburg Group
- Solitude Formation, Karoo Supergroup
- Soutpansberg Group
- Wyllies Poort Fm, Soutpansberg Group

DIGBY WELLS ENVIRONMENTAL

www.digbywells.com

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Ref #: amc.PLA2161.201303.167
Revision Number: 2
Date: 20/03/2013

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Kilometres
1:250 000

Plan 5

Waterberg PR Applications

All Identified Heritage Resources

Legend

- LP30/5/1/1/2/10806PR
- Other Prospecting Areas
- Town
- Main Road
- National Road
- Rivers
- Dams/Water Areas

Identified Site Visit and Historical Layering Heritage Resources

- Steilloopbrug 1965 Historical Layering Resources
- Pietersburg 1980 Historical Layering Resources
- Pietersburg 1997 Historical Layering Resources
- Pietersburg 1980 Historical Layering Resources
- Pietersburg 1997 Historical Layering Resources

Heritage Resources

- S.34 - Historical
- S.35 - Iron Age
- S.35 - Stone Age
- S.35 - Historical / Archaeology
- S.35 - Rock Art
- S.36 - Burial Grounds and Graves

DIGBY WELLS ENVIRONMENTAL

www.digbywells.com

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Datum: Hartebeesthoek 1994
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Revision Number: 2
Date: 10/04/2013

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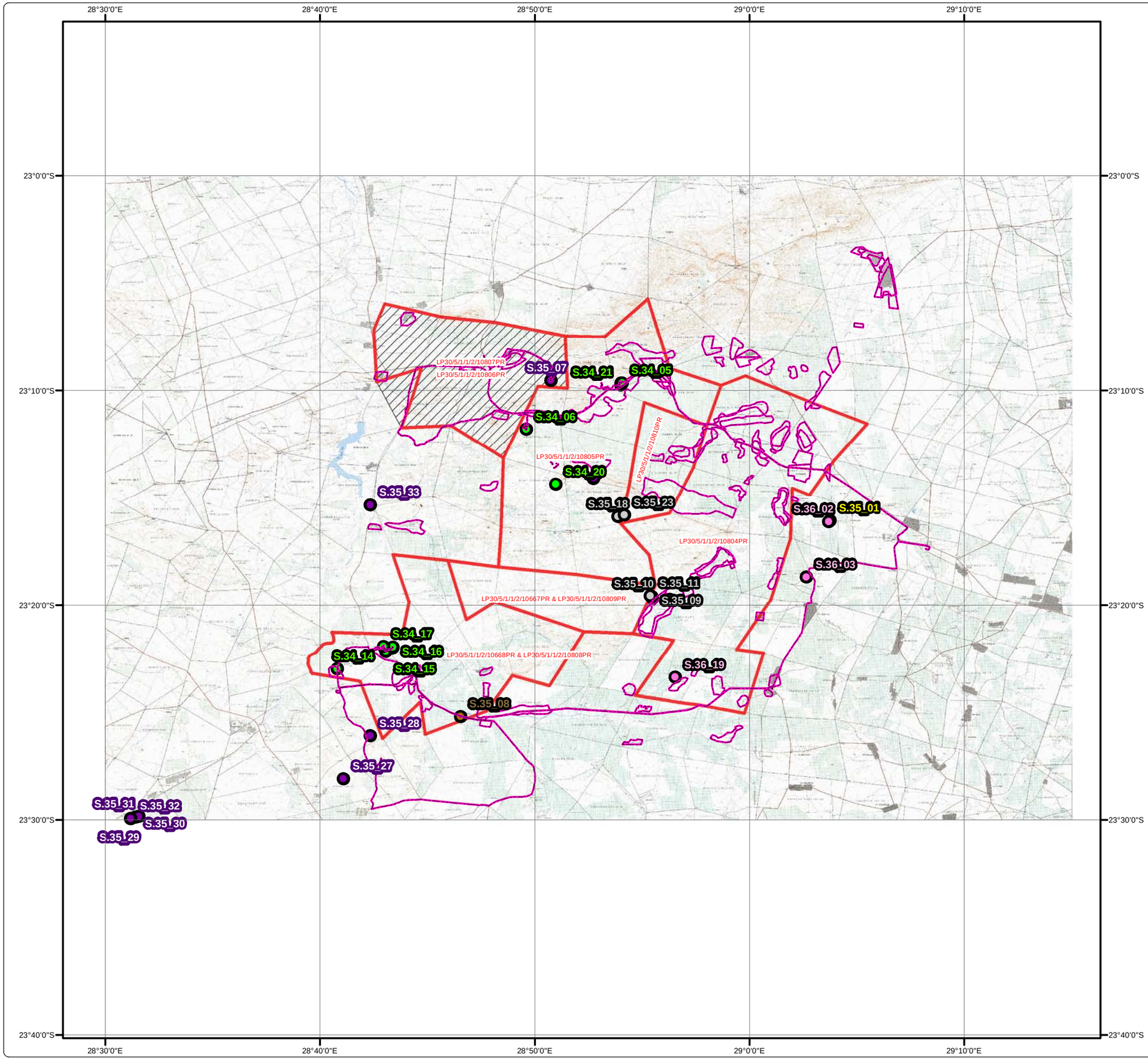
Kilometres
1:270 000

Plan 6

Waterberg PR Applications

Heritage Sites Overview



Legend

- LP30/5/1/1/2/10806PR
- Other Prospecting Areas
- Site Visit Tracks

Heritage Points

- S.34 - Historical
- S.35 - Iron Age
- S.35 - Stone Age
- S.35 - Historical / Archaeology
- S.35 - Rock Art
- S.36 - Burial Grounds and Graves

1:50 000 Topographical Maps

2328BA - Letswatla
2328BB - Ka-Gobe
2328BC - Rebone
2328BD - Mahlwareng
2329AA - Blouberg
2329AC - Bochum

DIGBY WELLS ENVIRONMENTAL

www.digbywells.com

Projection: Transverse Mercator
Datum: Hartebeesthoek 1994
Central Meridian: 29°E

Ref #: amc.PLA2162.201304.146
Revision Number: 2
Date: 08/04/2013

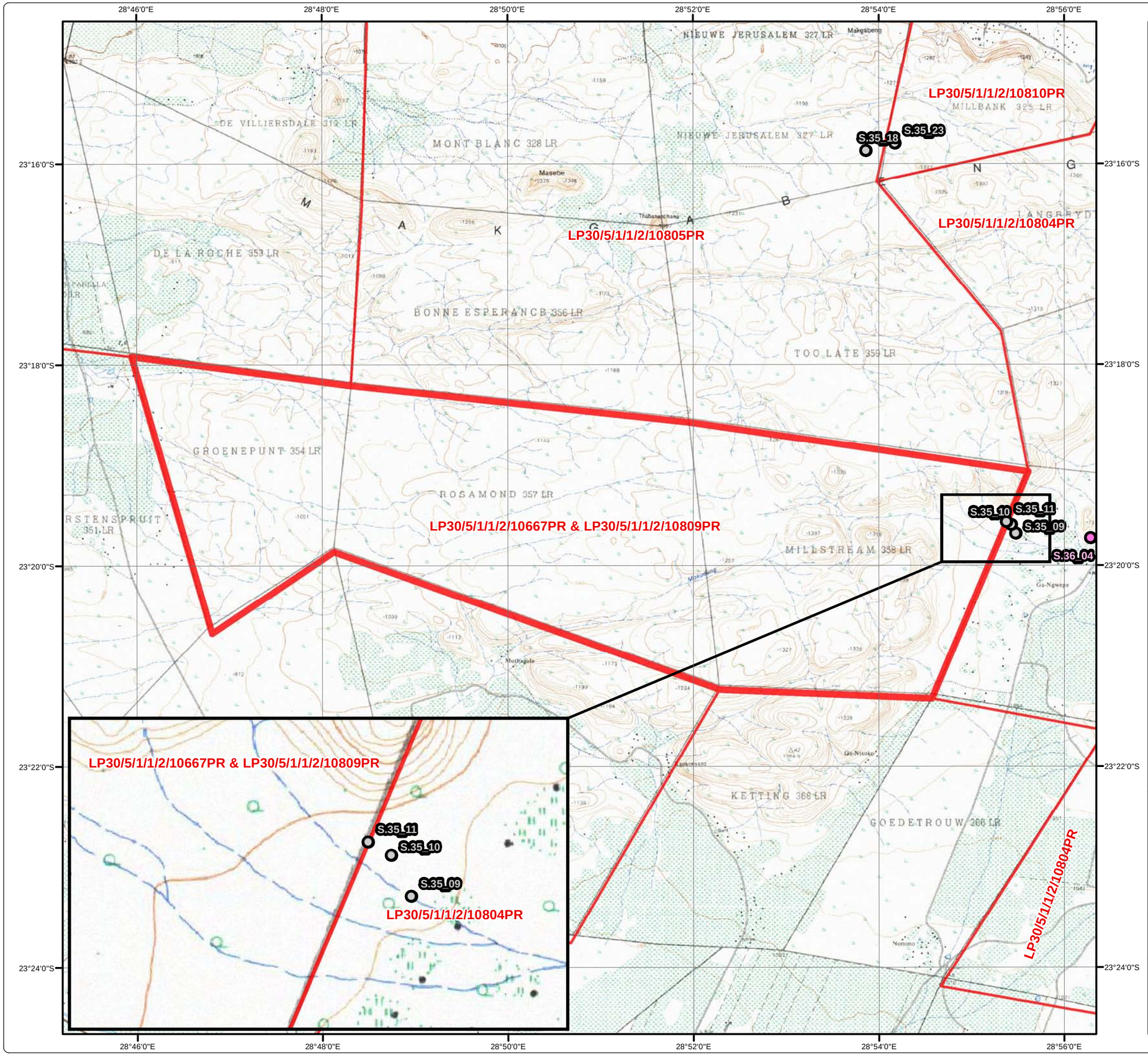
N 0 2.5 5 10 15 20

Kilometres
1:330 000

Plan 7

Waterberg PR Applications

Heritage Sites LP30/5/1/1/2/10667PR & LP30/5/1/1/2/10809PR



Legend

- LP30/5/1/1/2/10667PR & LP30/5/1/1/2/10809PR
- Other Prospecting Areas

Heritage Points

- S.34 - Historical
- S.35 - Iron Age
- S.35 - Stone Age
- S.35 - Historical / Archaeology
- S.35 - Rock Art
- S.36 - Burial Grounds and Graves

1:50 000 Topographical Maps

2328BB - Ka-Gobe
2328BD - Mahlwareng

DIGBY WELLS ENVIRONMENTAL
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Projection: Transverse Mercator
Datum: Hartebeesthoek 1994
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Ref #: amc.PLA2162.201304.147
Revision Number: 2
Date: 08/04/2013

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Kilometres
1:70 000

Plan 8

Waterberg PR Applications

Heritage Sites
LP30/5/1/1/2/10804PR

Legend

- LP30/5/1/1/2/10804PR
- Other Prospecting Areas

Heritage Points

- S.34 - Historical
- S.35 - Iron Age
- S.35 - Stone Age
- S.35 - Historical / Archaeology
- S.35 - Rock Art
- S.36 - Burial Grounds and Graves

1:50 000 Topographical Maps

2328BB - Ka-Gobe
2328BD - Mahlwareng
2329AA - Blouberg
2329AC - Bochum

DIGBY WELLS ENVIRONMENTAL

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Ref #: amc.PLA2162.201304.148
Revision Number: 2
Date: 08/04/2013

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Kilometres
1:120 000

Plan 9

Waterberg PR Applications

Heritage Sites

LP30/5/1/1/2/10805PR

Legend

- LP30/5/1/1/2/10805PR
- Other Prospecting Areas

Heritage Points

- S.34 - Historical
- S.35 - Iron Age
- S.35 - Stone Age
- S.35 - Historical / Archaeology
- S.35 - Rock Art
- S.36 - Burial Grounds and Graves

1:50 000 Topographical Maps

2328BB - Ka-Gobe
2328BD - Mahlwareng
2329AA - Blouberg
2329AC - Bochum

DIGBY WELLS ENVIRONMENTAL
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Projection: Transverse Mercator
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Revision Number: 2
Date: 08/04/2013

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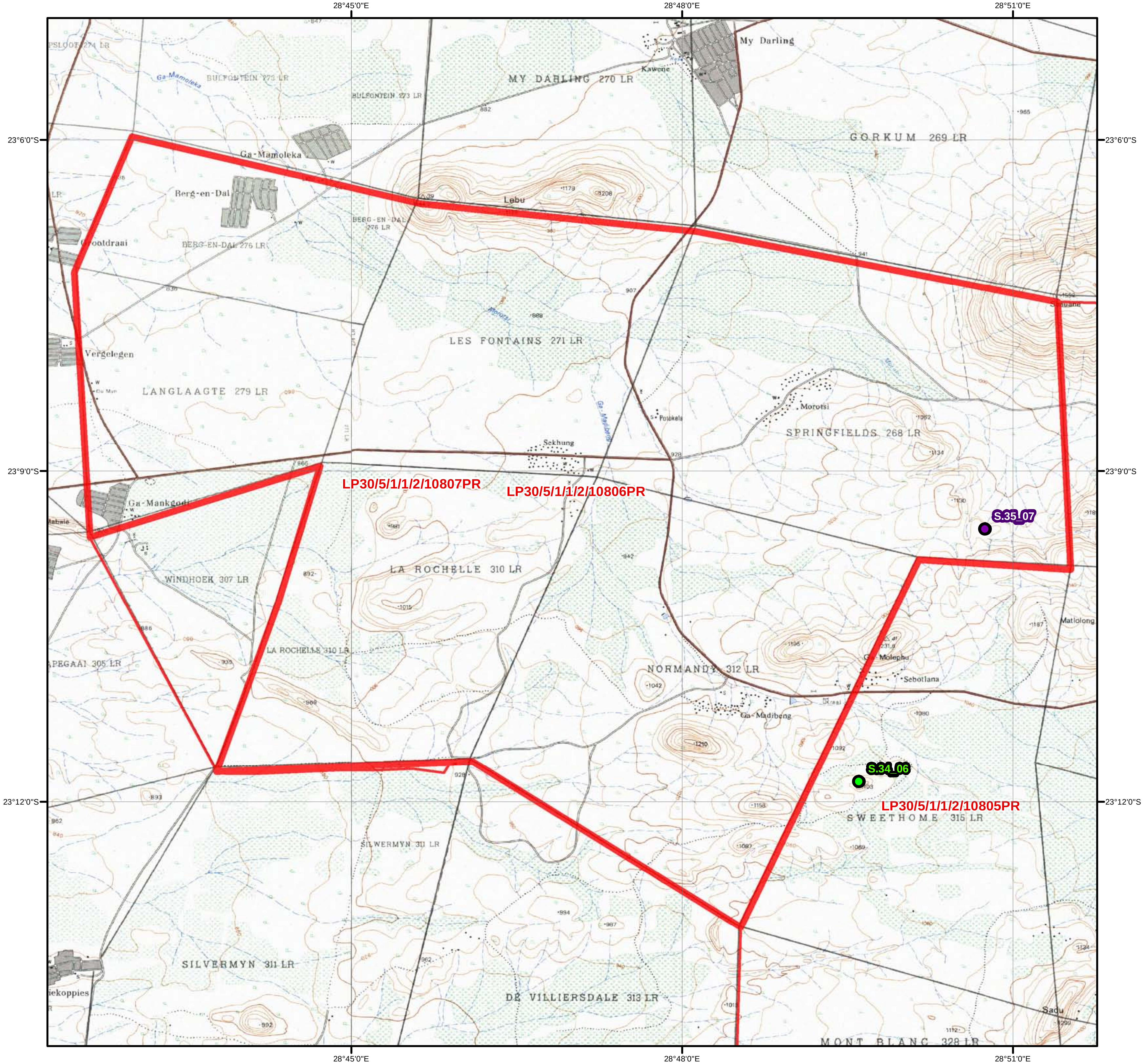

Plan 10

Waterberg PR Applications

Heritage Sites
LP30/5/1/1/2/10807PR

Legend

- LP30/5/1/1/2/10807PR
- Other Prospecting Areas

Heritage Points

- S.34 - Historical
- S.35 - Iron Age
- S.35 - Stone Age
- S.35 - Historical / Archaeology
- S.35 - Rock Art
- S.36 - Burial Grounds and Graves

1:50 000 Topographical Maps

2328BA - Letswatla
2328BB - Ka-Gobe

DIGBY WELLS ENVIRONMENTAL

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Projection: Transverse Mercator
Datum: Hartebeesthoek 1994
Central Meridian: 29°E

Ref #: amc.PLA2162.201304.150
Revision Number: 2
Date: 08/04/2013

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Kilometres
1:65 000

Plan 11

Waterberg PR Applications

Heritage Sites

LP30/5/1/1/2/10810PR

Legend

- LP30/5/1/1/2/10810PR
- Other Prospecting Areas

Heritage Points

- S.34 - Historical
- S.35 - Iron Age
- S.35 - Stone Age
- S.35 - Historical / Archaeology
- S.35 - Rock Art
- S.36 - Burial Grounds and Graves

1:50 000 Topographical Maps

2328BB - Ka-Gobe
2328BD - Mahlwareng

DIGBY WELLS ENVIRONMENTAL

www.digbywells.com

Projection: Transverse Mercator
Datum: Hartebeesthoek 1994
Central Meridian: 29°E

Ref #: amc.PLA2162.201304.151
Revision Number: 2
Date: 08/04/2013

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Kilometres
1:40 000

Plan 12

Waterberg PR Applications

Heritage Sites
LP30/5/1/1/2/10668PR & LP30/5/1/1/2/10808PR

LP30/5/1/1/2/10805PR

LP30/5/1/1/2/10667PR & LP30/5/1/1/2/10809PR

LP30/5/1/1/2/10668PR & LP30/5/1/1/2/10808PR

S.34_17
S.34_16
S.34_15
S.34_12
S.34_14
S.35_08
S.35_28
S.35_27

Legend

- LP30/5/1/1/2/10668PR & LP30/5/1/1/2/10808PR
- Other Prospecting Areas

Heritage Points

- S.34 - Historical
- S.35 - Iron Age
- S.35 - Stone Age
- S.35 - Historical / Archaeology
- S.35 - Rock Art
- S.36 - Burial Grounds and Graves

1:50 000 Topographical Maps

2328BC - Rebone
2328BD - Mahlwareng

DIGBY WELLS ENVIRONMENTAL
www.digbywells.com

Projection: Transverse Mercator
Datum: Hartebeesthoek 1994
Central Meridian: 29°E

Ref #: amc.PLA2162.201304.152
Revision Number: 2
Date: 08/04/2013

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Kilometres
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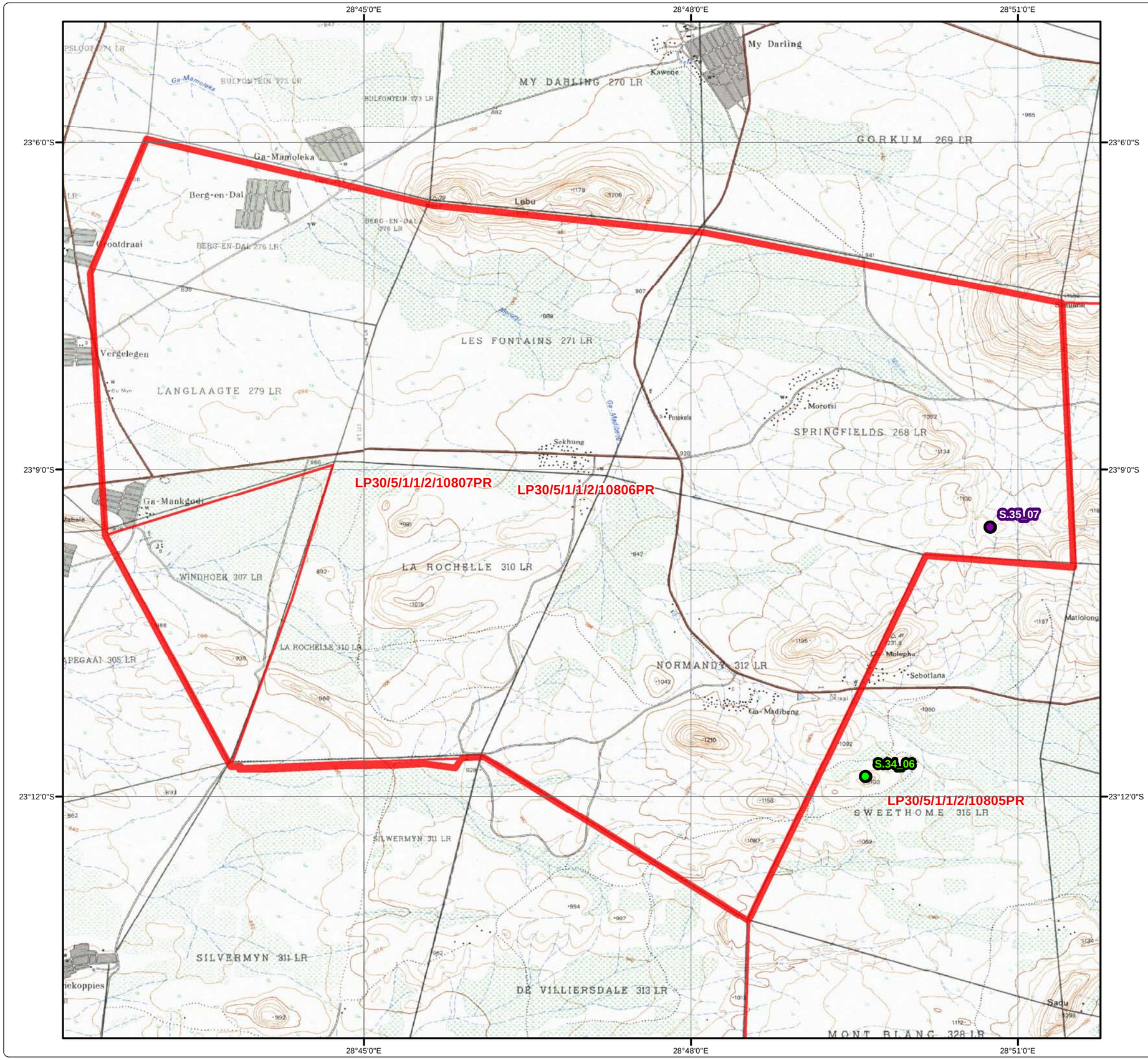
Plan 13

Waterberg PR Applications

Heritage Sites

LP30/5/1/1/2/10806PR



Legend

- LP30/5/1/1/2/10806PR
- Other Prospecting Areas

Heritage Points

- S.34 - Historical
- S.35 - Iron Age
- S.35 - Stone Age
- S.35 - Historical / Archaeology
- S.35 - Rock Art
- S.36 - Burial Grounds and Graves

1:50 000 Topographical Maps

2328BA - Letswatla
2328BB - Ka-Gobe

DIGBY WELLS ENVIRONMENTAL

www.digbywells.com

Projection: Transverse Mercator
Datum: Hartebeesthoek 1994
Central Meridian: 29°E

Ref #: amc.PLA2162.201304.153
Revision Number: 2
Date: 08/04/2013

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Kilometres
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