

Keagan Allan Senior Scientist



Profession: Senior GIS Specialist

Education: BSc Geographical Science – 2003
BSc (Hons) Geographical Science and Environmental Management – 2004
MSc Geographical Science (Cum Laude) – 2007

**Registrations/
Affiliations:** Registered Professional Natural Scientist (Pr.Sci.Nat),
South African Council for Natural Scientific Professions
(SACNASP), 400185/13
IAIA South Africa

Specialisation: Geographical Information Systems and Remote Sensing

Expertise:

Keagan has been involved in the following fields of expertise:

- Geographical Information Systems (GIS), more specifically data collection and manipulation; modelling of various spatial data for Visual Impact Assessments and Ground Water management and database management;
- GIS Development – using Visual Basic scripting to develop tools for use within the ESRI ArcMap environment;
- GIS in Environmental Management Frameworks – using Visual Basic in conjunction with GIS techniques to generate information for use in the GIS reporting in an EMF study;
- Remote Sensing (RS) more specifically the use of remotely sensed images in the classification of various land use types.

Employment Record:

Feb 2007 – August 2007 :	UKZN Pietermaritzburg,	Cartographic Technician
Feb 2008 – June 2008 :	Haley Sharpe Southern Africa,	Assistant Tourism Planner
July 2008 – Present :	SRK Consulting, Westville,	Environmental Scientist

Languages: English, Afrikaans

Publications: ALLAN, K., EMANUAL, P., and MORRIS, J.(2010) Poster Presentation: **Applications of GIS in EMF**, IAIAAsa Conference, Pretoria, August, 2010.

Awards: Won Best Poster at the 2010 IAIAAsa Conference – Poster **Applications of GIS in EMF**

Keagan Allan Senior Scientist

Key Experience:

- Name of Project:** Olifants Water Reserves
Client: SRK - JNB
Location: Limpopo Province
Project Description: Assessment of the water reserves in the Olifants River Catchment
Project duration/date: July 2008 – November 2009
Job Title and Duties: GIS Specialist and modelling of groundwater levels
- Name of Project:** ESKOM: Makhatini EIA
Client: ESKOM
Location: Makhatini, KZN
Project Description: The development of a new 22 kV power line through the Makhatini Flats area
Project duration/date: July 2008 - present
Job Title and Duties: GIS Specialist – mapping and modeling
- Name of Project:** Shell Wavecrest Environmental Impact Assessment (EIA)
Client: Shell South Africa
Location: Pinetown, KZN
Project Description: EIA for the refurbishment of the Shell Wavecrest Service Station, Sarnia, Pinetown
Project duration/date: July 2008 - present
Job Title and Duties: Environmental Scientist, Reporting, Public Participation, Field Work.
- Name of Project:** Petroline Visual Impact Assessment
Client: SRK – JNB
Location: Alkmaar, Mpumalanga
Project Description: The identification of potential visual impacts the development of a storage depot might have on the surrounding area
Project duration/date: August 2008 – October 2008
Job Title and Duties: GIS Specialist – mapping and modeling; reporting.
- Name of Project:** ESKOM – Pebblebed Reactor EIA and Risk Assessment
Client: SRK – CPT
Location: Western Cape
Project Description: Various EIAs and Risk Assessments for the placement of the proposed Pebble bed Nuclear Reactors.
Project duration/date: August 2008 – November 2008
Job Title and Duties: GIS Specialist – mapping of the various factors for the project
- Name of Project:** Riverhorse as-built floodlines
Client: eThekweni Municipality
Location: Durban North, KZN
Project Description: Flood modeling along a section of the Riverhorse Valley Industrial Park.
Project duration/date: August 2008 – November 2008
Job Title and Duties: GIS Specialist – mapping and modeling of the terrain
- Name of Project:** Styldrift Mine – Visual Impact Assessment
Client: SRK – JNB
Location: Rustenburg, North West Province
Project Description: Undertaking of a visual impact assessment for the Styldrift Mining Complex
Project duration/date: November 2008 – January 2009
Job Title and Duties: GIS Specialist – mapping and modeling; reporting.

Name of Project: Basic Assessment for the Palmiet River Attenuation
 Client: eThekweni Municipality
 Location: Pinetown, KZN
 Project Description: Undertaking a Basic Assessment for the proposed flood attenuation of the Palmiet River Catchment, Pinetown
 Project duration/date: October 2008 – February 2009
 Job Title and Duties: Environmental Scientist, Reporting, Public Participation, Field Work.

Name of Project: Dwaalkop VIA
 Client: Messina Platinum Mines Ltd.
 Location: Lebowakgomo, Limpopo
 Project Description: Visual Impact Assessment for the Dwaalkop Mining Operation, Limpopo
 Project duration/date: February 2009 – February 2009
 Job Title and Duties: GIS Specialist – mapping and modeling; reporting.

Name of Project: Mshwati EMF
 Client: INR
 Location: Mshwati Municipality
 Project Description: Undertaking floodline assessments and service assessment for the Mshwati EMF
 Project duration/date: July 2009 – November 2009
 Job Title and Duties: GIS Specialist – mapping and modeling; reporting.

Name of Project: City of Cape Town – Stormwater Asset Project
 Client: City of Cape Town
 Location: Cape Town
 Project Description: Assessment of stormwater assets in the City of Cape Town Municipality
 Project duration/date: August 2009 – September 2013
 Job Title and Duties: GIS Specialist – mapping and modeling; reporting.

Name of Project: Vlakfontein Mine VIA
 Client: SRK – JNB
 Location: Ogies, Mpumalanga
 Project Description: Visual Impact Assessment for the proposed opencast coal mining operations on the Vlakfontein Farm, Ogies, Mpumalanga
 Project duration/date: October 2009 – November 2009
 Job Title and Duties: GIS Specialist – mapping and modeling; reporting.

Name of Project: Hilton Housing Estate VIA
 Client: Environmental Planning and Design
 Location: Hilton, KZN
 Project Description: Visual Impact Assessment for the proposed housing estate on the Hilton College School grounds
 Project duration/date: November 2009 – January 2010
 Job Title and Duties: GIS Specialist – mapping and modeling; reporting.

Name of Project: Amajuba District Municipality Disaster Management Plan
 Client: Amajuba District Municipality
 Location: Amajuba Municipality
 Project Description: Disaster management plan for the district
 Project duration/date: January 2010 – January 2011
 Job Title and Duties: Data collection

Name of Project: Msunduzi EMF
 Client: Msunduzi Municipality
 Location: Pietermaritzburg, KZN
 Project Description: Development of an EMF and SEA for the management of development in the Msunduzi Municipality
 Project Duration/date: July 2008 – May 2010
 Job Title and Duties: GIS Analyst, Spatial Decision Support Tool Programmer

Name of Project: Kriel EMPR Addition Reserves VIA
 Client: SRK- JNB
 Location: Kriel Mpumalanga
 Project Description: Visual Impact Assessment for the proposed opencast coal mining operations near the Kendal Power Station and Kriel, Mpumalanga
 Project duration/date: January 2010 – present
 Job Title and Duties: GIS Specialist – mapping and modeling; reporting.

Name of Project: MONDI – Phase 1 EIA
 Client: Mondi Richards Bay Mill
 Location: Richards Bay
 Project Description: EIA for a proposed expansion of the Mondi Richards Bay Mill
 Project duration/date: April 2010 – December 2010
 Job Title and Duties: GIS Specialist and Environmental Assessment Practitioner

Name of Project: EMF for the Msukaligwa and Albert Luthuli Municipalities (includes Mpumalanga Lake District region)
 Client: Mpumalanga Department of Agriculture and Land Administration
 Location: Mpumalanga Province
 Project Description: Development of an EMF tool for decision makers in the local municipalities
 Project Duration/date: August 2010
 Job Title and Duties: Spatial Decision Support Tool Programmer

Name of Project: Chevron – Water Quality Assessments
 Client: Chevron
 Location: KZN
 Project Description: Various mapping for a number of Chevron sites around KwaZulu-Natal
 Project Duration/date: January 2010 - present
 Job Title and Duties: Cartographer

Name of Project: Cape Winelands EMF
 Client: Cape Winelands District Municipality
 Location: Western Cape Province
 Project Description: Development of an EMF for the district municipality, as well as a GIS tool for assisting decision makers
 Project Duration/date: December 2010 – February 2012
 Job Title and Duties: GIS Analyst, Spatial Decision Support Tool Programmer

Name of Project: New Clydesdale Coal - VIA
 Client: Exxaro
 Location: Mpumalanga Province
 Project Description: Visual Impact Assessment for the consolidation of the existing EMPr and a proposed expansion to mining activities at the New Clydesdale Mine
 Project Duration/date: January 2011 – February 2012
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner

Name of Project: Venetia Mine EMPr Consolidation and VIA
 Client: De Beers
 Location: Limpopo Province
 Project Description: Visual Impact Assessment for the consolidation of the existing EMPr and a proposed expansion to mining activities at the Venetia Mine
 Project Duration/date: February 2011 – June 2011
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner

Name of Project: SATO Solar Power Plant VIA
 Client: SATO Holdings
 Location: Black Mountain – Northern Cape
 Project Description: Visual Impact Assessment for a proposed solar power plant, located near Black Mountain in the Northern Cape
 Project Duration/date: June 2011 – February 2012
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner

Name of Project: Dobbin Solar Power Plant VIA
 Client: Afrom Energy (Pty) Ltd.
 Location: Eastern Cape
 Project Description: Visual Impact Assessment for the proposed solar power generation facility near Dobbin, Eastern Cape
 Project Duration/date: February 2012 – October 2012
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner

Name of Project: Brakpoort Solar Power Plant VIA
 Client: Afrom Energy (Pty) Ltd.
 Location: Northern Cape
 Project Description: Visual Impact Assessment for the proposed solar power generation facility near Victoria East, Northern Cape
 Project Duration/date: February 2012 – October 2012
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner

Name of Project: Visual Impact Assessment for the Proposed Candover-Mbazwana-Gezisa 132kV Powerlines and 132/22kV 20MVA Mbazwana and Gezisa Substations, Northern KwaZulu- Natal
 Client: Eskom Holdings SOC Ltd.
 Location: KwaZulu-Natal
 Project Description: Visual Impact Assessment of the proposed new line
 Project Duration/date: May 2011 – November 2012
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner

Name of Project: Bush clearing specification compiled for the Nondabuya-Ndumo 132kV powerline and the Ndumo 132/22kV substation
 Client: Eskom Holdings SOC Ltd.
 Location: KwaZulu-Natal
 Project Description: Using remote sensing to identify and cost for bush clearing contractors to clear vegetation from the proposed powerline route
 Project Duration/date: February 2012 – May 2012
 Job Title and Duties: GIS Analyst and Remote Sensing Specialist

Name of Project: Rinaldo East Industrial Site Visual Impact Assessment
 Client: SiVest (Pty) Ltd.
 Location: KwaZulu-Natal
 Project Description: Visual Impact Assessment for the proposed new industrial site adjacent the N2 freeway in eThekweni
 Project Duration/date: November 2012 – July 2014
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner

- Name of Project: Visual Impact and Shadow Analysis of the Proposed Billboard on top of Nedbank House, Durban Central Business District
 Client: Primedia (Pty) Ltd
 Location: KwaZulu-Natal
 Project Description: Visual Impact Assessment and shadow analysis of a new billboard on the Nedbank House in the CBD of Durban
 Project Duration/date: December 2012
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner
- Name of Project: Visual Impact Assessment for a proposed 500 MW Solar Power Generation Facility
 Client: Savannah Environmental
 Location: Northern Cape
 Project Description: Visual Impact Assessment for a proposed solar generation facility, Northern Cape South Africa
 Project Duration/date: February 2013
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner
- Name of Project: Visual Impact Assessment for Phase 1 and 2 projects of the Styldrift Mining Complex
 Client: LonMin
 Location: North West
 Project Description: Visual Impact Assessment for proposed new ventilation shafts and waste rock dumps at the Styldrift Mining Complex, North West Province
 Project Duration/date: March 2013 – November 2013
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner
- Name of Project: Visual Impact for the proposed new mining complex at the Pandora Mining Complex
 Client: AVD Environmental (LonMin)
 Location: North West
 Project Description: Visual Impact Assessment for a proposed new mining complex and powerline at the Pandora Mine, north West Province
 Project Duration/date: July 2013 – September 2013
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner
- Name of Project: Visual Impact of Proposed Billboards along main roads in Port Elizabeth
 Client: Primedia (Pty) Ltd
 Location: Eastern Cape
 Project Description: Visual Impact of Proposed Billboards along main roads in Port Elizabeth
 Project Duration/date: December 2013
 Job Title and Duties: GIS Analyst and Visual Assessment Practitioner
- Name of Project: Groundwater Resource Directed Measures: Mvoti to Umzimkulu Water Management Area
 Client: DWAF
 Location: KwaZulu-Natal Province
 Project Description: Assessment of the groundwater water reserves in the Mvoti to Umzimkulu Water Management Area
 Project duration/date: July 2012 – July 2014
 Job Title and Duties: GIS Specialist and modelling of groundwater levels

Name of Project: Emadlangeni Rural Water Supply Desktop Groundwater Assessment
Client: Amajuba Municipality
Location: KwaZulu-Natal Province
Project Description: Assessment of borehole distribution and borehole conditions for the supply of water in the Emadlangeni Municipality, KwaZulu-Natal
Project duration/date: August 2013 – present
Job Title and Duties: GIS Specialist and analyst

Curriculum Vitae of Jessica Angel

Personal Details

- **Name:** Jessica
- **Surname:** Angel
- **Identity Number:** 8312250052082
- **Date of Birth:** 25-12-1983
- **Citizenship:** South African
- **Gender:** Female
- **Marital Status:** Single
- **Languages Spoken:** English and Afrikaans

Education History

- **2002:** Matriculated from Northcliff High School with the following subjects: English, Afrikaans, Mathematics, Science, Biology and Art.
- **2005:** Completed BA at University of the Witwatersrand with Geography and Archaeology Majors.
- **2006:** Completed BSc Hons (Geography) at the University of the Witwatersrand with the following subjects: Environmental Management, Advanced Geographic Information Systems (GIS), Paleogeomorphology and Globalisation and Agro Food Restructuring.
- **2009 – 2013:** M.Sc Archaeology and Geography, with thesis title: *Mpumalanga Late Iron Age: Incorporating Geographic Information Systems (GIS) and Archaeological Data to Better Understand Spatial and Temporal Distribution of Past Societies*. (Graduated March 2014).

Employment History

Part time employment as a student:

- **2011:** Research Assistant: GIS work for Prof Karim Sadr. Duties include: Google Earth survey work and digitising.
- **2012-2013:** Basic internship at PGS. Duties include gaining familiarity with gathering relevant background data, field surveys, exhumations and report writing.
- **2013:** Heritage work at NGT. Background research, report writing and ground surveys.
- **2015 –** Archaeologist – PGS Heritage

Experience in the field of archaeology:

September 2012: First Phase Heritage Assessment. Belfast. Marko Hutten and Jennifer Kitto
August 2012: First Phase Heritage Assessment. Delareyville. Wouter Fourie. Stone Age survey
August 2012: Heritage Assessment. MP. Chris van Vuuren and Jennifer Kitto. Ndebele initiation site.
February 2013: Map survey. PTA East. Polka Birkholtz. Mapping Iron Age site.
February 2013: Grave Exhumation. Chlorkop. Marko Hutten
March 2013: First Phase Heritage Assessment. MP. Jennifer Kitto.
July 2013: Grave Exhumation. Mafikeng. Prof Maryna Steyn and Coen Nienaber.
November 2013: First Phase Heritage Assessment. Port Nolloth. Luke Verbant, Ursula Verbant.
January 2015 – June 2015: 10 Heritage Impact assessments and background research for PGS Heritage

Computer Literacy and Experience

- GIS ArcGIS, QGIS, GRASS, Microsoft Office

Date of Birth: 11 September 1980
Designation: Manager: Innovation & Sustainable Development
Profession: Senior Development Economist
Specialisation: Sustainable Development Specialist
Years within Firm: 11 Years
Nationality: Russian/SA Citizen
Years of Experience: 11 Years
HDI Status: White Female



Education:

University of Pretoria - 2011	MSc (Technology Management)
University of Pretoria - 2007	BScHons (Technology Management)
Parkland College, USA - 2004	Computer Integrated Accounting
Parkland College, USA - 2004	Independent Business
Parkland College, USA - 2003	Intermediate Accounting
Parkland College, USA - 2003	Records Management
Parkland College, USA - 2003	Financial Accounting
Parkland College, USA - 2003	Managerial Accounting
Nizhny Novgorod University, Russia - 2002	BComHons (Economics)

Professional Membership:

SAPOA - Urban-Econ Development Economists (Pty) Ltd

Language Proficiency:	Reading	Writing	Speaking
English	Excellent	Excellent	Excellent
Russian	Excellent	Excellent	Excellent

Key Qualification:

Elena Broughton completed her BComHons in Economics in Russia, at Nizhny Novgorod State University in 2002 specialising in regional economics. At the same time, she completed an additional degree as Translator/Interpreter in Professional Orientated Communication. After completion of her Honours degree in Economics, Elena moved to the USA and stayed there for 1.5 years. During her stay in the USA, she completed a number of Accounting and Business courses at Parkland College, Illinois. In 2007, she obtained her BScHons in Technology Management (Cum Laude) at the University of Pretoria and later received her MSc in Technology Management (2011) from the same university.

Elena Broughton is a senior professional at Urban-Econ and a manager of the Innovation & Sustainable Development Unit. She has an extensive knowledge in various fields of economic development, including policy evaluation, feasibility studies, impact assessments, investment strategy formulation, strategic decision analysis, and monitoring and evaluation. She is experienced in developing input-output and SAM-based models, as well as development and application of other econometric techniques. Elena has a proven track record of managing complex multidisciplinary projects and a team of sub-consultants. In the past few years she has managed and completed a number of projects on behalf of the Department of Trade and Industry, the Department of Science and Technology, and the Department of Energy.

Employment History:

2004 - current	Urban-Econ: Development Economist
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Relevant experience:

- Thabametsi IPP Coal-fired Power Station near Lephalale Socio-Economic Impact Assessments
- Thabametsi Coal Mine Sustainable Development Investigation and Economic Impact Assessment
- Colenso Coal Mine and Coal-Fired Power Station Socio-Economic Impact Assessment. Kwazulu-Natal
- Waterberg Coal-Powered Power Stations Economic Impact Study, Limpopo
- Mafube Coal Mine Expansion Sustainable Development Investigation and Economic Impact Assessment
- Sishen Mine Waste Dumps Macro-Economic and Economic Impact Assessment
- Eskom Coal 1 and Coal 2 Economic Impact Assessments, Mpumalanga
- Eskom: Ariadne-Eros Transmission Line Economic Impact Assessment
- Eskom CSP Macro-Economic Impact Assessment
- Eskom Ingula Pumped Storage Scheme Regional Economic Impact Assessment
- Eskom Wind Energy Facility 1 (WEF1) Macroeconomic and Regional Impact Assessment
- Eskom Sere Wind (WEF1) Macro-Economic Impact Assessment
- Eskom Kendal And Lethaba EIA: Economic Impact Assessments
- BRMO Gloria Mine Sinter Plant and Mine Expansion Economic Impact Assessment
- Volsput Mine Socio-Economic Impact Assessment
- Wag'nbiokiespan PV Solar Energy Facility near Boshof, the Free State Province (75 MW PV solar facility)
- Braamhoek Pumped Storage Scheme Impact Analysis
- Go-to-Market Strategy for a PV/Panel Manufacturer
- SunCorp Socio-Economic and Enterprise Development Plan Formulation
- An Opportunity Cost Assessment for the proposed Labonte 5 Mining Project
- Saldanha Bay Separation Plant Economic Impact Assessment
- Zandkopsdrift Rare Earth Elements (REE) Project Economic Impact Assessment
- Balmoral Economic Impact Assessment
- Proposed Exxaro IPP Coal-Powered Power Station - Lephalale Scoping Inputs
- Mafube Nooitgedacht and Wildfontein EIA/EMP Sustainable Development Investigation Study
- De Hoop Dam Economic Impact Monitoring Framework
- N3 Highway Economic Impact Assessment
- The Mandela Bay Precinct Economic Impact Assessment
- Harrismith Logistics Hub Impact Assessment
- Megamall Economic Impact Assessment
- Coega Ridge Economic and Social Impact Assessments
- Amanzi Economic & Social Impact Assessment
- Socio-Economic Impact Assessment of the Proposed New Eskom Power Stations in the Witbank Area and Northern Free State
- Arriesfontein Solar Energy Park near Danielskuil in the Northern Cape (100 MW CSP-Tower facility and 225 MW PV solar facility)
- Humansrus Solar Energy Facility near Postmasburg in the Northern Cape (100 MW CSP-Tower facility)
- Rooipunt Solar Energy Park near Upington in the Northern Cape (100 MW CSP-Tower facility and 215 MW PV solar facility)
- Farm 198 PV Solar Energy Facility north of Kimberley in the Northern Cape (210 MW PV solar facility)
- Wag'nbiokiespan PV Solar Energy Facility near Boshof, the Free State Province (75 MW PV solar facility)

Countries of Work Experience:

- South Africa
- Russia
- Zambia

References:

- Dr. JL Oberholzer Email: judex@urban-econ.com Cell Phone: +27 (0) 82 770 8770

Contact Details:

- Elena Broughton Email: elena@urban-econ.com Cell Phone: +27 (0) 82 4632325

CURRICULUM VITAE

Tarryn Curtis

Name Tarryn Curtis

Profession Environmental Consultant

Name of Firm SiVEST SA (Pty) Ltd

Present Appointment Divisional Manager

Years with Firm 6 Years

Date of Birth 02 June 1984

Nationality South African

ID No. 8406020178084



Education

Matric Exemption (Natal Education Department) Amanzimtoti High School (1997-2001)

Professional Qualifications

Bachelor of Science (Geographical Science) : University of KwaZulu-Natal, 2005
 Bachelor of Science (Honours) Geographical Science (Geography and Environmental Management):
 University of KwaZulu-Natal, 2006

Membership to Professional Societies

International Association for Impact Assessment South Africa (IAIASa)

Employment Record

May 2016 – current	SiVEST SA (PTY) LTD – Environmental Division: Divisional Manager
Jan 2011 – April 2015	SiVEST SA (PTY) LTD – Environmental Division: Environmental Consultant
July 2008 – Dec 2010	Arcus GIBB – Environmental Scientist
Jan 2007 - July 2008	Kerry Seppings Environmental Management Specialists – Environmental Scientist

Language Proficiency

LANGUAGE	SPEAK	READ	WRITE
English	Fluent	Fluent	Fluent
Afrikaans	Good	Good	Good

Key Experience

Tarryn joined SiVEST in January 2011 in her capacity as Environmental Consultant.

Tarryn has completed a Bachelor of Science Degree with a Geography Major (University of Natal, PMB), as well as a Bachelor of Science (Honours) in Geography (University of Natal, PMB).

Tarryn has been involved in consulting since 2007, which included scoping reports, environmental management plans, integrated management plans, basic assessment reports, environmental impact reports and auditing.

Field of specialisation in Environmental Auditing, Environmental Project Management, Environmental Planning.

Projects Experience

January 2011 – date (SiVEST)

BASIC ASSESSMENTS

- South Coast Phase 2B Pipeline
- D1562 Road Upgrade
- Kokstad Bulk Water Supply Pipeline
- Mthandeni Irrigation Scheme
- Oliphantskop-Ladysmith (Driefontein) Water Supply Scheme (Phase 1 and 2)
- Bulwer Dam Water Supply Scheme
- Paulpietersburg Waste Water Treatment Facility
- Driefontein Ladysmith Pipeline Project
- Brooklyn & Mapstone (Baynesfield) Dams
- Usolo Road House Development
- Waterval Prison Upgrades Project
- Lower Tugela Bulk Water Supply Scheme (Off Take 10)
- Lower Tugela Bulk Water Supply Scheme (Off Take 11)
- Bulk water Pipelines in Middeldrift
- Eskom Koeberg Dassenberg 132kv Powerline
- Brookdale Housing Development
- Msunduzi Organic Waste Disposal Site
- Zimbali Lake Estate Basic Assessment
- Cornubia Petrol Filling Station
- Shemula Water Pipeline Phases 2-6
- South Coast Water Pipeline
- Wosiyane Bulk Water Pipeline
- Raisethorpe Canal Upgrade
- Sumitomo Rubber Plant

ENVIRONMENTAL IMPACT ASSESSMENTS

- Compensation Organic Waste Site
- La Mercy Integrated Human Settlements Development
- Dube TradePort "Agrizone 2" Development
- Wembezi Mixed Use Development
- Newcastle Rural Housing Development
- Department of Public Works Veterinary Quarantine Station, Canelands, Durban
- Smelter Underflow Dam at Exxaro KZN Sands
- Middel Fontein Medium Density Housing Development, Kokstad
- Darvill Constructed Wetland EIA

FEASIBILITY STUDIES

- Ixopo CRU Housing Development
- Kokstad CRU Housing Development

WATER USE LICENSES

- Waterval Prison
- D1562 Road Upgrade
- Zimbali Lakes Golf Course
- Bruynshill Wartburg Pipeline
- Wosiyane Pipeline
- Shemula Pipeline
- D1562 Road Upgrade
- La Mercy Beach Development
- Mhlabatshane Pipeline
- South Coast Pipeline
- Umshwathi Pipeline

AMENDMENT APPLICATIONS

- Umshwathi Pipeline Amendment
- RHDHV D9 Jozini Roads
- Umgeni Water Umshwathi Pipeline
- Tongaat Hulett Developments Zimbali Lakes Estate Development
- Izinga Phase 3 Amendment

ENVIRONMENTAL MANAGEMENT FRAMEWORKS

- Edendale EMF

ENVIRONMENTAL AUDITING / ENVIRONMENTAL CONTROL OFFICER (ECO)

- Driefontein Phase 1 Water Supply Scheme
- Bulwer Pipeline & Weir Construction
- Ladysmith Shopping Mall Development
- Dube TradePort Corporation Close Out Audits at DTP facilities and Support Zone Infrastructure and Civil Works
- Umhlumayo Phase 4 "Fitty Park" Community Water Supply Scheme
- Nsuze Irrigation Scheme
- Bulwer Dam Audits
- Eskom Candover ECO

July 2008 - Jan 2011 (Arcus GIBB)

- Sani Pass Road (P318) Phase 2 Upgrade EIA and EMP
- Richards Bay Minerals (RBM) Electricity Co-generation Facility EIA and mining Environmental Management Programme (EMPR) amendment.
- Richards Bay Intersection Upgrade for molten aluminium transport EIA and EMP.
- Richards Bay Minerals (RBM) Coal Dryer EIA.
- Environmental Auditor for BHP Billiton Road Upgrade.

Jan 2007 - July 2008 (Kerry Seppings Environmental Management Specialists)

- Ifafa Residential Development EIA and EMP
- Sasol Gas Pipelines EIAs and EMPs for numerous pipelines
- Langefontein Residential Development EIA.

CURRICULUM VITAE

Tarryn Curtis

- Durban petrol filling stations EIA for two proposed petrol filling stations in Durban.
- Margate Pier investigation for alternative rehabilitation methods EIA.
- Plascon (Mobeni) solvent recovery tank EIA.
- Eshowe and Empangeni re-grading of the KZ 282 and KZ 284 roads EIA.
- Amanzimtoti petrol filling station EIA.
- Umzinyathi taxi rank EIA.
- Glenwood substation upgrade EIA.
- Midlands substation and associated feeder lines EIA.
- Auditor of ISO 1400i systems for Plascon Mobeni, Luiperdsvlei and Epping, Revertex and Divfood. 2007 -2008.
- Environmental Control Officer for Clifton Hill residential development,
- Arbour Town, Business Park and Galleria Shopping Mall,
- Various Sasol Gas Pipelines.

COLIN DALTON - Director

DATE OF BIRTH : 1961

QUALIFICATIONS AND MEMBERSHIP OF INSTITUTIONS.

National Higher Diploma - Civil Engineering
Affiliate member of South African Institute of Engineering Geologists.

POST GRADUATE CAREER.

1981 - 1982 Geological Technician - Darling & Hodgson.
1982 - 1988 Geological Technician - Soils Engineering, Jhb.
1988 - 1990 Geological Technician - Geopractica c.c.
1990 - 2004 Member - Geopractica c.c.
2004 - Present Director Geopractica (Pty) Ltd

PUBLICATIONS

Co-author of a paper entitled *“Steel fibre reinforced shotcrete as a secondary support medium applied by the dense stream method by hand spraying in large excavations sub 2400m”*

TYPICAL PROJECTS.

- Overburden studies and material reserves for construction material quarries - East Rand Dolomite, Clayville, Mazista Slate, Blue Rock (Cape), Olive Hill (O.F.S.), Ready Mix (Natal). Location of new material sources, using drilling and geophysics.
- Foundation Investigations, for residential townships in P.W.V. area. Water bore hole location (geophysical).
- Borrow pit location and material reserves for proposed new gravel and surfaced roads, Potgietersrus.
- Supervision of the field work for the geotechnical investigation for 2500 ha, commercial, residential and industrial township, Francistown, Botswana
- Quality control - steel fibre shaft lining and pillar extraction with backfill Western Deep Levels SVS.
- Drilling and grouting - cable anchors for 150m long cable stayed pipe bridge, Potgietersrust Platinum Mines.
- Drilling and installation of piezometers and horizontal drains in existing slimes dam, CMI, Lydenburg.
- Monitoring and inspection of cast in situ displacement piles (360 and 430mm diameter) for Filter Press at Koorfontein Gold Mine
- Initial field work for the geotechnical investigation for new platinum mining venture in Ngezi, Zimbabwe
- Contracts manager for the installation of 80m of 75mm thick, steel fibre reinforced concrete, shaft lining. Impala Platinum Mine 1A ventilation shaft
- Project manager for lateral support, gabion construction, rock anchor installation, slope protection, installation of a dynamic rockfall barrier for the rehabilitation of Livingstone hydro-electrical power station. Zambezi River. Zambia

Name	Veronique Mary Evans
Profession	Environmentalist
Name of Firm	SiVEST SA (Pty) Ltd
Present Appointment	Graduate Environmental Consultant
Years with Firm	Joined August 2012
Date of Birth	9 November 1990
ID Number	9011091040087
Nationality	South African



Education

St Peters College, Sunninghill, Johannesburg, South Africa Matriculated 2008

Professional Qualifications

MSc - Environmental Science in Conservation and Ecology, University of the Witwatersrand (Current)
 Research Proposal: Assessing the link between rural food security and rangeland woody biomass in Limpopo.

BSc (Hons) - Environmental Science in Conservation and Ecology, University of the Witwatersrand,
 (Completion date: November 2013).

Research Proposal: Selective herbivore use of post-fire grass ash in a Highveld grassland.

BSc - Environmental Conservation and Ecology, Zoology and Geography, University of the Witwatersrand, (Completion date: November 2012)

Academic Awards

National Research Foundation Honours: Innovation Scholarship – 2013

Organisation for Tropical Studies (OTS) – Fall Semester Scholarship – 2013

Global Change and Sustainability Research Institute: Innovation Scholarship – 2014/2015

Employment Record

Aug 2012 - April 2015

SiVEST SA (Pty) Ltd - Graduate Environmental Consultant

June 2011 - Aug 2012

Arcus GIBB – Junior Environmental Scientist, Internship

Language Proficiency

LANGUAGE	SPEAK	READ	WRITE
English	Fluent	Fluent	Fluent
Afrikaans	Fair	Good	Fair

Key Experience

Veronique joined SiVEST in August 2012 and was based in the Johannesburg office in the capacity of a Graduate Environmental Consultant.

Veronique was involved extensively in the public participation aspect on numerous projects including Environmental Impact Assessments, Water Use License applications and amendment impact assessments. She has been involved in the compilation of Environmental Impact Assessment (EIA) and Basic Assessments (BA) and Environmental Management Plans primarily related to energy generation and electrical distribution projects. She also assists and undertakes visual impact assessments, by making use of ArcGIS technology and undertaking field surveys.

Previously worked for Arcus GIBB (Pty) Ltd and assisted with the compilation of Basic Assessments (BA) and Environmental Impact Assessments (EIA). She also performed Environmental Control officer work and assisted in Public Participation meetings and the overall public participation process.

She is proficient in Microsoft Office, Microsoft Excel, Microsoft PowerPoint, ArcGIS, Maximiser and Adobe.

Through her time at SiVEST, Veronique has acquired the following skills:

- Strong proposal and report writing skills;
- Report compilation skills for Environmental Impact Assessments and Basic Assessments;
- Report compilation skills for Environmental Management Plans/Programmes;
- Strong public participation skills and the use of Maximiser; and
- Compilation and conducting Visual Impact Assessments.

Key experience includes:

- Environmental Impact Assessment (EIA) of small, medium and large-scale infrastructure projects,
- Basic Assessment (BA), of small, medium and large-scale infrastructure projects,
- Environmental Management Plans (EMPr), of small, medium and large-scale infrastructure projects,
- Public Participation Process,
- Proposal and tender compilation,
- Various site inspections, and
- Visual Impact Assessments.

Project Experience

SIVEST GRADUATE ENVIRONMENTAL CONSULTANT AUG 2012 TO MAY 2015

ENVIRONMENTAL MANAGEMENT AND IMPACT ASSESSMENT

Responsible for task management to ensure that the EIA/BA process was implemented correctly, on schedule, the EIA/BA process includes applications, baseline assessments, EIA/BA reports and Environmental Management Plans (EMPr).

- Basic Assessment (BA) and Environmental Management Plan (EMPr) for the Ermelo-Richards Bay Coal Line Upgrade Project: Proposed Development of the Duma 400kv Main Transmission Station and Associated 88kv and 400kv turn in Power Lines Near Ulundi, Kwazulu-Natal Province (2013/2015) SiVEST - Graduate Environmental Consultant;
- Basic Assessment (BA) and Environmental management Plan (EMPr) for the Ermelo-Richards Bay Coal Line Upgrade Project: Proposed Development of the New Nzalo (Mqwabe) 400/88 Kv, 160mva Substation With Associated 88kv And 400kv Turn-In Power Lines East of Vryheid, Kwazulu-Natal, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
- Basic Assessment (BA) and Environmental management Plan (EMPr) for the Ermelo-Richards Bay Coal Line Upgrade Project: Proposed Development of the Vryheid Traction Station and the Associated Eskom Turn In Power Lines In Kwazulu- Natal, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
- Basic Assessment (BA) and Environmental management Plan (EMPr) for the Ermelo-Richards Bay Coal Line Upgrade Project: Proposed Development of the Sheepmoor Traction Station and Two New Associated 88/25kv Turn In Lines with 20mva Transformer Bays, Mpumalanga Province, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
- Basic Assessment (BA) and Environmental management Plan (EMPr) for the Ermelo-Richards Bay Coal Line Upgrade Project: Proposed Rebuild of the 88kv Power Line from Uitkoms Substation to Antra T-Off, Approximately 3.5km in length, Mpumalanga Province, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;

- Basic Assessment (BA) and Environmental management Plan (EMPr) for the Ermelo-Richards Bay Coal Line Upgrade Project: Proposed Upgrade of the 24 Km Twin Wolf Power Lines from Normandie To Hlungwana Substation in Mpumalanga and Kwazulu-Natal, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
- Basic Assessment (BA) and Environmental management Plan (EMPr) for the Ermelo-Richards Bay Coal Line Upgrade Project: Proposed Upgrade of 11.27km of the Umfolozi to Eqwasha Twin Wolf Eskom Power Line and 0.5km of the Umfolozi to Dubula Twin Wolf Eskom Power Line in Kwazulu-Natal, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
- Basic Assessment (BA) and Environmental management Plan (EMPr) for the proposed construction of a 132kv Power Line, Substation and the extension of Homestead Substation associated with the Concentrating Photovoltaic (CPV) / Photovoltaic (Pv) Plant (PV 3) on the Farm Droogfontein in Kimberley, Northern Cape Province (2012/2013) SiVEST - Graduate Environmental Consultant;
- Basic Assessment (BA) and Environmental Management Programme (EMPr) for the Proposed Mookodi Integration Phase 2 132kv Power Lines and Ganyesa Substation Near Vryburg, North West Province (2012) SiVEST - Graduate Environmental Consultant;
- Basic Assessment (BA) for the upgrade of the Silver Lakes outfall sewer pipeline (2012) SiVEST - Graduate Environmental Consultant;
- Basic Assessment (BA) and Environmental Management Programme (EMPr) for the Proposed construction of the Sheepmoor traction substation with two 20MVA transformer bays and a new associated 88kV turn-in power line, Mpumalanga Province (2013) SiVEST - Graduate Environmental Consultant;
- Basic Assessment (BA) and Environmental Management Programme (EMPr) for the Proposed rebuild of the 88kV power line from Uitkoms substation to Antra T-off, Mpumalanga Province (2013) SiVEST - Graduate Environmental Consultant;
- EIA for the proposed 25 MW Community Wind Farm in St Helena Bay, Western Cape Province. The EIA includes the scoping process and detailed environmental impact assessment. The project includes detailed specialist studies such as social, visual and biophysical as well as a full public participation process. Junior Environmental Scientist. Just Energy, 2011 -2012, closed.
- EIA for the proposed 300 MW Caledon Wind Farm, Western Cape Province. The EIA includes the scoping process and detailed environmental impact assessment. The project includes detailed specialist studies such as social, visual and biophysical as well as a full public participation process. Junior Environmental Scientist, GIBB. Caledon Wind, 2011 – 2012, closed.
- EIA and EMP for the proposed South African Nuclear Energy Corporation (Necsa) Dedicated Isotope Production Reactor (DIPR) at the Pelindaba Site near Hartebeespoort in the North West Province. The EIA includes the scoping process and detailed environmental impact assessment. The project includes detailed specialist studies such as social, visual and air quality as well as a full public participation process. Junior Environmental Scientist, GIBB. Necsa, 2011 -current.
- BA for the proposed 25 MW Community Wind Farm in St Helena Bay, Western Cape Province. The BA includes the scoping process and detailed environmental impact assessments. The project includes detailed specialist studies such as social, visual and biophysical as well as a full public participation process. Junior Environmental Scientist, GIBB. Just Energy, 2012 - current.

PUBLIC PARTICIPATION

Responsible for task co-ordination of the Public Participation Process, involving the compilation of Public Participation documentation and reports, Comment and Response Reports, arranging and coordinating public meetings, management of Interested and Affected Party (I&AP) database's and day-to-day solicitation of comments and responses to and from I&APs. Projects included:

- Public Participation Process for the proposed Development of the Duma 400kv Main Transmission Station and Associated 88kv and 400kv turn in Power Lines Near Ulundi, Kwazulu-Natal Province (2013/2015) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed Development of the New Nzalo (Mqwabe) 400/88 Kv, 160mva Substation With Associated 88kv And 400kv Turn-In Power Lines East of Vryheid, Kwazulu-Natal, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;

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- Public Participation Process for the proposed Development of the Vryheid Traction Station and the Associated Eskom Turn In Power Lines In Kwazulu- Natal, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Development of the Sheepmoor Traction Station and Two New Associated 88/25kv Turn In Lines with 20mva Transformer Bays, Mpumalanga Province, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Rebuild of the 88kv Power Line from Uitkoms Substation to Antra T-Off, Approximately 3.5km in length, Mpumalanga Province, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Upgrade of the 24 Km Twin Wolf Power Lines from Normandie To Hlungwana Substation in Mpumalanga and Kwazulu-Natal, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Upgrade of 11.27km of the Umfolozi to Eqwasha Twin Wolf Eskom Power Line and 0.5km of the Umfolozi to Dubula Twin Wolf Eskom Power Line in Kwazulu-Natal, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Development of the Madlanzini Main Transmission Station and associated 88kv and 400kv Turn In Power Lines Near Piet Retief, Mpumalanga Province (2013/2015) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed construction of two solar photovoltaic (PV) plants on portion 6 (portion of portion 5) of the farm Spes Bona 2355 district in Bloemfontein, Free State (2013/2014) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Construction of an 88kv power line from Klevebank Substation (Diepsloot) to Dalkeith Substation (Cosmo City), Gauteng Province (2013) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the EIA and EMPr for the proposed Eastside Junction mixed use development near Delmas, Mpumalanga Province (2013/2014) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the Water use licence application for the proposed construction of an 11kv underground power cable at Ga-rankuwa Substation, Gauteng Province (2013/2014) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Mookodi Integration Project Environmental Impact Assessment (2012/2013) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed for the Proposed Mookodi Integration Phase 2 132kv Power Lines and Ganyesa Substation Near Vryburg, North West Province(2011/2012) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Environmental Impact Assessment of a wind farm near Noupoot, Northern Province (2012/2013) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Renosterberg Wind Farm and PV Plant near De Aar, Northern Cape Province (2012) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed installation of a 500m³ Bulk Storage Fuel Oil Tank at Grootvlei Power Station, Mpumalanga Province (2011/2012) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed development of a 19MW Photovoltaic Solar Power Plant near Kimberley, Northern Cape Province (2012) SiVEST - Graduate Environmental Consultant;
 - Proposed development of a 19MW Photovoltaic Solar Power Plant near Kimberley, Northern Cape Province (2012) SiVEST - Graduate Environmental Consultant;
 - Proposed development of a 19MW Photovoltaic Solar Power Plant near Danielskuil, Northern Cape Province (2012) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Frankfort Strengthening Project: 88kV power line from Heilbron (via Frankfort) to Villiers, Free State Province (2013) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed Construction of a 132KV Power Line Associated with the Redstone Solar Thermal Energy Plant in the Northern Cape Province. (2012) SiVEST - Graduate Environmental Consultant;
 - Public Participation Process for the proposed for the Proposed Development of a Solar Photovoltaic (PV) Power Plant and Wind Farm near De Aar, Northern Cape Province (2012) SiVEST - Graduate Environmental Consultant;

- Public Participation Process for the proposed construction of a 132kv Power Line Associated with the Concentrating Photovoltaic (CPV) / Photovoltaic (PV) Solar Infrastructure (PV 2) from the Farm Droogfontein to Eskom's Existing Macfarlane Substation north of Kimberley, Northern Cape Province (2012) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed Moloto Development Corridor (MDC) Project Located between the City of Tshwane Local Municipality in Gauteng Province and Groblersdal, Limpopo Province, Traversing Mpumalanga Province (2013) SiVEST - Graduate Environmental Consultant;
- Environmental Impact Assessment (EIA) for the Proposed Eastside Junction Mixed Use Development near Delmas, Mpumalanga Province (2013) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed Construction of a 19mw Photovoltaic (PV) Power Plant on the remainder of Farm 267 near Arriesfontein, Northern Cape Province (2011/2012) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed Construction of a 7km 132kv Power Line and Substation near Postmasburg Northern Cape Province (2011/2012) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed Westrand Strengthening Project – 400kv Double Circuit Power Line from Westgate Substation to Hera Substation and Westgate Substation Extension, Gauteng (2012) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed for the development of a Wind Farm and Solar Photovoltaic Power Plant near Loeriesfontein, Northern Cape Province (2012);
- Public Participation Process for the proposed Construction of a Wind Farm near Noupoort, Northern Cape Province (2012) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed Construction of Solar Photovoltaic Facilities near Prieska, Northern Cape Province (2012) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed construction of a 132kv Power Line, Substation and the extension of Homestead Substation associated with the Concentrating Photovoltaic (CPV) / Photovoltaic (Pv) Plant (PV 3) on the Farm Droogfontein in Kimberley, Northern Cape Province (2012/2013) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed Water Use License for the Frankfort Strengthening Project: 88kV power line from Heilbron (via Frankfort) to Villiers, Free State Province (2013) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed Water Use License for an 88kV power line from Klevebank Substation to Dalkeith Substation, Gauteng Province (2013) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed Water Use License for an 11kV power line from Zola Substation to Civic Substation, Gauteng Province (2013) SiVEST - Graduate Environmental Consultant;
- Public Participation Process for the proposed 25 MW Community Wind Farm in St Helena Bay, Western Cape Province. Junior Environmental Scientist, GIBB (2011);
- Public Participation Process for the proposed 300 MW Caledon Wind Farm, Western Cape Province. Junior Environmental Scientist, GIBB (2011);
- Public Participation Process for the proposed Dedicated Isotope Production Reactor (DIPR) for the South African Nuclear Energy Corporation (NECSA) at Pelindaba, North West Province. Junior Environmental Scientist, GIBB (2011).

WETLAND IMPACT ASSESSMENT

Field assistant for wetland impact assessments, wetland and riparian delineations:

- Construction of an 88kV Power Line at Lochvaal Kudu in the Emfuleni Municipality, Gauteng Province, South Africa: Surface Water Impact Assessment and Rehabilitation Plan (2013);
- Construction of the Sheepmoor traction substation with two 20MVA transformer bays and a new associated 88kV turn-in power line, Mpumalanga Province (2013)
- Rebuild of the 88kV power line from Uitkoms substation to Antra T-off, Mpumalanga Province (2013)

VISUAL IMPACT ASSESSMENT

- Visual Impact Assessment for the Proposed Development of a Solar Photovoltaic (PV) Power Plant and Wind Farm near De Aar, Northern Cape Province SiVEST - Graduate Environmental Consultant;
- Visual Impact Assessment for the Proposed construction of the Sheepmoor traction substation with two 20MVA transformer bays and a new associated 88kV turn-in power line, Mpumalanga Province SiVEST - Graduate Environmental Consultant
- Visual Impact Assessment for the Proposed rebuild of the 88kV power line from Uitkoms substation to Antra T-off, Mpumalanga Province SiVEST - Graduate Environmental Consultant
- Visual Impact Assessment for the: Proposed Development of the Sheepmoor Traction Station and Two New Associated 88/25kv Turn In Lines with 20mva Transformer Bays, Mpumalanga Province, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
- Visual Impact Assessment for the Proposed Rebuild of the 88kv Power Line from Uitkoms Substation to Antra T-Off, Approximately 3.5km in length, Mpumalanga Province, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
- Visual Impact Assessment for the Proposed Upgrade of the 24 Km Twin Wolf Power Lines from Normandie To Hlungwana Substation in Mpumalanga and Kwazulu-Natal, South Africa (2013/2015) SiVEST - Graduate Environmental Consultant;
- Visual Impact Assessment for the proposed Development of the Madlanzini Main Transmission Station and associated 88kv and 400kv Turn In Power Lines Near Piet Retief, Mpumalanga Province (2013/2015) SiVEST - Graduate Environmental Consultant;

ENVIRONMENTAL CONTROL OFFICER

- Environmental Control officer Services for the Orange Farm road upgrade project, Gauteng Province. ECO Junior Environmental Scientist, GIBB (2012).

CURRICULUM VITAE

MARTIN FERREIRA

NAME OF PERSON : *MARTIN FERREIRA*

NATIONALITY : *SOUTH AFRICAN*

DATE OF BIRTH : *1982/02/19*

NAME OF CURRENT FIRM : *JEFFARES & GREEN (PTY) LTD*

PROFESSION : *AQUATIC SCIENTIST*

POSITION IN FIRM : *SENIOR AQUATIC SCIENTIST*

QUALIFICATION : *PhD. Aquatic health*

SPECIALISATION IN FIRM : *AQUATIC SCIENCE*

YEARS OF EXPERIENCE : *7*

YEARS WITH CURRENT FIRM : *3.3*

SUMMARY OF EXPERIENCE

Martin completed his PHD in aquatic health under the supervision of Prof Victor Wepener at the beginning of 2010. His research focused on the development of methods to determine the ecological integrity of endorheic wetlands. Since January 2008 he has worked as co-manager at Econ@uj. Econ@uj is a multi-disciplinary consortium of environmental specialists based at the University of Johannesburg (UJ). He has completed numerous specialist studies for Environmental Impact Assessments throughout Southern Africa. These studies were conducted for various land use activities (especially mining). These studies were conducted on riverine, estuarine and wetland ecosystems. Martin's duties included the writing of project proposals, calculating project costs and formulating budgets, organisation of field surveys, completion of field surveys, writing of project reports and management of human resources.

Martin joined Jeffares and Green in the beginning of 2012 as an Aquatic Scientist, providing specialist services related to water quality monitoring, biomonitoring, ecological state assessments of rivers and wetlands, wetland delineations, Water Use Authorisation, Environmental Impact Assessments, Environmental Audits and Environmental Control Officer duties. He is also actively involved in research and serves as a steering committee member for several Water Research Commission (WRC) funded projects and is also a project leader for projects funded by the WRC.

He has working experience of the various Ecostatus modules that form part of the reserve (including MIRAI and FRAI) and also has extensive knowledge and experience in aquatic resource monitoring through the use of the River Health Program methodologies (South African Scoring System version 5 accredited since 2005). Through presentations at national and international conferences and the writing of numerous reports and publications he has required excellent verbal and written communication skills. He also has excellent computer skills including GIS software (ArcGIS) and several statistical software packages (Primer, Canoco, SPSS).

EDUCATION

- 2000 : **Matric** – Gekombineerde Skool Noorderlig.
2003 : **BSc** (Aquatic Health) -Rand Afrikaans University
2004 : **BSc Hons** (Aquatic Health) - Rand Afrikaans University
2006 : **MSc** (Aquatic Health) *Cum Laude* - University of Johannesburg
2010 : **PhD** (Aquatic Health) - University of Johannesburg

SPECIFIC EXPERIENCE

Jeffares & Green (Pty) Ltd

- 2015 – Present** : Position: Senior Aquatic Scientist
Assessment and monitoring of rivers and wetlands associated with the construction of the Kusile Power Station near Ogies, Mpumalanga
Biomonitoring services and water quality monitoring for 19 Wastewater Care Works for the Eastrand Water Care Company
Assessment and delineation of wetland associated with the Ford South Africa operational facility
Annual water quality audit for the Kumba Iron Ore mining operations
Assessment and delineation of wetlands associated with the decommissioning of the Atlas Substation near Meyerton, Gauteng
Assessment of the impacts of land use changes on the water quality of selected RAMSAR wetlands
- 2014 – 2015** : Position: Senior Aquatic Scientist
Assesment of rivers, wetlands and drainage lines associated with the Kumba Iron Ore mining activities for the application of a section 21 (c) and (i) WULA
Assessment and delineation of wetland associated with a landfill facility near Springs, Gauteng
Assessment and delineation of wetland associated with the BECSA mining activities, Mpumalanga
Assessment and delineation of wetlands associated with a new housing development in the Sol Plaatjies Municipality, Kimberley
Assessment and delineation of wetland associated with the construction of a bulk sewer near Meyerton
Biomonitoring services for Kumba Iron Ore, Thabazimbi
Assessment and monitoring of rivers and wetlands associated with the construction of the Kusile Power Station near Ogies, Mpumalanga
Assessment and delineation of wetlands associated with the upgrade of the Thabong interchange near Welkom, Free State
Biomonitoring services and water quality monitoring for 19 Wastewater Care Works for the Eastrand Water Care Company
Biomonitoring of selected sites associated with the Mafube Colliery near Middelburg, Mpumalanga
- 2013 – 2014** : Position: Aquatic Scientist
: Biomonitoring services for Kumba Iron Ore, Thabazimbi

- : Assessment of the fish communities of the lower Nsuze and Thukela rivers for the establishment of an irrigation scheme, Kwazulu-Natal
- : Delineation of wetlands associated with the construction of a substation and associated infrastructure near Harrismith, KwaZulu-Natal
- : Assessment and delineation of wetlands associated with the upgrade of the R545 and D686 near Emalahleni
- : Biomonitoring services and water quality monitoring for 19 Wastewater Care Works for the Eastrand Water Care Company
- : Wetland Specialist Assessment for the Ermelo Majuba Railway line, Ermelo Mpumalanga.
- : Biomonitoring services and water quality monitoring for the Ermelo Majuba Railway line, Ermelo Mpumalanga
- : Aquatic invertebrate and habitat state assessment for various rivers associated with mining activities in Thabazimbi
- : Aquatic specialist services for the assessment of the impact of proposed upgrade Eskom's electricity network associated with 14 riverine systems in Pretoria
- : Identification and delineation of wetlands associated with the upgrade of the Johannesburg Fresh Produce Market
- : Environmental Control Officer for the upgrade of the N11 near Newcastle, South Africa
- : Independent environmental auditor of selected landfill sites and operations for Scaw Metals
- : Project leader for a Water Research Commission funded study on the applicability of a trophic based classification system for endorheic wetlands and the effect of Acid Mine Drainage on the hatching success of selected invertebrates

2012 – 2013

- : Position: Aquatic Scientist
- : Aquatic specialist studies for selected ecosystems associated with coal mining and power generation activities near Middelburg, Mpumalanga.
- : Project leader for a Water Research Commission funded study on the applicability of a trophic based classification system for endorheic wetlands and the effect of Acid Mine Drainage on the hatching success of selected invertebrates
- : Aquatic invertebrate assessment for the systematic water quality monitoring of the Okavango Delta, Botswana
- : Biomonitoring and water quality monitoring of Waste Water Treatment Works in the Tshwane metropolitan, South Africa
- : Aquatic specialist studies for selected riverine and wetland sites near Middelburg (South Africa) as part of an EIA for coal mining activities
- : Assisted with the biomonitoring and water quality monitoring of Waste Water Treatment Works for the City of Johannesburg, South Africa
- : Aquatic macroinvertebrate and habitat assessment of selected sites associated with mining activities in Thabazimbi, South Africa
- : Environmental Control Officer for the upgrade of the N11 near Newcastle, South Africa
- : Independent environmental auditor of selected landfill sites within the Johannesburg Metropolitan
- : Aquatic specialist studies for the Water Use Authorisation for the upgrade of a pedestrian bridge at Henley-on-Klip, South Africa
- : Aquatic specialist studies to determine the impact of emergency repair work of a railway line at Kamfers Dam in Kimberley (South Africa)

- : Aquatic specialist studies for the Water Use Authorisation for the emergency repairs of the parking area for Makro, Centurion, South Africa
- : Biomonitoring of selected rivers within the Sasolburg industrial area, South Africa
- : Aquatic specialist studies for the Water Use Authorisation for endorheic wetlands near Kriel, Mpumalanga

Econ@uj

- 2007 – 2011**
- : Assessment of the ecological state of the local aquatic ecosystem associated with a coal siding, Mpumalanga, South Africa
 - : Assessment of the ecological state of the lower Mvoti and Tugela River and Estuarine systems, KZN, South Africa
 - : Assisted with biomonitoring of Tshwane waste water treatment works, Pretoria, South Africa
 - : Assessment of the ecological state of the local aquatic ecosystem associated with Anglo coal mining activities, Mpumalanga, South Africa
 - : Assessment of the availability of fish communities as part of a human health risk assessment in KZN, South Africa
 - : Aquatic specialist studies for the EIA for the proposed upgrade of the N1 highway, Johannesburg, South Africa
 - : Aquatic specialist studies for the EIA for the proposed sand mining activities in the Eastern Cape, South Africa
 - : Aquatic specialist studies for the EIA for the proposed coal mining activities near Newcastle, South Africa
 - : Aquatic specialist studies for the EIA for a coal washing plant and siding near Newcastle, South Africa.
 - : Assisted in aquatic specialist studies for the EMP for a platinum mine in Polokwane, South Africa.
 - : Biomonitoring of aquatic ecosystem associated with the construction of a railway line near Ermelo, South Africa.
 - : Assessment of the ecological integrity of the Klip River, South Africa for the establishment of a water quality management program
 - : Assessment of the aquatic ecosystems associated with mining activities in Thabazimbi
 - : Aquatic specialist studies for the EIA for the proposed coal mining activities in Mpumalanga, South Africa
 - : Fish community assessment of the Dwars River near Polokwane
 - : Assessment of the aquatic invertebrate communities associated with the Olifants River Water Resources Development Project Phase 2 (ORWRDP-2).

University of Johannesburg

- 2011-present : Supervision of Masters and honours students
- 2007 - 2011 : Lecturer for 3rd year freshwater ecology courses
- 2010 : Lecturer in human physiology third year courses
- 2008 - 2010 : Supervision of honours students (projects)
- 2008 - 2010 : Part time lecturer in Indices of Biotic Integrity for honors courses
- 2004 -2008 : 3rd year practical demonstrator in ecology and animal physiology

PUBLISHED PAPERS

M Ferreira, V Wepener & JHJ Van Vuuren (2008). The effect of paper mill activities on the fish community structure of the Elands river, Mpumalanga. *Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie*, Vol. 27 (4) pp 82–94.

M Ferreira, V Wepener & JHJ Van Vuuren (2009). Spatial and temporal variation in the macroinvertebrate community structure of the lower Elands River, Mpumalanga, South Africa. *African Journal of Aquatic Science* 2009 Vol.34 (3) pp 231–238.

M Ferreira, V Wepener & JHJ Van Vuuren (2010). The occurrence of large Branchiopod crustaceans in perennial pans: a research note. *African Journal of Zoology*. Vol. 46 (1) pp 176-178

M Ferreira, V Wepener & JHJ Van Vuuren (2012). Aquatic invertebrate communities of perennial pans in Mpumalanga, South Africa: a diversity and functional approach. *African Invertebrates*. Vol. 53 (2) pp 751–768

AJ Henri, V Wepener, M Ferreira, W Malherbe & JHJ Van Vuuren (2014). The effect of acid mine drainage on the hatching success of branchiopod egg banks from endorheic wetlands in South Africa. *Hydrobiologia*. Volume 738 (1) pp 35-48

Liefferink SL, Tate RB, JHJ van Vuren JHJ, Ferreira M & W Malherbe W (2014). A comparison of methods for incubating zooplankton diapausing eggs from sediment of endorheic pans in the Free State, South Africa. *African Journal of Aquatic Science*. pp1–7

Professional membership

SASAqS Southern African Society of Aquatic Scientists
SETAC Society of Environmental Toxicology and Chemistry
SACNASP Registered with the South African Council for Natural Scientific Professions.
Registration number 400265/11 (Ecological Sciences)

Computer and software skills

GIS : Arc, QGIS, MapWindow
Statistical : Primer, Canoco, SPSS
Other : Microsoft Office

LANGUAGES

English : Very Good
Afrikaans : Excellent

Wouter Fourie
Professional Heritage Specialist and Director PGS Heritage

Summary of Experience

Specialised expertise in Cultural Resource Management and Heritage Impact Assessment Management, Archaeology, Anthropology, Applicable survey methods, Fieldwork and project management, Geographic Information Systems, including *inter alia*:

Involvement with various Heritage Impact Assessments, within South Africa, including:

- Archaeological Walkdowns for various projects
- Phase 2 Heritage Impact Assessments and EMPs for various projects
- Heritage Impact Assessments for various projects

Iron Age Mitigation Work for various projects, including archaeological excavations and monitoring

Involvement with various Heritage Impact Assessments, outside South Africa, including:

- Heritage Impact Assessments in Democratic Republic of Congo
- Heritage Impact Assessments in Mozambique, Botswana and DRC
- Grave Relocation projects in DRC

Involvement in various grave relocation projects (some of which relocated up to 1000 graves) and grave “rescue” excavations in the various provinces of South Africa

Key Qualifications

BA [Hons] (Cum laude): Archaeology and Geography

BA: Archaeology, Geography and Anthropology

Professional Archaeologist - Association of Southern African Professional Archaeologists (ASAPA) - Professional Member

Accredited Professional Heritage Specialist – Association of Professional Heritage Practitioners (APHP)

CRM Accreditation (ASAPA):

- Principal Investigator - Grave Relocations
- Field Director – Iron Age
- Field Supervisor – Colonial Period and Stone Age

Accredited with Amafa KZN and Eastern Cape PHRA

Key Work Experience

2008- current: Director –Professional Grave Solutions (Pty) Ltd t/a PGS Heritage

2007 – 2008: Project Manager – Matakoma-ARM, Heritage Contracts Unit, University of the Witwatersrand

2005-2007: Director - Professional Grave Solutions (Pty) Ltd

2000-2004: CEO– Matakoma Consultants

1998-2000: Environmental Coordinator – Randfontein Estates Limited. Randfontein, Gauteng

1997-1998: Environmental Officer – Department of Minerals and Energy. Johannesburg, Gauteng

CURRICULUM VITAE

Andrea Gibb

Name Andrea Gibb

Profession Environmental Practitioner

Name of Firm SiVEST SA (Pty) Ltd

Present Appointment Environmental Practitioner and Visual Specialist:
Environmental Division

Years with Firm 6 Years

Date of Birth 29 January 1985

ID Number 8501290020089

Nationality South African



Education

Matriculated 2003, Full Academic Colours, Northcliff High School, Johannesburg, South Africa

Professional Qualifications

BSc (Hons) Environmental Management (University of South Africa 2008-2010)

Coursework: Project Management, Environmental Risk Assessment and Management, Ecological and Social Impact Assessment, Fundamentals of Environmental Science, Impact Mitigation and Management, Integrated Environmental Management Systems & Auditing, Integrated Environmental Management, Research Methodology.

Research Proposal: Golf Courses and the Environment

BSc Landscape Architecture (with distinction) (University of Pretoria 2004-2007)

Coursework: Core modules focused on; design, construction, environmental science, applied sustainability, shifts in world paradigms and ideologies, soil and plant science, environmental history, business law and project management.

Awards: Cave Klapwijk prize for highest average in all modules in the Landscape Architecture programme, ILASA book prize for the best Landscape Architecture student in third year design, Johan Barnard planting design prize for the highest distinction average in any module of plant science.

ArcGIS Desktop 1 (ESRI South Africa December 2010)

Environmental Impact Assessment (EIA) 2014 Legal Regime Workshop (Imbewu 2015)

Employment Record

Aug 2010 – to date SiVEST SA (Pty) Ltd: Environmental Practitioner

Jan 2008 – July 2010 Cave Klapwijk and Associates: Environmental Assistant and Landscape Architectural Technologist

Feb 2006 – Dec 2006 Cave Klapwijk and Associates: Part time student

Language Proficiency

LANGUAGE	SPEAK	READ	WRITE
English	Fluent	Fluent	Fluent

Key Experience

Specialising in the field of Environmental Management and Visual Assessment.

Andrea joined SiVEST in August 2010 and holds the position of Environmental Practitioner in the Johannesburg Office. She has 8.5 years' work experience and specialises in managing large scale multifaceted EIAs and Basic Assessment (BAs), primarily related to renewable energy generation and electrical distribution. She also specialises in undertaking visual impact and landscape assessments. She has extensive experience in overseeing public participation and stakeholder engagement processes and has been involved in environmental baseline assessments, fatal flaw / feasibility assessments and environmental negative mapping / sensitivity analyses. From a business and administrative side, Andrea is actively involved in maintaining good client relationships, mentoring junior staff and maintaining the financial performance of the projects she leads.

Skills include:

- Project Management (MS Project)
- Environmental Impact Assessment (EIA)
- Basic Assessment (BA)
- Public Participation Management
- Visual Impact Assessment (VIA)
- Landscape Assessment
- Strategic Environmental Planning
- Documentation / Quality Control
- Project Level Financial Management

Projects Experience

Aug 2010 – to date

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) / BASIC ASSESSMENT (BA)

- EIA for the proposed development of the Tlisitseng 1 and 2 75MW Solar Photovoltaic (PV) Energy Facilities near Lichtenburg, North West Province.
- EIAs for the proposed development of the Sendawo 1, 2, and 3 75MW Solar PV Energy Facilities near Vryburg, North West Province.
- EIA for the proposed construction of the Sendawo Common Collector Substation and power line near Vryburg, North West Province.
- EIA for the proposed construction of the Aletta 140MW Wind Energy Facility near Copperton, Northern Cape Province.
- Application for an Amendment of the Environmental Authorisation (EA) for the proposed construction of the 100MW Limestone Solar Thermal Power Project near Danielskuil, Northern Cape Province.
- Applications for the Amendment of the EAs for the proposed construction of three 75MW solar PV facilities near Prieska, Northern Cape Province.
- Applications for the Amendment of the EAs for the proposed construction of the 75MW Arriesfontein and Wilger Solar Power Plants near Danielskuil, Northern Cape Province.
- Completion and submission of the final EIA report for the proposed Rooipunt PV Solar Power Park Phase 1 and proposed Rooipunt PV Solar Power Park Phase 2 near Upington, Northern Cape Province.
- EIAs for the proposed construction of the Helena 1, 2 and 3 75MW Solar PV Energy Facilities near Copperton, Northern Cape Province.
- EIA for the proposed construction of the Nokukhanya 75MW Solar PV Power Plant near Dennilton, Limpopo Province.
- EIA for the proposed development of the Dwarsrug Wind Farm near Loeriesfontein, Northern Cape Province.

CURRICULUM VITAE

Andrea Gibb

- BA for the proposed construction of two 132kV power lines and associated infrastructure from the Redstone Solar Thermal Power Project site to the Olien MTS near Lime Acres, Northern Cape Province.
- BA for the proposed construction of two 132kV power lines and associated infrastructure from Silverstreams DS to the Olien MTS near Lime Acres, Northern Cape Province.
- BA for the proposed Construction of the SSS1 5MW Solar PV Plant on the Western Part of Portion 6 (Portion of Portion 5) of Farm Spes Bona 2355 near Bloemfontein, Free State Province.
- BA for the proposed Construction of the SSS2 5MW Solar PV Plant on the Eastern Part of Portion 6 (Portion of Portion 5) of Farm Spes Bona 2355 near Bloemfontein, Free State Province.
- BA for the proposed Mookodi Integration Phase 2: Proposed Construction of a 132kV power line from the proposed Bophirima Substation to the existing Schweizer-Reneke Substation, North West Province.
- BA for the proposed Mookodi Integration Phase 2: Proposed Construction of a 132kV power line from the Mookodi Substation to the existing Magopela Substation, North West Province.
- BA for the proposed Mookodi Integration Phase 2: Proposed Construction of the Mookodi - Ganyesa 132kV power line, proposed Ganyesa Substation and Havelock LILO, North West Province.
- Amendment of the Final Environmental Impact Report for the Proposed Mookodi 1 Integration Project near Vryburg, North West Province.
- BA for the proposed 132kV power line and associated infrastructure for the proposed Redstone Solar Thermal Energy Plant near Lime Acres, Northern Cape Province.
- BA for the proposed construction of a 132kV power line and substation associated with the 75MW PV Plant on the Farm Droogfontein (PV 3) in Kimberley, Northern Cape Province.
- BA for the proposed establishment of a Learning and Development Retreat and an Executive Staff and Client Lodge at Mogale's Gate, Gauteng Province.
- Application for an Amendment of the EA to increase the output of the proposed 40MW PV Facility on the farm Mierdam to 75MW, Northern Cape Province.
- BA for the proposed construction of a power line and substation near Postmasburg, Northern Cape Province.
- BA for the proposed West Rand Strengthening Project – 400kV double circuit power line and substation extension in the West Rand, Gauteng.
- EIA for the proposed construction of a wind farm and PV plant near Prieska, Northern Cape Province.
- Public Participation assistance as part of the EIA for the proposed Thyspunt Transmission Lines Integration Project – EIA for the proposed construction of 5 x 400kV transmission power lines between Thyspunt to Port Elizabeth, Eastern Cape Province.
- EIA assistance for the proposed construction of three Solar Power Plants in the Northern Cape Province.
- Public Participation as part of the EIA for the proposed Delareyville Kopela Power Line and Substation, North West Province.
- Public Participation as part of the EIA for the Middelburg Water Reclamation Project, Mpumalanga Province.

VISUAL IMPACT ASSESSMENT (VIA)

- VIA (Scoping Phase) for the proposed construction of a 3000MW Wind Farm and associated infrastructure near Richmond, Northern Cape Province.
- VIA for the proposed construction of a power line and associated infrastructure for the proposed Kalkaar Solar Thermal Power Plant near Kimberley, Free State and Northern Cape Provinces.
- VIA for the proposed construction of a power line and associated infrastructure for the proposed Rooipunt Solar Thermal Power Plant near Upington, Northern Cape Province.
- VIAs (Impact Phase) for the proposed construction of the Sendawo 1, 2 and 3 solar PV energy facilities near Vryburg, North West Province.

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- VIA (Impact Phase) for the proposed construction of the Sendawo substation and associated power line near Vryburg, North West Province.
 - VIAs (Impact Phase) for the proposed construction of the Tlisitseng 1 and 2 solar PV energy facilities near Lichtenburg, North West Province.
 - VIA for the proposed construction of the Tlisitseng substation and associated 132kV power line near Lichtenburg, North West Province.
 - VIA (Scoping Phase) for the proposed construction of the Sendawo substation and associated power line near Vryburg, North West Province.
 - VIA (Scoping Phase) for the proposed construction of the Sendawo 1, 2 and 3 solar PV energy facilities near Vryburg, North West Province.
 - VIA (Scoping Phase) for the proposed construction of the Tlisitseng 1 and 2 solar PV energy facilities near Lichtenburg, North West Province.
 - Visual recommendations for Phase 1 of the proposed Renishaw Estate Mixed Use Development, KwaZulu-Natal Province.
 - VIA for the proposed Tinley Manor South Banks Development, KwaZulu-Natal Province.
 - VIAs (Impact Phase) for the proposed construction of the Helena 1, 2 and 3 75MW Solar PV Energy Facilities near Copperton, Northern Cape Province.
 - VIA (Scoping Phase) for the proposed construction of the Helena 1, 2 and 3 75MW Solar PV Energy Facilities near Copperton, Northern Cape Province.
 - Visual Due Diligence Report for the possible rapid rail extensions to the Gauteng network, Gauteng Province.
 - Visual Status Quo and Constraints Report for the possible rapid rail extensions to the Gauteng network, Gauteng Province.
 - VIA for the proposed agricultural components of the Integrated Sugar Project in Nsoko, Swaziland.
 - VIA for the proposed Tweespruit to Welroux power lines and substation, Free State Province.
 - VIA for the proposed construction of the Nokukhanya 75MW Solar PV Power Plant near Dennilton, Limpopo Province.
 - VIA (Impact Phase) for the proposed development of the Dwarsrug Wind Farm near Loeriesfontein, Northern Cape Province.
 - VIA for the proposed amendment to the authorised power line route from Hera Substation to Westgate Substation, Gauteng Province.
 - VIA (Impact Phase) for the Eastside Junction Mixed Use Development near Delmas, Mpumalanga Province.
 - VIA for the proposed construction of two 132kV power lines and associated infrastructure from the Redstone Solar Thermal Power Project site to the Olien MTS near Lime Acres, Northern Cape Province.
 - VIA for the proposed construction of two 132kV power lines and associated infrastructure from Silverstreams DS to the Olien MTS near Lime Acres, Northern Cape Province.
 - VIA (Scoping Phase) for the proposed development of the Dwarsrug Wind Farm near Loeriesfontein, Northern Cape Province.
 - VIA for the proposed Rorqual Estate Development near Park Rynie on the South Coast of KwaZulu Natal.
 - VIA (Scoping Phase) for the proposed construction of a Coal-fired Power Station, Coal Mine and Associated Infrastructure near Colenso, KwaZulu-Natal Province.
 - VIA for the proposed Mookodi Integration Phase 2: Proposed Construction of the Mookodi - Ganyesa 132kV power line, proposed Ganyesa Substation and Havelock LILO, North West Province.
 - VIA for the proposed construction of the Duma transmission substation and associated Eskom power lines, KwaZulu-Natal Province.
 - VIA for the proposed construction of the Madlanzini transmission substation and associated Eskom power lines, Mpumalanga Province.
 - VIA for the proposed rebuild of the 88kV power line from Normandie substation to Hlungwane substation, Mpumalanga and KwaZulu-Natal Provinces.
 - VIA for the proposed construction of the Nzalo transmission substation and associated Eskom power lines, KwaZulu-Natal Province.

- VIA for the proposed construction of the Sheepmoor traction substation with two 20MVA transformer bays and a new associated 88kV turn-in power line, Mpumalanga Province.
- VIA for the proposed rebuild of the 88kV power line from Uitkoms substation to Antra T-off, Mpumalanga Province.
- VIA for the proposed rebuild of the 88kV power line from Umfolozi substation to Eqwasha traction substation including an 88kV turn-in power line to Dabula traction substation, Kwazulu-Natal Province.
- VIA for the proposed construction of the new 88/25kV Vryheid traction substation with two 20MVA transformer bays and a new associated 88kV turn-in power line, KwaZulu-Natal Province.
- VIA for the proposed construction of a 132kV power line and substation associated with the 75MW PV Plant on the Farm Droogfontein (PV 3) in Kimberley, Northern Cape Province.
- VIA (Impact Phase) for the proposed Construction of a Solar PV Power Plant near De Aar, Northern Cape Province.
- VIA for the (Impact Phase) proposed Construction of the Renosterberg Wind Farm near De Aar, Northern Cape Province.
- VIA for the (Impact Phase) proposed Construction of the Renosterberg Solar PV Power Plant near De Aar, Northern Cape Province.
- VIA for the proposed construction of a 132kV power line for the Redstone Thermal Energy Plant near Lime Acres, Northern Cape Province.
- VIA for the proposed Mookodi Integration phase 2 132kV power lines and Ganyesa substation near Vryburg, North West Province.
- VIA for the proposed 132kV power lines associated with the PV Plants on Droogfontein Farm near Kimberley, Northern Cape Province.
- VIA (Scoping phase) for the Eastside Junction Mixed Use Development near Delmas, Mpumalanga Province.
- VIA for the proposed development of a learning and development retreat and an executive and staff lodge at Mogale's Gate, Gauteng Province.
- VIA for the proposed construction of a substation and 88kV power line between Heilbron (via Frankfort) and Villiers, Free State Province.
- Visual Status Quo Assessment for the Moloto Development Corridor Feasibility Study in the Gauteng Province, Limpopo Province and Mpumalanga Province.
- VIA the West Rand Strengthening Project – 400kV double circuit power line and substation extension in the West Rand, Gauteng.
- VIA for the proposed construction of a wind farm and solar photovoltaic plant near Loeriesfontein, Northern Cape Province.
- Visual sensitivity mapping exercise for the proposed Mogale's Gate Expansion, Gauteng.
- VIA (Scoping Phase) for the proposed Renosterberg Solar PV Power Plant and Wind Farm near De Aar, Northern Cape Province.
- Scoping level VIAs for the proposed construction of three Solar Power Plants in the Northern Cape Province.
- VIAs for the Spoornet Coalink Powerline Projects in KZN and Mpumalanga.
- Visual Constraints Analysis for the proposed establishment of four Wind Farms in the Eastern and Northern Cape Province.
- VIA (Scoping Phase) for the proposed development of a solar energy facility in De Aar, Northern Cape.
- VIA (Scoping Phase) for the proposed development of a solar energy facility in Kimberley, Northern Cape.

STRATEGIC ENVIRONMENTAL PLANNING

- Assistance with the Draft Environmental Management Framework for the Mogale City Local Municipality, Gauteng Province.
- Sensitivity Negative Mapping Analysis for the proposed Mogale's Gate Development, Gauteng Province.

OTHER**Jan 2008 – July 2010**

Environmental management, research, report writing, and landscape design for several development projects:

- Report writing, coordination and public participation for several BAs.
- Planting design (including rehabilitation) in accordance with natural ecological processes, endemic species and appropriate techniques.
- Graphic presentations and mapping for several VIAs and landscape architectural designs, including three-dimensional imagery.

Feb 2006 – Dec 2006

Landscape Architectural drafting, rendering and planting design for a variety of projects including the Oprah Winfrey Academy for girls and the New UNISA Student Entrance Building.

CURRICULUM VITAE
DR GIDEON GROENEWALD

Cell phone: 078 713 6377 **Email:** 1davidgroenewald@gmail.com

Name: Dr Gideon Groenewald
Age: 59
Profession: Geologist
Date of Birth: 1955-09-30
Parent Firm: Self Employed
Nationality: South African
Native Language: Afrikaans. Able to speak, read and write English fluently.

Academic Qualifications:

BSc and BSc Hons (UPE, 1978), MSc (RAU, 1985), Nat
Dip Nature Conservation (Tech SA, 1990), PhD Geology (UPE, 1996)
Professional Associations: Professional Scientist (Reg. No. 401946/83).
Professional membership with the Geological Society of South Africa, the
Palaeontological Society of South Africa, Borehole Water Association of South
Africa.

Publications:

- 16 Scientific and large number of popular articles on geology, ecology and groundwater.
- 12 TV 50/50 programs on nature conservation and geology, mainly with Jan Horn and Johan Botha as producers.
- Several children programs on SATV
- M-Net programs, several producers.
- BBC TV Series: "Earth Story" (1998), producer Cynthia Page.
- 10 Papers read at International Symposiums.
- Regular speaker at public meetings and schools.
- Course in Eco-tourism, Qwaqwa University

General Geological, Palaeontological and Environmental Management Experience:

37+ years experience in Southern Africa in the capacity as:

1978-1986 Geologist - Geological Survey SA - regional mapping division

1986-1993 Ranger, Snr Research Officer, Geologist - National Parks Board SA, geological and groundwater studies in Southern and Inland Parks

1993-present Director of Metsi Metseng Geological Services – consultant to farmers and larger companies, Maseru Pumps and Plastics (Lesotho), Peace Parks Foundation, SA National Parks, Local Town Councils, DLA, Dept of Agriculture, DEAT, Imperial Truck and Car, Caltex, Shell and Anglo American on ground water related projects, locating and mapping of quarries in dolerite and sandstone terrain for road building, locating and mapping of sand deposits for construction work, electronic database programs, classification and mapping of geological formations in terms of structural stability for engineering projects, classification and mapping of soils for engineering projects.

Environmental Impact Assessments. Risk assessment at sites of petroleum spills. Very good knowledge of geology of the Upper Karoo Supergroup (PhD) and dolerite formations (groundwater related projects), monitoring of drilling and logging of boreholes (mainly chips,

but also coredrilling), full time since 1993.

1993 – present: Appointed geohydrologist for the siting of boreholes, monitoring of drilling and testing of boreholes for towns, farmers and industries. Also appointed geohydrologist for a number of geohydrological surveys and reports for developments around South Africa.

2001-2010: Contractual appointment: Peace Parks Foundation: Lesotho Transfrontier Facilitator for the Maloti-Drakensberg Transfrontier Conservation Development and other related Transfrontier projects. Mainly involved in development of Responsible Tourism in Lesotho and border regions of South Africa.

2005-2006: Consultant to Maluti-A-Phofung Municipality to develop Tourism Sector Plan (DBSA Project)

2005-present: Ad hoc appointment as environmental consultant (geology, geohydrology and soils) to assess environmental impacts at road accidents where tanker trucks are involved in large scale spillages of dangerous goods

2008 – 2011: Appointed Palaeontologist on the Ingula Pumped Storage Scheme of Eskom

2009 – 2012: Appointed Palaeontologist for the new Petroleum Pipeline installation from Heidelberg (Gauteng) to Durban

2010 – 2012: Appointed Geohydrologist to supply groundwater to the town of Senekal/Matwabeng

2012: Appointed palaeontologist by AMAFA to compile a palaeontological sensitivity map and palaeontological technical report for Kwa-Zulu Natal Province

2012 – present: Appointed palaeontologist for numerous palaeontological impact assessments (PIAs) throughout South Africa.

2014: Appointed palaeontologist by SAHRA to compile a palaeontological sensitivity map and palaeontological technical report for Free State, Gauteng, Limpopo, Mpumalanga and North West Provinces for integration into the SAHRIS online map

Other Experience:

1986-1993: Wildlife Management - ranger and research officer, National Parks Board, South Africa.

1986-present: Environmental Education - take school children on field trips, assist in filming of educational TV programs on interpretative geology, palaeontology and ecology, including grassveld ecology and the ecology of lichens.

1978-present: Palaeontology - Environmental Impact Assessments and Fossil hunting expeditions for international and local tourist market.

1997 - Co-leader of International Geological Conference Field Trip in the Karoo,

2000 – 2003: University of the Free State, Qwaqwa branch - Appointed as Senior Lecturer Eco-tourism. Development of short course in Ecotourism at Hons level.

2005-2010: Contractual employment to present short training courses in tourism – South Africa and Lesotho.

CURRICULUM VITAE

Dr. David Barry Hoare

B.Sc. (Hons), M.Sc., Ph.D., Pr.Nat.Sci. (Ecology, Botany), SAIE&ES (Professional member: Botany, Ecology), IAVS

Contact details

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Personal information

Date of birth: 04 November 1966, Grahamstown, South Africa
Citizenship: Republic of South Africa
ID no.: 661104 5024 088

Education

Matric - Graeme College, Grahamstown, 1984
B.Sc (majors: Botany, Zoology) - Rhodes University, 1991-1993
B.Sc (Hons) (Botany) - Rhodes University, 1994 with distinction
M.Sc (Botany) - University of Pretoria, 1995-1997 with distinction
PhD (Botany) - Nelson Mandela Metropolitan University, Port Elizabeth

Main areas of specialisation

- Vegetation ecology, primarily in grasslands, thicket, coastal systems, wetlands
- Plant biodiversity and threatened species specialist
- Remote sensing, analysis and mapping of vegetation
- Specialist consultant for environmental management projects

Membership

Professional Natural Scientist, South African Council for Natural Scientific Professions, 16 August 2005 – present. Reg. no. 400221/05 (Ecology, Botany)
Professional member: South African Institute of Ecologists and Environmental Scientists, 10 July 2001 – present. Categories: Botany, Ecology
Member, International Association of Vegetation Scientists

Employment history

1 February 1998 – 30 November 2004, Researcher, Agricultural Research Council, Range and Forage Institute, Private Bag X05, Lynn East, 0039. Duties: project management, general vegetation ecology, remote sensing image processing.
1 December 2004 – present, Member, David Hoare Consulting cc no. 2001/034446/23. Consultant, specialist consultant contracted to a number of existing companies and organisations.
1 January 2009 – 30 June 2009, Lecturer, University of Pretoria, Botany Dept.

Experience as consultant

Ecological consultant since 1995. Author of over 320 specialist ecological consulting reports. Wide experience in ecological studies within grassland, savanna and fynbos, as well as riparian, coastal and wetland vegetation.

Publication record:

Refereed scientific articles (in chronological order):

Journal articles:

HOARE, D.B. & BREDEKAMP, G.J. 1999. Grassland communities of the Amatola / Winterberg mountain region of the Eastern Cape, South Africa. *South African Journal of Botany* 64: 44-61.

- HOARE, D.B.**, VICTOR, J.E., LUBKE, R.A. & MUCINA, L., 2000. Vegetation of the coastal fynbos and rocky headlands south of George, South Africa. *Bothalia* 30: 87-96.
- VICTOR, J.E., **HOARE, D.B.** & LUBKE, R.A., 2000. Checklist of plant species of the coastal fynbos and rocky headlands south of George, South Africa. *Bothalia* 30: 97-101.
- MUCINA, L, BREDEKAMP, G.J., **HOARE, D.B** & MCDONALD, D.J. 2000. A National Vegetation Database for South Africa *South African Journal of Science* 96: 1-2.
- HOARE, D.B.** & BREDEKAMP, G.J. 2001. Syntaxonomy and environmental gradients of the grasslands of the Stormberg / Drakensberg mountain region of the Eastern Cape, South Africa.. *South African Journal of Botany* 67: 595 – 608.
- LUBKE, R.A., **HOARE, D.B.**, VICTOR, J.E. & KETELAAR, R. 2003. The vegetation of the habitat of the Brenton blue butterfly, *Orachrysops niobe* (Trimen), in the Western Cape, South Africa. *South African Journal of Science* 99: 201–206.
- HOARE, D.B** & FROST, P. 2004. Phenological classification of natural vegetation in southern Africa using AVHRR vegetation index data. *Applied Vegetation Science* 7: 19-28.
- FOX, S.C., HOFFMANN, M.T. and HOARE, D. 2005. The phenological pattern of vegetation in Namaqualand, South Africa and its climatic correlates using NOAA-AVHRR NDVI data. *South African Geographic Journal*, 87: 85–94.

Book chapters and conference proceedings:

- HOARE, D.B.** 2002. Biodiversity and performance of grassland ecosystems in communal and commercial farming systems in South Africa. Proceedings of the FAO's Biodiversity and Ecosystem Approach in Agriculture, Forestry and Fisheries Event: 12–13 October, 2002. Food and Agriculture Organisation of the United Nations, Viale delle Terme di Caracalla, Rome, Italy. pp. 10 - 27.
- STEENKAMP, Y., VAN WYK, A.E., VICTOR, J.E., **HOARE, D.B.**, DOLD, A.P., SMITH, G.F. & COWLING, R.M. 2005. Maputaland-Pondoland-Albany Hotspot. In: Mittermeier, R.A., Gil, P.R., Hoffmann, M., Pilgrim, J., Brooks, T., Mittermeier, C.G., Lamoreux, J. & Fonseca, G.A.B. da (eds.) *Hotspots revisited*. CEMEX, pp.218–229. ISBN 968-6397-77-9
- STEENKAMP, Y., VAN WYK, A.E., VICTOR, J.E., **HOARE, D.B.**, DOLD, A.P., SMITH, G.F. & COWLING, R.M. 2005. Maputaland-Pondoland-Albany Hotspot. <http://www.biodiversityhotspots.org/xp/hotspots/maputaland/>.
- HOARE, D.B.**, MUCINA, L., RUTHERFORD, M.C., VLOK, J., EUSTON-BROWN, D., PALMER, A.R., POWRIE, L.W., LECHMERE-OERTEL, R.G., PROCHES, S.M., DOLD, T. and WARD, R.A. *Albany Thickets*. in Mucina, L. and Rutherford, M.C. (eds.) 2006. The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19, South African National Biodiversity Institute, Pretoria.
- MUCINA, L., **HOARE, D.B.**, LÖTTER, M.C., DU PREEZ, P.J., RUTHERFORD, M.C., SCOTT-SHAW, C.R., BREDEKAMP, G.J., POWRIE, L.W., SCOTT, L., CAMP, K.G.T., CILLIERS, S.S., BEZUIDENHOUT, H., MOSTERT, T.H., SIEBERT, S.J., WINTER, P.J.D., BURROWS, J.E., DOBSON, L., WARD, R.A., STALMANS, M., OLIVER, E.G.H., SIEBERT, F., SCHMIDT, E., KOBISI, K., KOSE, L. 2006. *Grassland Biome*. In: Mucina, L. & Rutherford, M.C. (eds.) The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.
- RUTHERFORD, M.C., MUCINA, L., LÖTTER, M.C., BREDEKAMP, G.J., SMIT, J.H.L., SCOTT-SHAW, C.R., **HOARE, D.B.**, GOODMAN, P.S., BEZUIDENHOUT, H., SCOTT, L. & ELLIS, F., POWRIE, L.W., SIEBERT, F., MOSTERT, T.H., HENNING, B.J., VENTER, C.E., CAMP, K.G.T., SIEBERT, S.J., MATTHEWS, W.S., BURROWS, J.E., DOBSON, L., VAN ROOYEN, N., SCHMIDT, E., WINTER, P.J.D., DU PREEZ, P.J., WARD, R.A., WILLIAMSON, S. and HURTER, P.J.H. 2006. *Savanna Biome*. In: Mucina, L. & Rutherford, M.C. (eds.) The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.
- MUCINA, L., RUTHERFORD, M.C., PALMER, A.R., MILTON, S.J., SCOTT, L., VAN DER MERWE, B., **HOARE, D.B.**, BEZUIDENHOUT, H., VLOK, J.H.J., EUSTON-BROWN, D.I.W., POWRIE, L.W. & DOLD, A.P. 2006. *Nama-Karoo Biome*. In: Mucina, L. & Rutherford, M.C. (eds.) The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.
- MUCINA, L., SCOTT-SHAW, C.R., RUTHERFORD, M.C., CAMP, K.G.T., MATTHEWS, W.S., POWRIE, L.W. and **HOARE, D.B.** 2006. *Indian Ocean Coastal Belt*. In: Mucina, L. & Rutherford, M.C. (eds.) The vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.

Conference Presentations:

- HOARE, D.B. & LUBKE, R.A. *Management effects on diversity at Goukamma Nature Reserve, Southern Cape*; Paper presentation, Fynbos Forum, Bienne Donne, July 1994
- HOARE, D.B., VICTOR, J.E. & LUBKE, R.A. *Description of the coastal fynbos south of George, southern Cape*; Paper presentation, Fynbos Forum, Bienne Donne, July 1994
- HOARE, D.B. & LUBKE, R.A. *Management effects on fynbos diversity at Goukamma Nature Reserve, Southern Cape*; Paper presentation, South African Association of Botanists Annual Congress, Bloemfontein, January 1995
- HOARE, D.B. & BOTHA, C.E.J. *Anatomy and ecophysiology of the dunegrass Ehrharta villosa var. maxima*; Poster presentation, South African Association of Botanists Annual Congress, Bloemfontein, January 1995
- HOARE, D.B., PALMER, A.R. & BREDENKAMP, G.J. 1996. *Modelling grassland community distributions in the Eastern Cape using annual rainfall and elevation*; Poster presentation, South African Association of Botanists Annual Congress, Stellenbosch, January 1996
- HOARE, D.B. *Modelling vegetation on a past climate as a test for palaeontological hypotheses on vegetation distributions*; Paper presentation, Randse Afrikaanse Universiteit postgraduate symposium, 1997
- HOARE, D.B., VICTOR, J.E. & BREDENKAMP, G.J. *Historical and ecological links between grassy fynbos and afro-montane fynbos in the Eastern Cape*; Paper presentation, South African Association of Botanists Annual Congress, Cape Town, January 1998
- LUBKE, R.A., HOARE, D.B., VICTOR, J.E. & KETELAAR, R. *The habitat of the Brenton Blue Butterfly*. Paper presentation, South African Association of Botanists Annual Congress, Cape Town, January 1998
- HOARE, D.B. & PANAGOS, M.D. *Satellite stratification of vegetation – structure or floristic composition?* Poster presentation at the 34th Annual Congress of the Grassland Society of South Africa, Warmbaths, 1-4 February 1999.
- HOARE, D.B. & WESSELS, K. *Conservation status and threats to grasslands of the northern regions of South Africa*, Poster presentation at the South African Association of Botanists Annual Congress, Potchefstroom, January 2000.
- HOARE, D.B. *Phenological dynamics of Eastern Cape vegetation*. Oral paper presentation at the South African Association of Botanists Annual Congress, Grahamstown, January 2002.
- HOARE, D.B., MUCINA, L., VAN DER MERWE, J.P.H. & PALMER, A.R. *Classification and digital mapping of grasslands of the Eastern Cape* Poster presentation at the South African Association of Botanists Annual Congress, Grahamstown, January 2002.
- HOARE, D.B. *Deriving phenological variables for Eastern Cape vegetation using satellite data* Poster presentation at the South African Association of Botanists Annual Congress, Grahamstown, January 2002.
- MUCINA, L., RUTHERFORD, M.C., HOARE, D.B. & POWRIE, L.W. 2003. *VegMap: The new vegetation map of South Africa, Lesotho and Swaziland*. In: Pedrotti, F. (ed.) *Abstracts: Water Resources and Vegetation, 46th Symposium of the International Association for Vegetation Science*, June 8 to 14 – Napoli, Italy.
- HOARE, D.B. 2003. *Species diversity patterns in moist temperate grasslands of South Africa*. Proceedings of the VIIth International Rangeland Congress, 26 July – 1 August 2003, Durban South Africa. *African Journal of Range and Forage Science*. 20: 84.

Unpublished technical reports:

- PALMER, A.R., HOARE, D.B. & HINTSA, M.D., 1999. *Using satellite imagery to map veld condition in Mpumalanga: A preliminary report*. Report to the National Department of Agriculture (Directorate Resource Conservation). ARC Range and Forage Institute, Grahamstown.
- HOARE, D.B. 1999. *The classification and mapping of the savanna biome of South Africa: methodology for mapping the vegetation communities of the South African savanna at a scale of 1:250 000*. Report to the National Department of Agriculture (Directorate Resource Conservation). ARC Range and Forage Institute, Pretoria.
- HOARE, D.B. 1999. *The classification and mapping of the savanna biome of South Africa: size and coverage of field data that exists on the database of vegetation data for South African savanna*. Report to the National Department of Agriculture (Directorate Resource Conservation). ARC Range and Forage Institute, Pretoria.
- THOMPSON, M.W., VAN DEN BERG, H.M., NEWBY, T.S. & HOARE, D.B. 2001. *Guideline procedures for national land-cover mapping and change monitoring*. Report no. ENV/P/C 2001-006 produced for Department of Water Affairs and Forestry, National Department of Agriculture and

- Department of Environment Affairs and Tourism. Copyright: Council for Scientific and Industrial Research (CSIR) and Agricultural Research Council (ARC).
- HOARE, D.B. 2003. Natural resource survey of node O R Tambo, using remote sensing techniques, Unpublished report and database of field data for ARC Institute for Soil, Climate & Water, ARC Range and Forage Institute, Grahamstown.
- HOARE, D.B. 2003. Short-term changes in vegetation of Suikerbosrand Nature Reserve, South Africa, on the basis of resampled vegetation sites. Gauteng Department of Agriculture, Conservation, Environment and Land Affairs, Conservation Division.
- BRITTON, D., SILBERBAUER, L., ROBERTSON, H., LUBKE, R., HOARE, D., VICTOR, J., EDGE, D. & BALL, J. 1997. The Life-history, ecology and conservation of the Brenton Blue Butterfly (*Orachrysops niobe*) (Trimen)(*Lycaenidea*) at Brenton-on-Sea. Unpublished report for the Endangered Wildlife Trust of Southern Africa, Johannesburg. 38pp.
- HOARE, D.B., VICTOR, J.E. & MARNEWIC, G. 2005. Vegetation and flora of the wetlands of Nylsvley River catchment as component of a project to develop a framework for the sustainable management of wetlands in Limpopo Province.

Consulting reports:

Total of over 320 specialist consulting reports for various environmental projects from 1995 – 2010.

Workshops / symposia attended:

- Workshop on remote sensing of rangelands presented by Paul Tueller, University of Nevada Reno, USA, VIIth International Rangeland Congress, 26 July – 1 August 2003, Durban South Africa.
- VIIth International Rangeland Congress, 26 July – 1 August 2003, Durban South Africa.
- BioMap workshop, Stellenbosch, March 2002 to develop strategies for studying vegetation dynamics of Namaqualand using remote sensing techniques
- South African Association of Botanists Annual Congress, Grahamstown, January 2002.
- 28th International Symposium on Remote Sensing of Environment, Somerset West, 27-31 March 2000.
- Workshop on Vegetation Structural Characterisation: Tree Cover, Height and Biomass, 28th International Symposium on Remote Sensing of Environment, Strand, 26 March 2000.
- South African Association of Botanists Annual Congress, Potchefstroom, January 2000
- National Botanical Institute Vegmap Workshop, Kirstenbosch, Cape Town, 30 September-1 October 1999.
- Sustainable Land Management – Guidelines for Impact Monitoring, Orientation Workshop: Sharing Impact Monitoring Experience, Zithabiseni, 27-29 September 1999.
- WWF Macro Economic Reforms and Sustainable Development in Southern Africa, Environmental Economic Training Workshop, development Bank, Midrand, 13-14 September 1999.
- 34th Annual Congress of the Grassland Society of South Africa, Warmbaths, 1-4 February 1999
- Expert Workshop on National Indicators of Environmental Sustainable Development, Dept. of Environmental Affairs and Tourism, Roodevallei Country Lodge, Roodeplaat Dam, Pretoria, 20-21 October 1998.
- South African Association of Botanists Annual Congress, Cape Town, January 1998
- Randse Afrikaanse Universiteit postgraduate symposium, 1997.
- South African Association of Botanists Annual Congress, Bloemfontein, January 1995.

Referees:

- Michele Pfab, Scientific Co-ordinator: Scientific Authority, Applied Biodiversity Research, South African National Biodiversity Institute, (012) 843 5025, **E-mail:** M.Pfab@sanbi.org.za
- Prof. Roy Lubke, Botany Department, Rhodes University, Grahamstown 6140 Tel: 0461-318 592. E-mail: r.lubke@ru.ac.za
- Prof. Richard Cowling, Botany Department, Nelson Mandela Metropolitan University, Tel (042) 298 0259 E-mail: rmc@kingsley.co.za

Name	Stephan Hendrik Jacobs
Profession	Environmentalist
Name of Firm	SiVEST SA (Pty) Ltd
Present Appointment	Graduate Environmental Consultant
Years with Firm	Joined May 2015
Date of Birth	28 May 1991
ID Number	9105285065080
Nationality	South African



Education

Pretoria Boys High, Pretoria, South Africa, Matriculated 2009.

Professional Qualification

- BSc Hons Environmental Management and Analysis, (Post Graduate) University Of Pretoria Honours (2014).
- BSc Environmental Sciences (Undergraduate) University Of Pretoria (2012-2013)

Employment Record

May 2015 – current	SiVEST SA (Pty) Ltd – Graduate Environmental Consultant
Nov 2014 – Feb 2015	Sodwana Bay Fishing Charters – Assistant Manager
Oct 2014 – Mar 2015	Ufudu Turtle Tours – Tour Guide

Language Proficiency

LANGUAGE	SPEAK	READ	WRITE
English	Excellent	Excellent	Excellent
Afrikaans	Good	Good	Good

Key Experience

Stephan joined SiVEST in May 2015 and holds the position of Graduate Environmental Consultant in the Johannesburg office.

Stephan specialises in the field of Environmental Management and has been involved in the compilation of Environmental Impact Assessments (EIAs) and Basic Assessments (BAs). Stephan has also assisted extensively in the undertaking of field work and the compilation of reports for specialist studies such as surface water and visual impact assessments. Stephan also has experience in Environmental Compliance and Auditing and has acted as an Environmental Control Officer (ECO) for several infrastructure projects.

Stephan has been educated and achieved his degrees (BSc and BSc Hons) at the University of Pretoria in Environmental Sciences (Environmental Management & Analysis).

Throughout his time at SiVEST, Stephan has acquired the following skills:

- Strong computer skills (Work, excel, powerpoint etc);
- Strong Proposal and report writing skills;
- Report compilation skills for Environmental Impact Assessments (EIAs) and Basic Assessments (BAs);

-
- Report compilation skills for Environmental Management Plans/Programmes (EMPr);
 - Compilation and conducting Visual Impact Assessments;
 - Assisting in Surface Water / Wetland Delineations and Assessments.

Key experience includes:

- Environmental Impact Assessment (EIA) of small, medium and large-scale infrastructure projects,
- Basic Assessment (BA), of small, medium and large-scale infrastructure projects,
- Environmental Management Plans (EMPr), of small, medium and large-scale infrastructure projects,
- Proposal and tender compilation,
- Environmental Compliance and Auditing (ECO);
- Various site inspections, and
- Visual Impact Assessments (Field work and report compilation).

Projects Experience

Stephan is responsible for the following activities: report writing, proposal writing, assisting in specialist surface water delineation and functional assessments, assisting in visual impact assessments and environmental compliance and auditing procedures. Current and completed projects / activities are outlined in detail below:

- Environmental Control Officer (ECO) for the Polokwane Integrated Rapid Public Transport System (IRPTS), Limpopo Province.
- Basic Assessment (BA) for the construction of a Non-Motorised Transport (NMT) Training and Recreational Park adjacent to the Peter Mokaba Stadium in Polokwane, Limpopo Province.
- Basic Assessment (BA) for the Proposed Expansion of the Tissue Manufacturing Capacity at the Twinsaver Kliprivier Operations Base, Gauteng Province.
- Environmental Control Officer (ECO) for Phase 1 and Phase 2 of the Newmarket Retail Development, Gauteng Province.
- Environmental Review of the Xakwa Coal Operations, adjacent to the proposed Eastside Junction Development.
- Environmental Due Diligence for the Woodlands and Harrowdene Office Parks in Woodmead, Gauteng Province.
- Visual Impact Assessment for the Helena Solar PV Plant, Northern Cape Province.
- Visual Impact Assessment for the Nsoko Msele Integrated Sugar Project, Swaziland.
- Visual Impact Assessments for the proposed construction of the Sendawo Solar 1, Sendawo Solar 2 and Sendawo Solar 3 Photovoltaic (PV) Energy Facilities near Vryburg, North West Province.
- Visual Impact Assessments for the proposed construction of the Sendawo Substation and Associated 400kV Power Line near Vryburg, North West Province.
- Visual Impact Assessments for the proposed construction of the Tlisitseng Solar 1 and Tlisitseng Solar 2 Photovoltaic (PV) Energy Facilities near Lichtenburg, North West Province.
- Visual Impact Assessment for the proposed construction of the 3000MW PhilCo Green Energy Wind Farm and Associated Infrastructure near Richmond, Northern Cape Province.

- Visual Impact Assessment for the proposed construction of the Aletta 140MW Wind Energy Facility neat Copperton, Northern Cape Province.
- Visual Impact Assessment for the proposed construction of the Eureka 140MW Wind Energy Facility and associated Infrastructure near Copperton, Northern Cape Province.
- Visual Impact Assessment for the proposed construction of the Eureka 400kV Substation and 400kV Power Line neat Copperton, Northern Cape Province.
- Basic Visual Impact Assessments for the proposed construction of the Tlisitseng 1 and Tlisitseng 2 Substations and Associated 132kV Power Lines near Lichtenburg, North West Province.
- Basic Visual Impact Assessment for the proposed construction of up to a 132kV Power Line and Associated Infrastructure for the Rooipunt Solar Thermal Power Plant near Upington, Northern Cape Province.
- Basic Visual Impact Assessment for the proposed construction of up to a 132kV Power Line and Associated Infrastructure for the proposed Kalkaar Solar Thermal Power Plant near Kimberly, Free State and Northern Cape Provinces.
- Surface Water Assessment for the Steve Thswete Local Municipality, Mpumalanga Province.
- Surface Water Delineation and Assessment for the proposed coal Railway Siding at the Welgedacht Marshalling Yard and associated Milner Road Upgrade near Springs, Ekurhuleni Metropolitan Municipality.

Curriculum Vitae: **Michiel Jonker**

Name:	Michiel Jonker	Marital status:	Single
Date of birth:	25/05/1984	Driver's license:	Code 8
ID No.:	840525 5110 085	Contact No:	084 585 7479
Place of birth:	Johannesburg, South Africa	Email:	michiel@ecotone-sa.co.za
Postal address:	PO Box 84 Florida, Johannesburg, South Africa, 1710		
Experience:	10 Years		

Education

University of Johannesburg

2011 **M. Sc (Environmental Management)**

This is a lectured Masters degree focussing on the concepts and principles of environmental management. The MSc. includes three modules: (1) Environmental management, biosphere and the environment. (2) Environmental management skills and (3) A mini dissertation in related field works.

2009 **M.Sc (Aquatic Health) *cum laude***

This Masters study has an ecotoxicological basis. It deals with the effects of androgenic and estrogenic growth-promoting hormones, used in cattle feeding lots, on aquatic freshwater ecosystems. It aims to incorporate biomarkers in fish (metabolomics and cellular energy allocation) as well as studies of general water quality, sediment composition and invertebrate community structures

2006 **B.Sc Honours (Zoology) *cum laude***

Related course work: Laboratory and field skills, Philosophy and research methodology, population genetics, project management, mammal diversity, eco-physiology, parasite ecology, ichthyology, research project, biological systems integrity, terrestrial ecology, nature conservation.

2005 **B.Sc (Natural and Environmental Sciences)**

Majors: Geography and Zoology

Minors: Environmental management, botany, chemistry, environmental chemistry, biogeochemistry, statistics, information science

Related course work: Cartography, biogeography, soil science, climatology and geomorphology, economic and urban geography, GIS, Geography of Africa and South Africa, invertebrate and vertebrate diversity, parasitology, ecotoxicology, terrestrial ecology and limnology, animal physiology, economic and ethno-botany, plant diversity, plant-water relations, organic and physical chemistry.

Employment and Work Experience

Feb '08 – Pres **Ecotone Freshwater Consultants CC**
Member and Freshwater Ecologist

Recent projects:

- **SMD / EIMS** aquatic ecology and impact assessment - Scoping and EIA/EMP Report for the proposed expansion of the Kao Diamond Mine, Lesotho (May 2016).
- **Vaalbult Colliery** aquatic specialist assessment, proposed road crossing, Carolina, Mpumalanga (February 2016 – Present).
- **EkolInfo** aquatic biomonitoring plan and implementation for the Elands River associated with the Maseve mining operations near Sun City, in the North West Province, (January 2016- present).
- **Exxaro**, Zonderwater Coal Proposal, Wetland Specialist Assessment (November 2013 – Present).
- **Dyambyini** wetland and aquatic ecology assessment, management and biomonitoring plan for Water Use Licence Authorisation for the Proposed expansion of the Hendrina Ash Disposal Facility and related Power Line infrastructure (March 2016).
- **Delta Mining** wetland assessment and watercourse management plan for mining operations associated with the Proposed Rietkuil operations. Rietkuil, Delmas, Mpumalanga (February 2016).
- **SLR Consulting-** Biodiversity assessment, management and biomonitoring plan for the proposed expansion of the Holfontein Toxic Waste Disposal Facility, Gauteng (January 2016).
- **Envirolutions (Eskom)** Pre-, during- and post construction biomonitoring for pylon constructions crossing smaller tributaries of the Vaal River, Vereeniging, Gauteng (January 2015- present).
- **WPC** Ngonye Falls- 52 MW Hydroelectric Power Plant. Baseline biodiversity study and Environmental Flow Assessment, Zambia (October 2015 to present).
- **Ara-sul** Aquatic baseline assessment of the Sabie River, up- and downstream of Corumana Dam, Kruger National Park and Mozambique (November 2015 to January 2016).
- **EcoGain** Wetland and Impact assessment associated with the proposed Opencast Mining Operation, Delmas (October 2015 to present).
- **Envirolutions** Water quality Assessment, Broadacres Retirement Village, Broadacres Gauteng Province (November 2015).
- **ERM, Ncondezi Coal Mine**, Freshwater Ecology baseline study and Desktop Environmental Flow Assessment, Tete, Mozambique (November 2014 – May 2015).
- Hydrological Alteration-Aquatic Ecology Assessment-**New Largo** (July 2010 - Present).
- **Goliath Gold** Aquatic and impact assessment associated with the proposed de-water of a mine shaft, Heidelberg, Gauteng (January – May 2015).
- **Zambezi River Authority**, Kariba Dam wall upgrade, Freshwater Ecology baseline, impact assessment and Environmental Flow Assessment, Zambia/Zimbabwe (October 2014 - March 2015)
- **Dyambyini, Majuba Power Station**, Wetland Specialist Assessment (December - January 2015).
- **Doogvallei Rail Siding Company (Pty) Ltd**, Aquatic Biomonitoring Assessment of associated drainage lines, Carolina Mpumalanga (September 2012 – January 2015).
- **Pembani Coal**: Aquatic Biomonitoring Assessment, Carolina (March 2012 –January 2015).
- **Kumba Iron Ore**, Wetland and River study for WULa, Thabazimbi, Limpopo (December 2014).

- **FFMES, Cominco Phosphate Mine**, Hinda Project Freshwater Baseline Study and critical habitat assessment, Republic of Congo (March to August 2014).
- **Lidwala**, Majuba Wetland Rehabilitation Proposal, Wetland Specialist Assessment (March-July 2014).
- **Imperata**, NKP Terminal 2, Wetland Monitoring Assessment (June – July 2014).
- **Jeffars and Green**, Thabong Interchange, Wetland Rehabilitation Plan (June 2014).
- **Envirobility**, Sand Quarry, Diepsloot, Wetland Specialist Assessment (March 2014 – May 2014).
- **Lidwala, Majuba** Wetland Assessment Augmentation, Wetland Specialist Assessment (April 2014).
- **WSP, Kathu CSP Project**, Northern Cape, Wetland Specialist Assessment (January 2014 – April 2014).
- **ERM, Mulungushi Hydropower Project**, Aquatic Specialist (February, 2013).
- **ERM, Muchinga Hydropower Stations**, Aquatic Specialist, Zambia (April, 2013).
- **FFMES, Exxaro DMC Iron Congo Project**, Aquatic specialist study, Mayoko, Republic of Congo (September 2012).
- **ERM**, Sasol Twistdraai Export Plant, Wetland Specialist Assessment (November 2013 – May 2014).
- **GladAfrica, Centurion Lake Sediment Trap**, Aquatic Specialist Study, Gauteng, South Africa (November, 2012).
- **MSA, Meyerton Waste Water Treatment Works Upgrade**, Aquatic Specialist Study, Gauteng, South Africa (November 2012).
- **Eskom Majuba Ash Disposal Facility**, Wetland Specialist Study for the Scoping/EIA, Mpumalanga, South Africa (September, 2012).
- **Eskom Tutuka Ash Disposal Facility**, Wetland Specialist Study for the EIA, Mpumalanga, South Africa (September, 2012).
- **FFMES, Sintoukola Project**, Aquatic specialist study, Republic of Congo (May 2012; July 2012).
- **Coffey Environments, Tete Iron Project**, Aquatic specialist study of the Revuboe River, Chiúta and Moatize districts, Tete, Mozambique (March 2012).
- **Shanduka Coal**, wetland and impact assessment for a proposed 400kV line relocation, Middleburg, Mpumalanga (April, 2012).
- **Worldwide Coal Carolina**, aquatic biomonitoring assessment, Carolina, Mpumalanga (March, 2012).
- **Homeland Mining and Energy SA**, proposed Eloff Opencast Mine, specialist wetland assessment (\pm 1400 ha) just outside the town of Delmas, Mpumalanga (February, 2012).
- **Exxaro MagVanTi Project** -Aquatic Ecology Baseline Study, Limpopo (January, 2012).
- **Shanduka Coal**, wetland and impact assessment of a pan located in the Graspan Colliery, Middleburg, Mpumalanga (January, 2012).
- **African Barrick Gold North Mata Mine** - Aquatic Consultant: Ecotoxicological risk assessment for discharge of treated waste water into the Mara River, North Mara, Tanzania (August, 2011).
- **Moamba Dam Project, Moamba, Mozambique**, Aquatic Consultant- Impacto: Aquatic ecology assessment for proposed (July, 2011).
- Fresh water Ecology **scoping study-Hendrina-Mpumalanga**(May 2011)
- Aquatic Biomonitoring Assessment-Blesbokspruit- **Hydro Testing** (May 2011)
- Aquatic Consultant- Lidwala environmental and engineering consultants: Sanral N14 river/stream crossing aquatic assessment (May 2011).
- Aquatic Consultant- Randwater: Proposed water and treated water residue pipeline near **Lethabo power station** in Vereeniging (May 2011).
- Aquatic Consultant- Anglo Coal: Assessment on non-perennial drainage lines associated with proposed coal mining development near All days in Limpopo (May, 2011).

- Hydro Testing Biomonitoring(KP290+100) **KwaZulu-Natal- Aquatic Ecology Assessment** (February 2011)
- Aquatic Consultant- Riversdale: Aquatic specialists on the **Benga Coal Project**, Tete, Mozambique (January, 2011).
- Aquatic Consultant- Transnet: Aquatic biomonitoring - **Ladysmith pump station oil spill**, Ladysmith, Natal (January, 2011).
- Aquatic Consultant – Imperata – Aquatic assessment for a proposed **Rand Water pipeline** crossing over the Pienaars River near Pretoria (May, 2010).
- Aquatic Consultant – Ekoinfo – Aquatic assessment for a **NuCoal mine** (Vuna colliery) near Middelburg Mpumalanga (March 2010- Current)
- Aquatic Consultant – EcoAgent – A MSA project – Detailed Aquatic assessment for the proposed **Veremo Magnetite mine** in the Eastern Bushveld near Stofberg Mpumalanga (May 2010)
- Aquatic Consultant – New Multi Purpose Pipeline (NMPP) a combined Transnet, **Group Five and Spiecapag project** –Aquatic assessment and monitoring of associated river crossings in the Upper Vaal, Thukela and Mvoti Water Management Areas (October 2009- Current).
- Aquatic Consultant – **Intergraded Landscape Architects** – Raslouw Riparian delineation and aquatic assessment, Johannesburg (November 2009).
- Aquatic Consultant – Ekoinfo – **Klipriviersberg** Full Aquatic assessment (January, 2009)
- Aquatic Consultant – Ekoinfo – **Lonmin** Aquatic biodiversity assessment (January 2009).
- Aquatic Consultant – NSS– Optimum **Coal Fish** diversity assessment (March 2009)
- Aquatic Consultant –NSS – **Rio Tinto Chapudi** proposed coal mine diversity assessment (March 2009).
- Aquatic Consultant – **Lonmin platinum**- aquatic biodiversity assessment and action plan (January, 2009).
- Aquatic Consultant – **SASOL** – aquatic ecosystem impact assessment for proposed pipeline development (January 2009).
- Aquatic Consultant – Arcus Gibb - Aquatic biodiversity assessment for proposed coal **Eskom Mulilo coal mining development** (December 2008).
- Aquatic Consultant – **ESKOM** - Biomonitoring for proposed **Majuba railroad construction** for Eskom (October 2008- current).

Feb 07 – Jan 08

**EnviRoss Environmental Scientific Consultants Cc
Consultant**

- Junior Scientist – Enviross cc - Aquatic macro-invertebrate biodiversity study for proposed feedlot **Mpumalanga** 2007. (November 2007)
- Junior Scientist – Enviross cc - **Tshwane** sewerage works bio-monitoring. (September 2007).
- Junior Scientist – Econ@uj - Ecological state of five estuaries in the **Wild coast** for proposed heavy mineral mining (October 2007).
- Aquatic Consultant – Ekoinfo - Aquatic ecological assessment for proposed golf course development in **North West province for Sun City** (August 2007).
- Junior Scientist – Enviross cc - Firgrove industrial development in **Somerset West** 2007 (July 2007) 2007.
- Junior Scientist – Enviross cc - Aquatic health determination and eco-classification for **ANGLO coal** (Mpumalanga) in 2007 (2007).
- Junior Scientist – Econ@uj - Aquatic health determination and eco-classification for **TOTAL coal** in 2006 (May 2006).
- Junior Scientist – Econ@uj - Aquatic health and fish diversity assessment at **Klipplaat nature reserve**, 2006 (September 2006).

- Technical Assistant - **University of Johannesburg Zoology department** - Aquatic health and biodiversity of the **Crocodile West Marico and Magaliesburg system**, 2007 (February 2007).
- Technical Assistant – Enviross cc - **Owl surveys** (March 2007).
- Project Manager - University of Johannesburg Zoology department - Aquatic health and biodiversity of **lake Chrissie in Mpumalanga**, 2007 (April 2007)
- Technical Assistant - University of Johannesburg Zoology department - PhD study regarding effects of pesticides on the freshwater aquatic health in the **Levubu River in Venda (Limpopo Province)** (February 2008)
- Researcher - University of Johannesburg Zoology department - Presented poster at Zoological society South Africa (ZSSA) in July 2007: Abiotic factors influencing invertebrate community structures in pan and dams in the **Mpumalanga highveld area** (June 2007)

Workshops and Courses

2011	Tools for Wetland Assessment Short Course Department of Environmental Science Rhodes University; Grahamstown Port Elizabeth
2009	Environmental Management Systems –WTH Management and Training ISO 14001, OHSAS 18001 and development of Environmental Management Systems, University of Johannesburg, Auckland Park, Johannesburg
2008	Wetland and Riparian Delineation Course Accredited wetland delineator Wetland Consulting Services and Department of Water Affairs and Forestry (DWAFF) Pretoria, South Africa.
2008	Skippers Course License Holder of a Category “R” skippers license
2007	SASS5 Accredited Practitioner Auditors: Christa Thirion (DWAFF, RQS), Colleen Todd (DWAFF, RQS) and Hermien Roux (North West Nature Conservation).
2007	Multivariate Statistics Training Collaboration between Wageningen University (Holland) and University of Johannesburg, UJ Eiland, Vaal Dam
2006	Advanced 4x4 driving course

Societies and Accreditations

2009	The South African Council for Natural Scientific Professions (SACNASP) Professional Natural Scientist <i>Pr. Sci. Nat.</i> (Aquatic Health, Zoological & Ecological Sciences) Registration number: 400275/12
2009	Member of the International Association of Impact Assessment-SA (IAIA SA).

- 2006 **Member of the Zoological Society of Southern Africa (ZSSA)**
- 2006 **Member of the Southern African Society of Aquatic Scientists (SASAqS)**

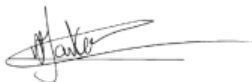
Presentations

- Jun 2010** **South African Society of Aquatic Scientists (SASAqS) Congress**
MN Jonker, G. Walsh & JHJ van Vuren
Creating Management Thresholds for Fish Communities Exposed to the Effects of Coal Mining in the Mpumalanga Highveld.
- Oct 2009** **Department of Geography and Energy studies, University of Johannesburg**
MN Jonker, M Sherwood and R Rowles. 2009.
Historical overview of water quality associated with the Blesbokspruit RAMSAR site. Syndicate project completed in partial fulfillment of M.Sc (Environmental Management).
- Jul 2007** **Zoological Society of Southern Africa Conference, Potchefstroom.**
MN Jonker
Differences in invertebrate community structures associated with pans and dams in the Mpumalanga Highveld, South Africa.

Publications

1. Van der Zee, J., Walsh, G., Sonnenberg, R., Alexandre, M. & Jonker, M.N. (*in press*). A description of three new co-occurring *Aphyosemion* species (Cyprinodontiformes: Nothobranchiidae) from Lower Guinea, with notes on habitat partitioning and allopatric speciation. *Zootaxa*.
2. Walsh, G., Jonker, M. & Mamonekene, V. (2014). A collection of fishes from tributaries of the lower Kouilou, Noubi and smaller coastal basin systems, Republic of the Congo, Lower Guinea, west-central Africa.
Checklist Journal **10 (4)**: 900 - 912.
3. Jonker, M.N., Van Vuren, J.H.J & Wepener, V. (2009). The impact of feedlot effluent on water quality and aquatic macroinvertebrate community structure in streams of the upper Vaal River catchment, South Africa. *African Journal of Aquatic Science* **34 (3)**.
4. De Jager, C., Swemmer, A., Aneck-Hahn, N.H., van Zijl, C., van Wyk, S., Bornman, M.S., Barnhoorn, I.E.J., Jonker M., van Vuren, J.H.J. & Burger, A.E.C. (2010). Endocrine Disrupting Chemical (EDC) Activity and Health Affects of Identified Veterinary Growth Stimulants in Surface and Ground Water. WRC report no. K5-1686. Pretoria, South Africa.

I, Michiel Jonker, do hereby declare that all the information furnished above is true to the best of my knowledge.



Michiel Jonker

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THANDUXOLO MSENGANA

Date of birth : 1986

QUALIFICATIONS AND MEMBERSHIPS OF INSTITUTIONS.

B.S.c.(Geol.) - University of Johannesburg

Member - SAIEG (application in progress)

POST GRADUATE CAREER

2011 - Present, Senior Engineering Geologist - Geopractica (Pty) Ltd

TYPICAL PROJECTS

- Field geologist, exploratory drilling supervision, core logging, and geotechnical investigation for RSV - Enco, Kangwane Anthracite Project, Mpumalanga, South Africa.
- Engineering geologist for onshore geotechnical investigation for Anadarko LNG project, Palma, Mozambique.
- Geotechnical investigations and borrow area search for Namoya Gold Project, DRC.
- Geotechnical investigation (Dolomitic area), risk assessment, geophysics survey, percussion proof drilling, liaison with CGS, report preparation - various sites such as Stilfontein liquid storage dam, Lufereing Substation, Esselenpark Substation, Khutsong Area .
- Geotechnical investigation (Auger holes) for proposed new Analytical Laboratory and Training Facilities, South Deep, Western areas, South Africa.
- Geotechnical investigation (Auger holes) for proposed new Edenvale Shopping Centre, South Deep, Western areas, South Africa.
- Geotechnical investigation for First Solar Photovoltaic Project, Aggeneys, Northern Cape.
- Geotechnical investigation for proposed new Solar Plant, Upington, South Africa.
- Geotechnical investigation for Mookadi Integration Project, Vryburg, South Africa.
- Geotechnical Investigation for Magalakwena North Concentrator, Mokopane
- Soil and rock study for numerous insurance claim on houses, factories & other structures
- Geotechnical assessment for proposed new Silo's and Fire Water Plant. Wadeville, Gauteng
- Geotechnical investigations for numerous jobs on the granitic rocks of the Basement Complex, Gauteng (collapsing & compressible horizons)
- Geotechnical investigation for Mine Infrastructure, Kinross, Mpumalanga
- Management of various geotechnical field operations such as Dynamic Probe Super Heavy, DTH vane shear testing, BH Permeability testing (falling & static head), Plate Load tests, Dynamic Cone testing, sinkhole closure, cavity drilling & grouting

CURRICULUM VITAE: D G Paterson

SURNAME: PATERSON
FIRST NAME(S): David Garry
KNOWN AS: Garry
DATE OF BIRTH: 25-08-1959 in Bellshill, Scotland
NATIONALITY: South African
I.D. No.: 5908255258088
LANGUAGE PROFICIENCY: English, Afrikaans (both fluent), French (poor)
MARITAL STATUS: Married, one son

ADDRESS: Institute for Soil, Climate and Water
Private Bag X79
Pretoria 0001
Republic of South Africa
TEL.: (012) 310 2601
083 556 2458
FAX: (012) 323 1157

E-MAIL ADDRESS: garry@arc.agric.za

ACADEMIC QUALIFICATIONS:

- Matriculated: 1976, Dalziel High School, Motherwell, Scotland
- BSc (Hons) Geography, 1980, University of Strathclyde, Glasgow, Scotland
- MSc (Soil Science) *cum laude*, 1998, University of Pretoria

PROFESSIONAL CAREER:

- 1981-1987: Soil Scientist: Soil and Irrigation Research Institute, Pretoria
- 1987-1992: Senior Soil Scientist: Soil and Irrigation Research Institute, Pretoria
- 1992-present: Senior Soil Scientist: ARC-Institute for Soil, Climate & Water

FIELDS OF SPECIALITY AND COMPETENCE:

- Soil classification and mapping
- Soil interpretations
- Soil survey project management
- Environmental assessment
- Soil survey and land capability course presentation
- Ground penetrating radar

PUBLICATIONS (see attached list):

- Three refereed articles (S.A. Journal of Plant and Soil)
- Nine Congress papers/posters
- S.A. Soil Classification (1991) (Member of working group)
- Seven 1:250 000 Land Type Maps
- Three Land Type Memoirs
- More than 200 soil survey reports and/or maps

COURSES COMPLETED:

- Course in Project Management (University of Stellenbosch)
- Course in Junior Personnel Management (Dept of Agriculture)
- Course in Handling of Grievances and Complaints (Dept of Agriculture)
- Course in Marketing (ARC-ISCW)
- Course in National Qualifications Framework Assessment, ARC-CO
- Training Course in Ground Penetrating Radar (GSSI, USA)
- Introduction to ArcGIS 8, GIMS, 2004

PROFESSIONAL STATUS:

- Registered Natural Scientist: Soil Science (SA National Council for Natural Scientific Professions) – registration number 400463/04
- Member of South African Soil Classification Working Group, 1990-present
- Convenor of South African Soil Classification Working Group, 2013-
- Member of Soil Science Society of South Africa (1982-present)
- President of Soil Science Society of South Africa (2005-2007)
- Member of South African Soil Survey Organisation (2000-present)
- Council Member of South African Soil Survey Organisation (2002-2003)
- Member of International Erosion Control Association
- Scientific Referee, S.A. Journal for Plant and Soil
- External Examiner, University of Pretoria, University of Witwatersrand, University of Venda

AWARDS:

Best article on Soil Science, South African Journal for Plant and Soil, 2011

MISCELLANEOUS:

- Editor, Soil Science Society newsletter, 1993-present
- Member, Clapham High School (Pretoria) Governing Body 1998-2002
- **Member, Northern Gauteng Football Referee's Association**
- Committee Member, Rosslyn Golf Club (Club Champion 2002 and 2007)

INTERESTS:

Sport, especially golf and soccer; wildlife; reading; music

REFEREES:

Mr T.E. Dohse, ARC-Institute for Soil, Climate and Water.
Tel: (012) 310-2504; 082 324 5389

Prof A.S. Claassens, Faculty of Plant Production and Soil Science, University of Pretoria
Tel: (012) 420-3213; 084 581 6488

Prof M.C. Laker (retired), (012) 361-2900; 082 785 5295

PUBLICATIONS LIST:

Refereed Articles:

BÜHMANN, C., KIRSTEN, W.F.A., PATERSON, D.G. & SOBCZYK, M.E., 1993. Pedogenic differences between two adjacent basalt-derived profiles. 1. Textural and chemical characteristics. *S. Afr. J. Plant & Soil*, 10: 155-161

BÜHMANN, C., KIRSTEN, W.F.A., PATERSON, D.G. & SOBCZYK, M.E., 1994. Pedogenic differences between two adjacent basalt-derived profiles. 2. Mineralogical characteristics. *S. Afr. J. Plant & Soil*, 11: 5-11

PATERSON, D.G. & LAKER, M.C., 1999. Using ground penetrating radar to investigate spoil layers in rehabilitated mine soils. *S. Afr. J. Plant & Soil*, 16:131-134.

PATERSON, D.G., BÜHMANN, C., PIENAAR, G.M.E. & BARNARD, R.O., 2011. Beneficial effect of palm geotextiles on inter-rill erosion in South African soils and mine dam tailings: a rainfall simulator study. *S. Afr. J. Plant & Soil*, 28: 181-189.

PATERSON, D.G. & BARNARD, R.O., 2011. Beneficial effect of palm geotextiles on inter-rill erosion in South African soils. *S. Afr. J. Plant & Soil*, 28: 190-197.

Books:

PATERSON, D.G. & MUSHIA, N.M., 2011. Soil databases in Africa. *In: Handbook of Soil Science (2nd Edn)*. Ed. M.E. Sumner. Taylor & Francis, Boca Raton FL.

SOIL CLASSIFICATION WORKING GROUP*, 1991. Soil classification. A taxonomic system for South Africa. Institute for Soil, Climate & Water, Pretoria.

* Co-author as member of Working Group

Thesis:

PATERSON, D.G., 1998. The use of ground penetrating radar to investigate subsurface features in selected South African soils. Unpublished M Sc Thesis, University of Pretoria.

Congress Papers:

PATERSON, D.G., 1987. The relationship between geology and soil type in the northern Kruger National Park. 14th Congress of the Soil Science Society of S.A. Nelspruit, 14-17 July 1987.

PATERSON, D.G., 1990. A study of black and red clay soils on basalt in the northern Kruger National Park. 16th Congress of the Soil Science Society of S.A. Pretoria, 9-12 July 1990.

PATERSON, D.G., 1992. The potential of ground penetrating radar as an aid to soil investigation. 17th Congress of the Soil Science Society of S.A. Stellenbosch, 28-30 Jan.1992.

PATERSON, D.G., 1995. The complex soil mantle of South Africa. ARC Wise Land Use Symposium, Pretoria, 26-27 Oct. 1995

PATERSON, D.G. & LAKER, M.C., 1998. Locating subsoil features with ground penetrating radar. 21st Congress of the Soil Science Society of S.A. Alpine Heath, 20-22 Jan. 1998.

PATERSON, D.G., 2000. Mapping rehabilitated coal mine soils in South Africa using ground penetrating radar. Eighth International Conference on Ground Penetrating Radar, Gold Coast, Australia, 23-26 May 2000.

PATERSON, D.G. & VAN DER WALT, M., 2003. The soils of South Africa from the Land Type Survey. 24th Congress of the Soil Science Society of S.A., Stellenbosch, 20-24 Jan. 2003

Land Type Maps:

PATERSON, D.G., 1990. 1:250 000 scale land type map 2230 Messina. Dept. Agriculture, Pretoria.

PATERSON, D.G. & HAARHOFF, D., 1989. 1:250 000 scale land type map 2326 Ellisras. Dept. Agriculture, Pretoria.

PATERSON, D.G., PLATH, B.L. & SMITH, H.W., 1987. 1:250 000 scale land type map 2428 Nylstroom. Dept. Agriculture, Pretoria.

PATERSON, D.G. & ROSS, P.G., 1989. 1:250 000 scale land type map 2330 Tzaneen. Dept. Agriculture, Pretoria.

PLATH, B.L. & PATERSON, D.G., 1987. 1:250 000 scale land type map 2426 Thabazimbi. Dept. Agriculture, Pretoria.

Land Type Memoirs:

PATERSON, D.G., PLATH, B.L. & SMITH, H.W., 1988. Field Investigation. In: *Land types of the maps 2426 Thabazimbi & 2428 Nylstroom. Mem. Agric. Nat. Res. S. Afr.* No. 10. Dept. Agriculture, Pretoria.

PATERSON, D.G., SCHOEMAN, J.L., TURNER, D.P., GEERS, B.C. & ROSS, P.G., 1989. Field Investigation. In: *Land types of the maps 2330 Tzaneen & 2430 Pilgrim's Rest. Mem. Agric. Nat. Res. S. Afr.* No. 12. Dept. Agriculture, Pretoria.

PATERSON, D.G., 1999. 1:250 000 land type survey of the former Ciskei (Unpublished). ISCW Report GW/A/99/24.

Also:

PATERSON, D.G., 1992. Ground penetrating radar applications in USA and South Africa. Report on an official study tour to USA, 13-29 July, 1991. ISCW Report GW/A/92/8

PATERSON, D.G., 2000. Report on official overseas visit to GPR2000 Conference, Broadbeach, Australia, 23-26 May, 2000. ISCW Report GW/A/2000/40

Plus ARC-ISCW Reports on:

- Ground penetrating radar investigations in: Kruger National Park; Enseleni, Natal; Weatherly, Maclear; Kleinkopje Mine

- Soil survey investigations at: Roodeplaat, Kathu, Steelpoort River, Palala River, Zeekoegat (Roodeplaat), Limpopo River, Lydenburg, Kendal, Clewer Sand (Witbank), Botha Sand (Witbank), Balmoral Colliery, Bafokeng (Rustenburg), Towoomba (Warmbaths), Hoefeld Stene (Middelburg), Quality Bricks (Witbank), Visagie Sand (Middelburg), Rosslyn, Coalbrook (Sasolburg), Stewart Coal (Delmas), Forzando Coal (Hendrina), Vaalgro (Vereeniging), Ratanda (Heidelberg), Elspark (Boksburg), Thorncliffe Mine (Steelpoort), Jan Smuts Quarry (Boksburg), Ennerdale (Phase I & II), Thokoza, North Riding, Natalspruit (Alberton), Arnot, Kroondal (Phase I & II), Ga-Rankuwa, Hartebeespoort Dam, Kosmos, Assen, Grasmere, Magalies Moot (Pretoria), Valpre (Paulpietersburg), Cargo Carriers (Sasolburg), Waterval (Rustenburg), Rayton, Bronkhorstspuit, Zwavelpoort (Pretoria), Pietersburg, Trojan Mine (Steelpoort), Platinum Highway (Rustenburg), Moutse, Centurion, Salique (Klaserie), Northam, Greenside Colliery (Witbank), South Deep Mine (Westonaria), Bank Colliery, Steelpoort Platinum, Gautrain Route (Pta/Jbg), Rietspruit Mine (Ogies), Potgietersrus Platinum, Atok Mine (Lebowa), Blue Ridge Mine (Groblersdal), Ngodwana, Estancia (Breyton), Twickenham Mine (Steelpoort), Marikana

Name	Kerry Lianne Schwartz
Profession	GIS Specialist
Name of Firm	SiVEST SA (Pty) Ltd
Present Appointment	Senior GIS Consultant: Environmental Division
Years with Firm	24 Years
Date of Birth	21 October 1960
ID No.	6010210231083
Nationality	South African



Professional Qualifications

BA (Geography), University of Leeds 1982

Employment Record

1994 – Present	SiVEST SA (Pty) Ltd - Environmental Division: GIS/Database Specialist.
1988 - 1994	SiVEST (formerly Scott Wilson Kirkpatrick): Town Planning Technician.
1984 – 1988	Development and Services Board, Pietermaritzburg: Town Planning Technician.

Language Proficiency

LANGUAGE	SPEAK	READ	WRITE
English	Fluent	Fluent	Fluent

Key Experience

Kerry is a GIS specialist with more than 20 years' experience in the application of GIS technology in various environmental, regional planning and infrastructural projects undertaken by SiVEST.

Kerry's GIS skills have been extensively utilised in projects throughout South Africa in other Southern African Countries. These projects have involved a range of GIS work, including:

- Design, compilation and management of a demographic, socio-economic, land use, environmental and infrastructural databases.
- Collection, collation and integration of data from a variety of sources for use on specific projects.
- Manipulation and interpretation of both spatial and alphanumeric data to provide meaningful inputs for a variety of projects.
- Production of thematic maps and graphics.
- Spatial analysis and 3D modelling, including visual and landscape assessments.

Projects Experience

STRATEGIC PLANNING PROJECTS

Provision of database, analysis and GIS mapping support for the following:

- Water Plan 2025: Socio-economic, Land Use and Demographic Update – Umgeni Water (KwaZulu-Natal).
- Eskom Strategic Plan – Eskom (KwaZulu-Natal).
- Umgeni Water Quality Management Plan – Department of Water Affairs and Umgeni Water (KwaZulu-Natal).
- KwaZulu-Natal Development Perspective – Department of Economic Affairs (KwaZulu-Natal).
- Indlovu Regional Integrated Plan – Department of Local Government and Housing (KwaZulu-Natal).
- Umgeni Water and Sanitation Needs Analysis – Umgeni Water (KwaZulu-Natal).
- Metro Waste Water Management Plan – Durban Waste Water management, City of Durban (KwaZulu-Natal).
- KwaZulu-Natal Electrification Prioritisation Model – Eskom (KwaZulu-Natal).
- Umzinyathi Regional Development Plan – Umzinyathi Regional Council (KwaZulu-Natal).
- GIS driven model to assess future population growth in quaternary catchments under different growth scenarios – Umgeni Water (KwaZulu-Natal).
- Ubombo Master Water Plan Study – Mhlathuze Water Board (KwaZulu-Natal).
- Development strategy for local economic development and social reconstruction of the Germiston-Daveyton Activity Corridor – Eastern Gauteng Services Council (Gauteng).
- Structure Plan for the Cities of Beira and Dondo in Mozambique – World Bank.
- Land identification study for low cost housing in the Indlovu Region – Indlovu Regional Council (KwaZulu-Natal).
- Local Development Plan for Manzini – Manzini Town Council (Swaziland).
- Indlovu Project Prioritisation Model – Indlovu Regional Council (KwaZulu-Natal).
- Structure Plans for the Cities of Ndola and Luanshya - Ministry of Local Government and Housing (Zambia).
- Database development for socio-economic and health indicators arising from Social Impact Assessments conducted for the Lesotho Highlands Development Association – Lesotho.
- Development Plan for the adjacent towns of Kasane and Kazungula - Ministry of Local Government, Land and Housing (Botswana).
- Development Plan for the rural village of Hukuntsi - Ministry of Local Government, Land and Housing (Botswana).
- Provision of data platform for the spatial analysis of water supply, demand and affordability in Bulawayo – City of Bulawayo and NORAIID (Zimbabwe).
- Integrated Development Plans for various District and Local Municipalities including:
 - Nquthu Local Municipality (KwaZulu-Natal)
 - Newcastle Local Municipality (KwaZulu-Natal)
 - Amajuba District Municipality (KwaZulu-Natal)
 - Jozini Local Municipality (KwaZulu-Natal)
 - Umhlabuyalingana Local Municipality (KwaZulu-Natal)
- uMhlathuze Rural Development Initiative – uMhlathuze Local Municipality (KwaZulu-Natal).
- Rural roads identification – uMhlathuze Local Municipality (KwaZulu-Natal).
- Mapungubwe Tourism Initiative – Development Bank (Limpopo Province).
- Northern Cape Tourism Master Plan – Department of Economic Affairs and Tourism (Northern Cape Province).

- Spatial Development Framework for Gert Sibande District Municipality (Mpumalanga) in conjunction with more detailed spatial development frameworks for the 7 Local Municipalities in the District, namely:
 - Albert Luthuli Local Municipality
 - Msukaligwa Local Municipality
 - Mkhondo Local Municipality
 - Pixley Ka Seme Local Municipality
 - Dipaleseng Local Municipality
 - Govan Mbeki Local Municipality
 - Lekwa Local Municipality
- Land Use Management Plans/Systems (LUMS) for various Local Municipalities including:
 - Nkandla Local Municipality (KwaZulu-Natal)
 - Hlabisa Local Municipality (KwaZulu-Natal)
 - uPhongolo Local Municipality (KwaZulu-Natal)
 - uMshwathi Local Municipality
- Spatial Development Framework for uMhlathuze Local Municipality (KwaZulu-Natal).
- Spatial Development Framework for Greater Clarens – Maloti-Drakensberg Transfrontier Park (Free State).
- Land use study for the Johannesburg Inner City Summit and Charter – City of Johannesburg (Gauteng).
- Port of Richards Bay Due Diligence Investigation – Transnet
- Jozini Sustainable Development Plan – Jozini Local Municipality (KwaZulu-Natal)
- Spatial Development Framework for Umhlabuyalingana Local Municipality (KwaZulu-Natal)

BUILT INFRASTRUCTURE

- EIA and EMP for a 9km railway line and water pipeline for manganese mine – Kalagadi Manganese (Northern Cape Province).
- EIA and EMP for 5x 440kV Transmission Lines between Thyspunt (proposed nuclear power station site) and several substations in the Port Elizabeth area – Eskom (Eastern Cape Province).
- Initial Scoping for the proposed 750km multi petroleum products pipeline from Durban to Gauteng/Mpumalanga – Transnet Pipelines.
- Detailed EIA for multi petroleum products pipeline from Kendall Waltloo, and from Jameson Park to Langtaagte Tanks farms –Transnet Pipelines.
- Environmental Management Plan (operational management plan) including visual impact assessment, noise impact assessment and flight path determination for the commercialization of Skukuza Airport – SANParks (Mpumalanga Province).
- Environmental Management Plan for copper and cobalt mine (Democratic Republic of Congo).
- EIA and Agricultural Feasibility study for Miwani Sugar Mill (Kenya).
- EIAs for Concentrated Solar and Photovoltaic power plants and associated infrastructure (Northern Cape, Free State, Limpopo and North West Province).
- EIAs for Wind Farms and associated infrastructure (Northern Cape and Western Cape).
- Basic Assessments for 132kV Distribution Lines (Free State, KwaZulu-Natal, Mpumalanga and North West Province).
- Environmental Assessment for the proposed Moloto Development Corridor (Limpopo).
- Environmental Advisory Services for the Gauteng Rapid Rail Extensions Feasibility Project.
- Environmental Screening for the Strategic Logistics and Industrial Corridor Plan for Strategic Infrastructure Project 2, Durban-Free State-Gauteng Development Region.

STATE OF THE ENVIRONMENT REPORTING

- 2008 State of the Environment Report for City of Johannesburg.
- Biodiversity Assessment – City of Johannesburg.

STRATEGIC ENVIRONMENTAL ASSESSMENTS AND ENVIRONMENTAL MANAGEMENT FRAMEWORKS

- SEA for Greater Clarens – Maloti-Drakensberg Transfrontier Park (Free State).
- SEA for the Marula Region of the Kruger National Park, SANParks.
- SEA for Thanda Private Game Reserve (KwaZulu-Natal).
- SEA for KwaDukuza Local Municipality (KwaZulu-Natal).
- EMF for proposed Renishaw Estate (KwaZulu-Natal).
- EMF for Mogale City Local Municipality, Mogale City Local Municipality (Gauteng).
- SEA for Molemole Local Municipality, Capricorn District Municipality (Limpopo).
- SEA for Blouberg Local Municipality, Capricorn District Municipality (Limpopo).

WETLAND STUDIES

- Rehabilitation Planning for the Upper Klip River and Klipspruit Catchments, City of Johannesburg (Gauteng).
- Wetland assessments for various Concentrated Solar and Photovoltaic power plants and associated infrastructure (Limpopo, Northern Cape, North West Province and Western Cape).
- Wetland assessments for Wind Farms and associated infrastructure (Northern Cape and Western Cape).
- Wetland assessments for various 132kV Distribution Lines (Free State, KwaZulu-Natal, Mpumalanga and North West Province).

VISUAL IMPACT ASSESSMENTS

- Visual Impact Assessment for the proposed relocation of the Skukuza Conference Centre, SANParks.
- Visual Impact Assessment for the proposed re-commercialisation of the Skukuza Airport.
- Visual Impact Assessment for the redevelopment of the Newmarket Racecourse, Alberton, Gauteng
- Visual Impact Assessment for the Thyspunt Transmission Lines Integration Project
- Visual Impact Assessments for various Solar Power Plants in the Northern Cape
- Visual Impact Assessments for various Wind Farms in the Northern Cape
- Visual Impact Assessments for various 132kV Distribution Lines (Free State, KwaZulu-Natal, Mpumalanga and North West Province).
- Landscape Character Assessment for Mogale City Environmental Management Framework

Name Shaun Taylor

Profession Environmental Scientist

Name of Firm SiVEST SA (Pty) Ltd

Present Appointment Environmental Scientist:
Environmental Division

Date of Birth 02 February 1984

ID Number 8402025020082

Nationality South African



Education

MSc – Aquatic Health
 BSc (Hons) – Geography & Environmental Studies
 BA – Geography and Environmental Science

Professional Qualifications

- MSc – Aquatic Health, Johannesburg University
Research Project: The physico-chemical and biological characteristics of selected seasonal pans in the Kruger National Park, South Africa
- BSc (Hons) – Geography & Environmental Studies, Witwatersrand University (First class)
Research Project: Sitatunga Habitat Suitability in the Okavango Delta, Botswana
- BA – Geography & Environmental Science, Monash University South Africa (Distinction)
- Certification in Wetland Delineation and Rehabilitation Training Course from the School of Continuing Education, University of Pretoria

Language Proficiency

LANGUAGE	SPEAK	READ	WRITE
English	Excellent	Excellent	Excellent
Afrikaans	Fair	Fair	Fair

Employment Record

Oct 2010 – Present (Full-time) SiVEST SA (Pty) Ltd Environmental Division – Environmental Scientist

Oct 2009 – Mar 2010 (Part-time) Envirokey cc – Junior Environmental Consultant and GIS support

Aug 2007 – Sep 2009 (Part-time) Holgate, Meyer and Associates Environmental Management Services – Junior Environmental Consultant

Key Experience

Shaun joined SiVEST in October 2010 and is based in the Johannesburg office in the capacity of an Environmental Scientist.

Shaun has a passion for working in the environmental and water (wetlands) field. From an environmental management perspective, Shaun has completed a number of environmental impact assessments, basic assessments, strategic environmental assessments, environmental management plans/programmes, exemption applications, amendment applications and conducted environmental auditing. Within the water field, Shaun has undertaken water use licensing (WUL) and WUL compliance monitoring for various developments. In terms of specialist work, Shaun has completed numerous wetland and riparian assessments for renewable energy projects, linear projects as well as site specific projects. Shaun has also undertaken several wetland rehabilitation plans for developments.

Through his time at SiVEST, Shaun has acquired the following skills:

- Excellent computer skills (Word, excel, powerpoint etc.);
- Excellent proposal and report writing skills;
- Environmental Impact Assessments;
- Environmental Management Plans/Programmes;
- Environmental Compliance and Auditing;
- Environmental Amendment and Exemption Applications;
- Wetland and riparian assessment techniques (including functional assessments);
- Wetland Rehabilitation Plans;
- Water Use License Applications.

Projects Experience

Shaun is responsible for the following activities: conducting EIA, BA and WULA processes, undertaking amendment and exemption applications, general project management, report writing, proposal writing, invoicing, conducting specialist riparian/wetland delineation and functional assessments, environmental and water related compliance monitoring and auditing. Current and completed projects / activities are outlined in detail below.

STRATEGIC ENVIRONMENTAL ASSESSMENTS

- Molemole Local Municipality Strategic Environmental Assessment, Limpopo Province (2014/2015);
- Blouberg Local Municipality Strategic Environmental Assessment, Limpopo Province (2015/2016).

ENVIRONMENTAL IMPACT ASSESSMENTS

- Mookodi Integration Project Environmental Impact Assessment (2011/2012);
- Noupoot Wind Farm, Northern Cape Province (2011/2012);
- Loeriesfontein Wind Farm and PV Plant, Northern Cape Province (2011/2012);
- Renosterberg Wind Farm and PV Plant near De Aar, Northern Cape Province (2012).

BASIC ASSESSMENTS

- Proposed Installation of a 500m³ Bulk Storage Fuel Oil Tank at Grootvlei Power Station, Mpumalanga Province (2011/2012);
- Proposed development of a 19MW Photovoltaic Solar Power Plant near Kimberley, Northern Cape Province (2012);

CURRICULUM VITAE

Shaun Taylor

- Proposed development of a 19MW Photovoltaic Solar Power Plant near Danielskuil, Northern Cape Province (2012);
- Frankfort Strengthening Project: 88kV Power Line from Heilbron (via Frankfort) to Villiers, Free State Province (2013);
- Wilger 132kV Overhead Distribution Power Line, Northern Cape Province (2013/2014);
- Limestone 1 – 132kV Overhead Distribution Power Line, Northern Cape Province (2013/2014);
- Limestone 2 – 132kV Overhead Distribution Power Line, Northern Cape Province (2013/2014);
- Proposed Tweespruit to Welroux Power Line and Substations, Free State Province (2014/2015);
- Sir Lowry's Pass River Flood Alleviation Project, Western Cape Province (2014/2015);
- Loeriesfontein 70MW Photovoltaic and 132kV Power Line, Northern Cape Province (2015/2016).

ENVIRONMENTAL MANAGEMENT PLANS / PROGRAMMES

- Eskom Thyspunt Nuclear Integration Project Environmental Management Plan – Transmission Infrastructure (2011);
- Eskom Thyspunt Nuclear Integration Project Environmental Management Plan – Substations (2011);
- Mookodi Integration Project Environmental Management Plan – Transmission Infrastructure and Substations (2011/12);
- Noupoot Wind Farm Environmental Management Programme (2012);
- Environmental Management Programme for a 500m³ Bulk Storage Fuel Oil Tank at Grootvlei Power Station (2012);
- Environmental Management Programme for a 19MW Photovoltaic Solar Power Plant near Kimberley, Northern Cape Province (2012);
- Environmental Management Programme for a 19MW Photovoltaic Solar Power Plant near Danielskuil, Northern Cape Province (2012);
- Karowe Diamond Mine Environmental Management Plan Review and Update, Boteti District, Botswana (2012);
- Environmental Management Programme for the Frankfort Strengthening Project: 88kV power line from Heilbron (via Frankfort) to Villiers, Free State Province (2013);
- Environmental Management Programme for the Wilger Photovoltaic 132kV Overhead Distribution Power Line, Northern Cape Province (2013);
- Environmental Management Programme for the Limestone 1 Photovoltaic – 132kV Overhead Distribution Power Line, Northern Cape Province (2013);
- Environmental Management Programme for the Limestone 2 Concentrated Solar Power – 132kV Overhead Distribution Power Line, Northern Cape Province (2013);
- Final Environmental Management Programme for the Khobab 140MW Wind Farm, Northern Cape Province (2014);
- Final Environmental Management Programme for the Loeriesfontein 140MW Wind Farm, Northern Cape Province (2014);
- Final Environmental Management Programme for the Noupoot 80MW Wind Farm, Northern Cape Province (2014);
- Environmental Management Programme for the Tweespruit to Welroux 132kV Power Line and Substations, Free State Province (2014/2015);
- Environmental Management Programme for the Loeriesfontein 70MW Photovoltaic and 132kV Power Line, Northern Cape Province (2015/2016).

AMENDMENT APPLICATIONS

- Loeriesfontein 140MW Wind Farm, Northern Cape Province: Substantive and Minor Amendments (2013/2014);
- Khobab 140MW Wind Farm, Northern Cape Province: Substantive and Minor Amendments (2013/2014);

CURRICULUM VITAE

Shaun Taylor

- Loeriesfontein 50MW Wind Farm, Northern Cape Province: Environmental Authorisation Minor Amendments (2013/2014);
- Loeriesfontein 100MW Solar Photovoltaic Plant, Northern Cape Province: Environmental Authorisation Minor Amendments (2013/2014);
- Noupoort 188MW Wind Farm, Northern Cape Province: Environmental Authorisation Minor Amendments (2013/2014);
- Loeriesfontein 132kV Power Line, Northern Cape Province: Environmental Authorisation Minor Amendment (2015).

ENVIRONMENTAL CONSTRAINTS\FATAL FLAWS

- Social Housing Projects in Sasolburg and Secunda Final Environmental Constraints Analysis Report (2011);
- Establishment of Wind Farms in Northern and Eastern Cape Provinces Environmental Constraints Analysis Report (2011).

ENVIRONMENTAL AND WATER USE LICENSE COMPLIANCE AUDITING

- Environmental Compliance Auditing for the Nigel Substation to Jameson Park (Inland Terminal 2) 88kV power lines – Construction Phase (2011);
- Water Use License Compliance Auditing for Grootvlei Power Station, Mpumalanga Province, South Africa (2012);
- Environmental Compliance Auditing for the Meadow Feeds Standerton Broiler Feed Mill, Mpumalanga Province (2012/2013);
- Kusile Power Station Armcor Water Use License Compliance Audit, Mpumalanga Province (2014 & 2015);
- Kusile Power Station Ash Dump Water Use License Compliance Audit, Mpumalanga Province (2014 & 2015);
- Kusile Power Station Pollution Dams Water Use License Compliance Audit, Mpumalanga Province (2014 & 2015);
- Kusile Power Station Stream Diversion and Water Pipeline Crossings Water Use License Compliance Audit, Mpumalanga Province (2014 & 2015);
- Kusile Power Station Geotechnical Water Use License Compliance Audit, Mpumalanga Province (2015);
- Ga-rankuwa 11kV Underground Power Cable Water Use License Compliance Audit, Gauteng Province (2015/2016);
- Transnet Rail Water Use License Compliance Audit, Northern Cape Province (2014, 2015 & 2016).

WATER USE LICENSES

- Integrated Water Use License Application for the Construction of a CSP and CPV/ PV Plant in De Aar, Northern Cape Province of South Africa (2010);
- Water Use License for Ga-rankuwa Substation, Gauteng Province (2013);
- Water Use License for Klevebank to Dalkieth 88kV Power Line, Gauteng Province (2013);
- Water Use License Application for the Frankfort Strengthening Project: 88kV Power Line from Heilbron (via Frankfort) to Villiers, Free State Province (2014/2015);
- Water Use Licensing for the Integrated Polokwane Rapid Public Transport Network, Limpopo Province (2014/2015);
- Water Use License for the Rooipunt Concentrated Solar Power Project, Northern Cape Province (2015);
- Water Use License for the Katulo Tsatsi Solar Park, Northern Cape Province (2015);
- Water Use License for the Limestone Concentrated Solar Power Project, Northern Cape Province (2015);

- Water Use License for the Wilger Photovoltaic Project, Northern Cape Province (2015);
- Water Use License for the Hertzogville Solar Park, Free-State Province (2015);
- Water Use License for the Dwarsrug Wind Farm, Northern Cape Province (2015);
- Water Use License for the Loeriesfontein 70MW Photovoltaic and 132kV Power Line Project, Northern Cape Province (2015).

WETLAND AND RIPARIAN DELINEATION AND FUNCTIONAL ASSESSMENTS

- Construction of a Wind Farm in Noupoot, Northern Cape Province, South Africa: Surface Water Report – Scoping Phase Assessment (2010);
- Construction of a Wind Farm in Prieska, Northern Cape Province, South Africa: Surface Water Report – Scoping Phase Assessment (2010);
- Construction of a Wind Farm in Loeriesfontein, Northern Cape Province, South Africa: Surface Water Report – Scoping Phase Assessment (2010);
- Construction of a 132KV Distribution Line from the Kudu Substation to Dorstfontein Substation in Mpumalanga Province: Surface Water Impact Assessment (2010);
- EIA for the Thyspunt Transmission Lines Integration Project: Surface Water Impact Assessment Report – EIA – Northern Corridor: Eastern Cape Province (2011);
- EIA for the Thyspunt Transmission Lines Integration Project: Surface Water Impact Assessment Report – EIA – Southern Corridor: Eastern Cape Province (2011);
- Construction of a CSP and a CPV/ PV Plant in De Aar, Northern Cape Province, South Africa – Surface Water Assessment – Scoping Phase Assessment (2011);
- Environmental Management Framework for the Mogale City Local Municipality Surface Water Report – Desired State Report: Gauteng Province (2011);
- Proposed Township Development on the Remainder of Portion 27 of the Farm Middelburg and Townsland 287 JS, Mpumalanga Province: Surface Water Assessment (2011);
- Construction of a CSP and a CPV/ PV Plant in De Aar, Northern Cape Province, South Africa: Surface Water Impact Assessment (2011);
- Construction of a CSP and a CPV/ PV Plant in Kimberley, Northern Cape Province, South Africa: Surface Water Impact Assessment (2011);
- Proposed Mixed Use Industrial Township Development in the Daspoort Area of Tshwane, Gauteng Province, South Africa: Surface Water Impact Assessment (2011);
- Westrand Strengthening Project from Westgate Substation to Hera Substation and Westgate Substation Extension, Gauteng Province, South Africa (2011);
- Mookodi Integration Project 2 Basic Assessment Surface Water Impact Assessment, North West Province, South Africa (2012);
- Wetland Site Investigation Report for Arundo Estate in the Midrand Area, Gauteng Province, South Africa (2011);
- Construction of a Gabion Structure at Waterval Substation in the Midrand Area, Gauteng Province, South Africa: Surface Water Impact Assessment (2011);
- Proposed Construction of a Single 400kV Power Line from Borutho to Nzhlele, North West Province, South Africa: Scoping and Impact Surface Water Assessment (2011/2012);
- Proposed Construction of an 88kV Power Line at Palmridge in the Ekurhuleni Metropolitan Municipality, Gauteng Province, South Africa: Surface Water Impact Assessment (2011);
- Proposed Construction of a 19MW Photovoltaic Solar Power Plant near Danielskuil, Northern Cape Province, South Africa: Surface Water Impact Assessment (2012);
- Proposed Rebuilding of a 88kV Power Line from Henneman Substation to Serfontein Substation near Kroonstad, Free State Province, South Africa: Surface Water Impact and Eco-Services Functional Assessment (2012);
- Proposed Deconstruction and Construction of an 11kV Power Line near Delmas, Mpumalanga Province, South Africa: Wetland Delineation, Impact, Functional Assessment and Rehabilitation Plan (2012);
- Proposed Construction of a Solar Photovoltaic Power Plant near De Aar, Northern Cape Province, South Africa: Surface Water Scoping Assessment (2012);

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- Proposed Construction of a Wind Farm near De Aar, Northern Cape Province: Surface Water Scoping Assessment (2012);
- Proposed Construction of a Low Cost Housing Development in the Soutpan area of Tshwane, Gauteng Province, South Africa: Wetland Assessment (2012);
- Proposed Construction of a 132kV Power Line near Kimberley, Northern Cape Province: Surface Water Assessment (2012);
- Proposed Extension of Delmas Substation and Associated Power Lines, Mpumalanga Province, South Africa: Wetland Delineation, Impact, Functional Assessment and Rehabilitation Plan (2012);
- Proposed Construction of a Substation in the Midrand area of Gauteng Province: Wetland Delineation and Impact Assessment (2012);
- Construction of an 88kV Power Line at Lochvaal Kudu in the Emfuleni Municipality, Gauteng Province: Surface Water Impact Assessment and Rehabilitation Plan (2012);
- Proposed construction of an 88kV Power Line from Klevebank Substation to Dalkeith Substation, Gauteng Province: Wetland and Riparian Delineation, Impact, Functional Assessment and Rehabilitation Plan (2012/2013);
- Proposed Construction of an 88kV Power Line from Heilbron Substation to Villiers Substation, Free State Province: Surface Water Impact Assessment (2013);
- Proposed Construction of a 132kV Power Line, Substation and the Extension of Homestead Substation Associated with the 75MW Concentrating Photovoltaic (CPV) / Photovoltaic (PV) Plant (PV 3) on the Farm Droogfontein in Kimberley, Northern Cape Province: Surface Water Assessment (2013);
- Moddershaft Underground to Overhead Cable Replacement of an 11kV Power Line from Moddershaft Substation to a Minisub near Anzac, Gauteng Province: Surface Water Impact Assessment (2013);
- Proposed Construction of an 11kV Underground Power Cable from Civic Centre to Zola Substation, Gauteng Province: Wetland Assessment (2013);
- Proposed Construction of a Substation on Portion 265 Randjesfontein 405-JR, Gauteng Province; Wetland Delineation and Impact Assessment (2013);
- Proposed Re-build of a Section of the Mathibestad Danhauser 33kV Power Line Network, North West Province: Wetland Assessment (2013);
- Proposed Re-build of a Section of the Existing 33kV Mathibestad-Danhauser Power Line Network, Gauteng Province: Surface Water Impact Assessment (2013);
- Proposed Re-build of a Section of the Existing 33kV Mothutlung North Power Line Network, Gauteng Province: Surface Water Impact Assessment (2013);
- Proposed Re-build of a Section of the Existing 33kV Mothutlung South Power Line Network, Gauteng Province: Surface Water Impact Assessment (2013);
- Proposed Re-build of a Section of the Existing 33kV Nonyane Madidi North Power Line Network, Gauteng Province: Surface Water Impact Assessment (2013);
- Proposed Re-build of a Section of the Existing 33kV Nonyane Swartdam Power Line Network, Gauteng Province: Surface Water Impact Assessment (2013);
- Proposed Rebuild of a Section of the Existing 33kV Pelly Klipdrift Network, Gauteng and North West Provinces: Surface Water Impact Assessment (2013);
- Proposed Re-build of a Section of the Existing 33kV Zonderwater Kraal Power Line Network, Gauteng Province: Surface Water Impact Assessment (2013);
- Proposed Re-build of a Section of the Existing 33kV Hammanskraal Lusthof Power Line Network, Gauteng Province: Surface Water Impact Assessment (2013);
- Proposed Re-build of a Section of the Existing 33kV Klipgat Circle Power Line Network, Gauteng Province: Wetland Assessment (2013);
- Proposed Re-build of Sections of the Existing 33kV Erasmus Aviva Power Line Network, Gauteng Province: Surface Water Assessment (2013);
- Proposed Construction of an 11kV Underground Power Cable at the Ga-Rankuwa Substation, Gauteng Province: Wetland Assessment (2013);
- Mamatwan Manganese Mine, Northern Cape Province: Surface Water Assessment (2014);

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- Two 5MW Photovoltaic Plants, Free State Province: Surface Water Assessment (2014);
- Dwarsrug Wind Farm, Northern Cape Province: Surface Water Assessment (2014);
- Manzimtoti Sewer Line Project, Kwa-Zulu Natal Province: Surface Water Assessment (2014);
- Compensation Flats Development, Kwa-Zulu Natal Province: Surface Water Assessment (2014);
- Tinley Manor South Road Development, Kwa-Zulu Natal Province: Surface Water Assessment (2014);
- Ntuzuma Sewer Line Project, Kwa-Zulu Natal Province: Surface Water Assessment (2014);
- Esphiva Sewer Line Project, Kwa-Zulu Natal Province: Surface Water Assessment (2014);
- Frankfort 132kV Power Line Wetland Walk-down Assessment, Free State Province (2014);
- Proposed Construction of the Esphiva Water Pipeline near Ulundi, KwaZulu-Natal Province: Surface Water Assessment (2014);
- Grootvlei Power Station Wetland Assessment, Mpumalanga Province (2014/2015);
- Proposed Construction of the Embangweni and Bhekabantu Irrigation Schemes, KwaZulu-Natal Province: Wetland and Aquatic Assessment (2015);
- Proposed Construction of the Nondabuya and Khwehle Primary Agriculture Schemes, KwaZulu-Natal Province: Wetland and Aquatic Assessment (2015);
- Proposed Expansion of the Makhathini Irrigation Scheme, KwaZulu-Natal Province: Wetland and Aquatic Assessment (2015);
- Proposed Construction of the Mbaliyezwe Irrigation Schemes, KwaZulu-Natal Province: Wetland and Aquatic Assessment (2015);
- Proposed Mixed Use Development on the Remainder of Portion 27 of the Farm Middelburg Town and Townlands 287 JS, Steve Tshwete Local Municipality in the Mpumalanga Province: Wetland Assessment (2015);
- Proposed Construction of Two Power Lines and Two Substations for the Mainstream Wind Facilities near Beaufort West, Western Cape Province: Surface Water Assessment (2015);
- Proposed eThekweni Integrated Rapid Transport Network (IRPTN) – Bus Rapid Transport (BRT) Phase 1: Route C1A, KwaZulu-Natal Province: Wetland Assessment (2015);
- Proposed Coal Railway Siding at the Welgedacht Marshalling Yard and associated Milder Road Upgrade near Springs, Gauteng Province: Wetland Assessment (2015);
- Proposed Development of a 22kV Medium Voltage Power Line in Mofofutso, North West Province: Surface Water Assessment (2015);
- Mookodi Integration Power Line Project, North West Province: Wetland Walk-down Assessment (2015);
- Proposed Construction of a Coal Loading Facility within the existing Bronkhorstspuit Railway Siding near Bronkhorstspuit, Gauteng Province (2015);
- Proposed Construction of the Two 75MW Tlisitseng Solar Photovoltaic Energy Facilities near Lichtenburg, North West Province: Surface Water Assessment (2015);
- Proposed Construction of the Tlisitseng Solar Substation and associated 400kV Power Line near Lichtenburg, North West Province: Surface Water Assessment (2015);
- Proposed Construction of the Two 75MW Sendawo Solar Photovoltaic Energy Facilities near Lichtenburg, North West Province: Surface Water Assessment (2015);
- Proposed Construction of the Sendawo Solar Substation and associated 400kV Power Line near Lichtenburg, North West Province: Surface Water Assessment (2015);
- Proposed Construction of a 75MW Solar Photovoltaic Power Plant near Dennilton, Limpopo Province: Surface Water Assessment (2015);
- Proposed Construction of the Helena 1, 2 & 3 Photovoltaic Energy Facilities near Copperton, Northern Cape Province: Surface Water Assessment (2015);
- Proposed Construction of a 70MW Photovoltaic Facility and 132kV Power Line near Loeriesfontein, Northern Cape Province: Surface Water Assessment (2015);
- Proposed Construction of the Eureka West 140MW Wind Farm near Copperton, Northern Cape Province: Surface Water Assessment (2016);
- Proposed Construction of the Eureka East 140MW Wind Farm near Copperton, Northern Cape Province: Surface Water Assessment (2016);

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- Proposed Construction of the Eureka 132kV Power Line near Copperton, Northern Cape Province: Surface Water Assessment (2016);
- Proposed Construction of the Aletta 140MW Wind Farm near Copperton, Northern Cape Province: Surface Water Assessment (2016).

WETLAND AND RIPARIAN REHABILITATION / POST-REHABILITATION / AUDITING ASSESSMENTS

- Post-rehabilitation Assessment of Three Wetland Crossing Sites for Chemwes (Pty) Ltd for the Re-working of a Tailings Dam Project near Stilfontein, North West Province (2011);
- Fourways 22kV Feeder Cable Wetland and River Rehabilitation Plan (2011);
- Post-rehabilitation Assessment of the Inland New Multi-Purpose Pipeline in the Mpumalanga and Gauteng Provinces (2012);
- John Ross Highway Wetland Rehabilitation Plan, KwaZulu-Natal Province (2014);
- Proposed eThekweni Integrated Rapid Transport Network (IRPTN) – Bus Rapid Transport (BRT) Phase 1: Route C1A, KwaZulu-Natal Province: Wetland and Riparian Rehabilitation Plan (2015).

ENVIROKEY CC - JUNIOR ENVIRONMENTAL CONSULTANT AND GIS SUPPORT - OCT 2009 – MAR 2010

Responsible for managing basic assessments, report writing, conducting specialist wetland assessments, auditing procedures and GIS mapping. Full list of activities completed available on request.

JUNIOR ENVIRONMENTAL CONSULTANT AUG 2007 – SEP 2009

Responsible for managing basic assessments, report writing, conducting specialist wetland assessments, environmental auditing procedures and GIS mapping. Full list of activities completed available on request.

Conferences and Publications

Taylor, S. R., 2008: A Critical Review of Strategic Environmental Assessment in South Africa and looking towards Future Considerations, presented at the South African Students Geography Conference, University of Cape Town, Cape Town.

Academic and Work Related Achievements

- Awarded Monash Dean's recognition award for outstanding academic results for second semester of 2006;
- Awarded Monash Dean's recognition award for outstanding academic results for first semester of 2007;
- Awarded Monash Dean's recognition award for outstanding academic results for second semester of 2007;
- Awarded Golden Key membership and certificate to the International Honours Society for outstanding academic achievements in undergraduate studies for Monash 2008;
- Awarded Study Sponsorship from Holgate, Meyer and Associates for Honours study in 2008/09;
- Awarded Certificate of Merit from University of Witwatersrand for outstanding work for the course of Honours in 2009/10;
- Awarded Merit Bursary for MSc from the University of Johannesburg 2010 for excellent academic results;
- Numerous short-course certificates (grass identification, wildflower identification, veld management, wetland buffer assessments and water use licensing).

CURRICULUM VITAE – CHRIS VAN ROOYEN

Name of organisation: Chris van Rooyen Consulting
Profession: Ornithological Consultant
Position in Firm: Director/Co-owner
Date of Birth: 30 April 1964
Relevant Experience: 17 years

SPECIALIST FIELD

Ornithological consultant offering specialist advice related to the impact of industrial developments on avifauna, especially in the electricity energy sector.

TERTIARY EDUCATION

1988	B.A. (Law)	Rand Afrikaans University
1991	LLB	Rand Afrikaans University

I work under the supervision of and in association with Albert Froneman (SACNASP Zoological Science Registration number 400177/09) as stipulated by the Natural Scientific Professions Act 27 of 2003.

KEY EXPERIENCE IN ELECTRICITY INDUSTRY

WIND ENERGY SITES

- St Helena Bay, Seeland, Electrawind
- Caledon, Caledon Wind
- Caledon, Langhoogte, SAGIT
- Langebaan, Langfontein, Oelsner Group
- Darling, Kerrifontein Oelsner Group
- Jeffreys Bay, Mainstream
- Ubuntu, Windcurrent
- Bana ba pifhu, Windcurrent
- Coega, Electrawind
- Swellendam, Excelsior, Biotherm
- Vredendal, Inca Energy
- Vredendal, Electrawind
- Morreesburg, Swartberg, Electrawind
- Oyster Bay, Renewable Energies South Africa
- Laingsburg, Spitskopvlakte, Biotherm
- Port Nolloth, Kannikwavlakte, Biotherm
- Vleesbaai, Vleesbaai Independent Power Producer
- Loeriesfontein, Mainstream
- Noupoort, Mainstream
- Indwe, Biotherm
- Pofadder, Mainstream
- Namies, JUWI
- De Aar, Mulilo North
- De Aar, Mulilo South

SOLAR ENERGY SITES:

- Bokpoort, Concentrated Solar Thermal Power (CSP)
- Solar Park, Upington
- Mainstream De Aar PV
- Droogfontein (Kimberley) PV

POWER LINES:

- Chobe 33kV Distribution line
- Athene - Umfolozi 400kV
- Beta-Delphi 400kV
- Cape Strengthening Scheme 765kV
- Flurian-Louis-Trichardt 132kV
- Ghanzi 132kV (Botswana)
- Ikaros 400kV
- Matimba-Witkop 400kV
- Naboomspruit 132kV
- Tabor-Flurian 132kV
- Windhoek - Walvisbaai 220 kV (Namibia)
- Witkop-Overysseel 132kV
- Breyten 88kV
- Adis-Phoebus 400kV
- Dhuva-Janus 400kV
- Perseus-Mercury 400kV
- Gravelotte 132kV
- Ikaros 400 kV
- Khanye 132kV (Botswana)
- Moropule – Thamaga 220 kV (Botswana)
- Parys 132kV
- Simplon –Everest 132kV
- Tutuka-Alpha 400kV
- Simplon-Der Brochen 132kV
- Big Tree 132kV
- Mercury-Ferrum-Garona 400kV
- Pebble Rock 132kV
- Reddersburg 132kV
- Thaba Combine 132kV
- Nkomati 132kV
- Louis Trichardt – Musina 132kV
- Endicot 44kV
- Apollo Lepini 400kV
- Tarlton-Spring Farms 132kV
- Kuschke 132kV substation
- Bendstore 66kV Substation and associated lines
- Kuiseb 400kV (Namibia)
- Gyani-Malamulele 132kV
- Watershed 132kV
- Bakone 132kV substation
- Eerstegoud 132kV LILO lines
- Kumba Iron Ore: SWEP - Relocation of Infrastructure
- Kudu Gas Power Station: Associated power lines
- Steenberg Booyseendal 132kV
- Toulon Pumps 33kV
- Thabatshipi 132kV
- Witkop-Silica 132kV
- Bakubung 132kV
- Nelsriver 132kV
- Rethabiseng 132kV
- Tiilburg 132kV
- and LILO lines
- Styltdrift 132kV
- Taunus – Diepkloof 132kV
- Bighorn NDP 132kV
- Waterkloof 88kV
- Camden – Theta 765kV
- Dhuva – Minerva 400kV Diversion
- Lesedi –Grootpan 132kV
- Waterberg NDP
- Bulgerivier – Dorset 132kV
- Bulgerivier – Toulon 132kV
- Nokeng-Fluorspar 132kV
- Mantsole 132kV
- Tshilamba 132kV
- Thabamooop - Tshebela – Nhlovuko 132kV
- Arthurseat 132kV
- Borutho 132kV MTS
- Grootboom 132kV
- DWAF Steelpoort 132kV
- Chloe – Gilead 66kV
- Pietersburg – Chloe 66kV
- Tshatane – Lesideng 132kV
- Lesego – Jane Furse 132kV
- DWAF 1 – DWAF 2 132kV
- Pitso 132kV Substation
- Lebowa – Dithabaneng – Boynton LILO 132kV

- Zeus-Perseus 765kV
- Matimba B Integration Project
- Caprivi 350kV DC (Namibia)
- Gerus-Mururani Gate 350kV DC (Namibia)
- Mmamabula 220kV (Botswana)
- Steenberg-Der Brochen 132kV
- Venetia-Paradise T 132kV
- Burgersfort 132kV
- Majuba-Umfolozi 765kV
- Delta 765kV Substation
- Braamhoek 22kV
- Steelpoort Merensky 400kV
- Mmamabula Delta 400kV
- Delta Epsilon 765kV
- Gerus-Zambezi 350kV DC Interconnector: Review of proposed avian mitigation measures for the Okavango and Kwando River crossings
- Giyani 22kV Distribution line
- Lihobong-Kao 132/11kV distribution power line, Lesotho
- 132kV Leslie – Wildebeest distribution line
- A proposed new 50 kV Spoornet feeder line between Sishen and Saldanha
- Cairns 132kv substation extension and associated power lines
- Pimlico 132kv substation extension and associated power lines
- Gyani 22kV
- Matafin 132kV
- Nkomazi_Fig Tree 132kV
- GaKgapanne 66kV
- Knobel Gilead 132kV
- Bochum Knobel 132kV
- Madibeng 132kV
- Witbank Railway Line and associated infrastructure
- Spencer NDP phase 2 (5 lines)
- Akanani 132kV
- Hermes-Dominion Reefs 132kV
- Cape Pensinsula Strengthening Project 400kV
- Magalakwena 132kV
- Benfiosa 132kV
- Dithabaneng 132kV
- Taunus Diepkloof 132kV
- Taunus Doornkop 132kV
- Tweedracht 132kV
- Jane Furse 132kV
- Majeje Sub 132kV
- Tabor Louis Trichardt 132kV
- Riversong 88kV
- Mamatsekele 132kV
- Kabokweni 132kV
- MDPP 400kV Botswana
- Marble Hall NDP 132kV
- Bokmakiere 132kV Substation
- Thulamela 132kV
- Marang 132kV
- Thulamela 132kV
- Merensky 132kV
- Amandla – Makometsane - Moutse 132kV
- Lebathlane 132kV
- Sun City Substation and associated powerlines
- Solar Park 400kV Integration Project
- Mamatsekele 132kV
- KwaMhlanga 132kV
- Malelane – Buffelspruit 132kV
- Gutshwa 132kV
- Taung-Gold 88kV
- Bredasdorp 66kV
- Vaalkop Dam 88kV
- Freedom Park 88kV
- Winterveld 132kV
- Ohrigstad – Phiring – Lemara 132kV
- Blouwater – Uiekraal 66kV
- Houhoek 400kV substation and LILO lines
- Zandfontein – Carmona 88kV
- Bracken – Roscco 88kV
- Victor 132kV
- Gamma – Kappa 765kV
- Kappa – Omega – Aurora 765kV

POWER STATIONS:

- Open Cycle Gas Turbine Plants & The Associated Transmission Lines & Substation At Atlantis, Western Cape
- Kangra Power Station: Siting Report

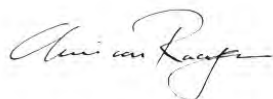
OTHER PROJECTS:

- Lizard Point Golf Estate
- Lever Creek Estates
- Leloko Lifestyle Estates
- Vaalowers Residential Development
- Clearwater Estates Grass Owl Impact Study
- Somerset Ext. Grass Owl Study
- Proposed Three Diamonds Trading Mining Project (Portion 9 and 15 of the Farm Blesbokfontein)
- N17 Section: Springs To Leandra –“Borrow Pit 12 And Access Road On (Section 9, 6 And 28 Of The Farm Winterhoek 314 Ir)
- South African Police Services Gauteng Radio Communication System: Portion 136 Of The Farm 528 Jq, Lindley.
- Report for the proposed upgrade and extension of the Zeekoegat Wastewater Treatment Works, Gauteng.
- Bird Impact Assessment for Portion 265 (a portion of Portion 163) of the farm Rietfontein 189-JR, Gauteng.
- Bird Impact Assessment Study for Portions 54 and 55 of the Farm Zwartkop 525 JQ, Gauteng.
- Bird Impact Assessment Study Portions 8 and 36 of the Farm Nooitgedacht 534 JQ, Gauteng.
- Shumba’s Rest Bird Impact Assessment Study
- Randfontein Golf Estate Bird Impact Assessment Study
- Ziikaatsnek Wildlife Estate
- Regenstein Communications Tower (Namibia)
- Input into Richards Bay Comparative Risk Assessment Study
- Maquasa West Open Cast Coal Mine
- Glen Erasmia Residential Development, Kempton Park, Gauteng
- Bird Impact Assessment Study, Weltevreden Mine, Mpumalanga
- Bird Impact Assessment Study, Olifantsvlei Cemetery, Johannesburg
- Camden Ash Disposal Facility, Mpumalanga
- Proposed Desalination Project at Mile 6 near Swakopmund, Namibia

CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications and experience.

Date: 17 July 2014



Nicolene Venter



Name of firm	Zitholele Consulting
Profession	Senior Public Participation Practitioner
Specialisation	Public Participation
No. of years with firm	2 months
Nationality	South African, ID No. 600421 0065 088

Key Experience

Nicolene has over the past 15 years established herself as an experienced and well recognized public participation practitioner, facilitator and strategic reviewer. She has project managed several high profile public participation projects and excels in not only stakeholder engagements but with humility for street level consultation. Nicolene first formed her own consultancy business in 1997 and joined SiVEST in October 2007, and returned to her own consultancy business in October 2011. She lead public participation and stakeholder engagement projects with insightful strategic thinking to ensure the delivery of highly professional and a target orientated public participation process to her clients as the project dictates. She also has sound knowledge of the Equator Principles especially in terms of the Public Participation Process required for projects that are funded internationally. Nicolene's skills base also includes the facilitation of workshops, public and focus group meetings. As the Public Participation Practitioner, her proven leadership skills ensures the managing, development and motivation of the public participation team to achieve project objectives and to maintain high quality standards.

Professional Registrations

Education	International Association for Public Practitioners (IAP2) (Modules 1 and 2)	IAPP	2009
	Diploma in Public Relations	Public Relations Institute of South Africa	1989
	Higher Secretarial Diploma	Pretoria Technikon	1979

Employment Record

2013 - Present	Zitholele Consulting	Public Participation
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Project Experience

Mining Projects

Proposed AK6 Diamond Mine	Boteti, Botswana
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Drafting of the Community Consultation Plan for inclusion in the Closure Plan for the updated Environmental Management Plan

Power Plants

Zimbabwe Ethenol Plant

Zimbabwe

Consultation process undertaken for the proposed construction of an ethanol plant in Chisumbanje, Middle Sabie, Zimbabwe in terms of the Zimbabwe's Environmental Management Agency (EMA). Not only did consultation take place with Government Officials, but an intensive consultation process has taken place with the local community.

EIA: Hendrina Ash Dam Expansion

Mpumalanga Province, South Africa

Expansion of Eskom's Hendrina Power Station's Ash Dam Facilities at Pullenshope, Mpumalanga Province

EIA: Wind farms and/or Solar Energy Facilities

Northern Cape Province, South Africa

Proposed construction of wind farms and/or solar energy facilities as proposed by Mainstream Renewable Power South Africa, Northern Cape Province.

Basic Environmental Assessment: Grootvlei Power Station

Mpumalanga Province, South Africa

Proposed installation of an additional 500M3 bulk storage fuel tank at Eskom's Grootvlei power Station, Mpumalanga Province

EIA: Solar Energy Facility

Kimberly, South Africa

(Droogfontein, Kimberley; Kaalplats, Loeriesfontein; Paarde Valley, De Aar). The proposed construction of Concentrating Solar Plants (CSP) and Concentrating/Photovoltaic (CPV/PV) Plants as proposed by Mainstream Renewable Power South Africa in the Northern Cape Province.

Linear Infrastructure

EIA: Aggeneis-Oranjemond

Northern Cape Province, South Africa

Proposed construction of a new 400kV Eskom Transmission Power Line between Aggeneys and Oranjemond, and the expansion of the Aggeneis and Oranjemond Transmission Substations, Northern Cape Province

Impact Phase of EIA: Invubu-Theta

KwaZulu Natal, South Africa

Proposed construction of a double circuit 400kV Eskom Transmission Power Line between Richards Bay and Empangeni, KwaZulu-Natal Province

Basic Environmental Assessment: Westrand

Gauteng Province, South Africa

Proposed construction of a 400kV Eskom Transmission Power Line between Eskom's existing Westrand and Hera Substations, Gauteng Province.

EIA: Mookodi Integration Project

North-West Province, South Africa

Proposed improvement of Eskom's electricity supply network around the Vryburg and Stella, and to supply the proposed Kalplats Mine with electricity, North-West Province.

EIA: Transnet Coallink

KwaZulu Natal & Mpumalanga, South Africa

Transnet's coallink upgrade project from Ermelo to Richard's Bay - Class Application for a number of Basic Assessments and Environmental Impact Assessments (5 Applications), Mpumalanga and KwaZulu-Natal Provinces

EIA: Thyspunt Transmission lines Integration Project

Eastern Cape Province, South Africa

Proposed construction of 5 x 400kV Eskom Transmission power lines between Thyspunt (near Oyster Bay) to Port Elizabeth – 180km in length (Eskom's existing Grassridge & Dedisa Transmission Substations), Port Elizabeth, Eastern Cape Province

EIA: Delarey-Kopela-Phahameng

South Africa

Proposed construction of an Eskom Distribution power line from Delareyville past Kopela to Madibogo.

Basic Environmental Assessment: Malelane Substation

Mpumalanga Province, South Africa

Proposed Construction of a New Malelane Substation and the Proposed Construction of a New Komatipoort-Marathon 275kV Eskom Transmission Power Line Turn-In of approximately 1.5km, Malelane, Mpumalanga Province

Other

Miwani Sugar Mill

Kenya

Consultation process undertaken, under the National Environment Management Authority (NEMA) of Kenya, with the assistance of local specialists (Kenya Marine and Fisheries Research Institute) for the proposed construction of a sugar mill in Miwani, Nyanza Province in terms of Kenya's.

EIA: Middelburg Water Treatment Plant

Mpumalanga Province, South Africa

Water reclamation scheme for BHP Billiton Energy Coal South Africa (BECSA) in the Witbank / Middelburg area, Mpumalanga Province

Strategic Management and Review of Stakeholder Engagement Process were also conducted for a number of EIAs / BAs and the completion of Stakeholder Engagement Process between 1997 to September 2007 is available on request

Facilitation responsibility only:

- Environmental Management Plan for Prospecting Right Application Process (Client: Oresund Environmental Solutions): August 2010 and September 2010
- Ariadne-Eros 400kV/132kV Multi-Circuit Transmission Power Line: July 2009 and March 2010 (Client: Acer Africa)
- Middelburg SmancorCR Chemical Plant (Client: Environmental Science Associates) – Public Meeting: October 2007
- Majuba-Venus 765kV Transmission Power Lines (Client: Acer Africa) – Public Meetings: July 2008 and March 2010

Papers, publications and presentations

None