

**CURRICULUM VITAE
SANDHISHA JAY NARAIN**

Profession : Senior Environmental Consultant for Savannah Environmental Consultants
Specialisation : Environmental Consulting, Environmental Compliance Auditing and Monitoring
Years experience : 8 years

KEY RESPONSIBILITIES

- Report writing and review;
- On site Compliance monitoring;
- Conducting Audits and Audit reporting;
- Development of Proposals; and
- Staff monitoring/mentoring.

SKILLS BASE AND CORE COMPETENCIES

- Environmental Impact Assessments
- Water Use Licence Application
- Borrow and Quarry Permits
- Writing and Implementing of the Environmental Management Plans (EMPs)
- On site Compliance Monitoring
- Auditing of Environmental Authorisations and EMPs

EDUCATION AND PROFESSIONAL STATUS

Degrees:

- BSS. Hons. Geography and Environmental Management: University of KZN (2007)
- BSS Geography and Environmental Management: University of KZN (2006)

Courses:

- Green Star SA Accredited Professional: Green Building Council of South Africa (2010)
- ISO 14001 Auditing: Mafuta Auditing and Consulting (2009)
- ISO 14001 Awareness Training: Mafuta Auditing and Consulting (2009)
- Hazardous Identification and Risk Assessment: H.I.R.A (2009)

EMPLOYMENT

- *October 2015 – Current:* Savannah Environmental (Pty) Ltd: Senior Environmental Consultant
- *April 2011 – October 2015:* ILISO Consulting (Pty) Ltd: Environmental Scientist
- *November 2009 – March 2011:* Environmental Impact Management Services: Environmental Control Officer
- *April 2008 – October 2009:* Group Five: Environmental Officer

CONSULTING PROJECT EXPERIENCE

- Environmental Assessment Practitioner for the Environmental Impact Assessment (EIA) for the installation of Sol Invictus Solar Photovoltaic Power Plants in the Northern Cape for Building Energy South Africa (Pty) Ltd.
- Environmental Assessment Practitioner for the Environmental Impact Assessment (EIA) for the installation of Solar Photovoltaic Power Plant at Eskom Lethabo Coal Fired Power Station.
- Environmental Assessment Practitioner for the Environmental Impact Assessment (EIA) for the installation of Solar Photovoltaic Power Plant at Eskom Majuba Coal Fired Power Station.
- Environmental Assessment Practitioner for the Environmental Impact Assessment (EIA) for the installation of Solar Photovoltaic Power Plant at Eskom Tutuka Coal Fired Power Station.
- Environmental Scientist for the Bombela Concession Company Gautrain Integrated Water Use Licence Audit.
- Environmental Assessment Practitioner for the Environmental Impact Assessment (EIA) for the installation of Solar Photovoltaic Power Plant at Eskom Arnot Coal Fired Power Station
- Environmental Assessment Practitioner for the Environmental Impact Assessment (EIA) for the installation of Solar Photovoltaic Power Plant at Eskom Duvha Coal Fired Power Station
- Environmental Scientist undertaking the Environmental Screening of sites for the delivery of Tuberculosis Park home facilities to 11 clinics within South Africa for the United States Agency for International Development (USAID).
- Environmental Scientist for the Environmental Impact Assessment for the De Beers Pass Section of the N3. Assisting in Compiling the Draft EIR and IRR.
- Environmental Scientist compiling and submitting a Water Use license Application in support of Section 21(a) and 25 (2) for the Transfer of Water Use Rights and Water Use License application for Fortress Bonsmaras.
- Environmental Scientist compiling and submitting Environmental Management Plans to obtain authorisation for the use of Borrow and Quarry areas required for the construction of the Ntabelanga and Lalini Dam Walls and associated infrastructure for the Mzimvubu Water Project
- Environmental Scientist compiling and submitting Environmental Management Plans to obtain authorisation for the use of Borrow and Quarry areas required for the construction of the Spring Grove Dam and associated infrastructure for the Mooi-Mgeni Transfer Scheme Phase 2

ON SITE ENVIRONMENTAL MANAGEMENT

- Environmental Control Officer for the Operational Solar Energy Facility Windfall 59 Properties Pty Ltd
- Independent Environmental Auditor for Adams Solar Photovoltaic Park in the Northern Cape for Enel Green Power RSA (Pty) Ltd
- Independent Environmental Auditor for Pulida Solar Photovoltaic Park in the Free State for Enel Green Power RSA (Pty) Ltd
- Environmental Control Officer for the Operational Phase of the Prieska Solar Photovoltaic Facility in the Northern Cape for Gestamp Solar South Africa
- Environmental Control Officer for the Operational Phase of the De Aar Solar Photovoltaic Facility in the Northern Cape for Gestamp Solar South Africa
- Senior Environmental Control Officer (ECO) providing supervision of the on site ECO for the Eskom Thuso (Verwoerdburg) 400/132 kV Substation and 2 x 2.5 km 400 kV Lines

- Senior Environmental Control Officer (ECO) undertaking Quarterly Environmental Audits and providing supervision of the onsite ECO for the Mdloti River Development – Rising of Hazelmere Dam.
- Environmental Monitor to oversee the implementation of the Environmental Management Plan and Environmental and Safety Project Specification for the construction of The Spring Grove Dam and Associated Work for the Mooi-Mgeni Transfer Scheme Phase 2
- ECO for the Transnet New Multi-Purpose Pipeline Project at Pump Stations 1 and 3 as well as Terminal 1.
- Environmental Officer (EO) for the Construction phase of the Moses Mabhida Stadium.
- Environmental Supervisor at the Warwick Triangle Viaduct

**CURRICULUM VITAE
CHEDA SHEILA MUNIONGO**

Profession : Environmental Consultant at Savannah Environmental
Specialisation : Environmental Management & GIS
Years experience : Four (environmental management), Six (GIS)

KEY RESPONSIBILITIES

- Providing consulting services to clients for Environmental-related matters
- Conducting Environmental Impact Assessment (EIA) processes
- Preparation of EIA reports.
- Environmental Compliance Auditing and Environmental Control Officer (ECO) services
- Creating maps for various projects

SKILLS BASE AND CORE COMPETENCIES

- EIA Reporting
- Site Investigations
- Environmental Auditing and compliance monitoring
- Co-ordination and management of project teams
- Co-ordinating and conducting Public Involvement processes.
- Administrative tasks (minutes of meetings)
- Research

EDUCATION AND PROFESSIONAL STATUS

Degrees:

- B Sc (Geography & Environmental Management) obtained from the University of Johannesburg in 2008
- BSc (Hons) (Environmental Management) obtained from the University of South Africa in 2010
- MSc (Environmental Management) – currently registered with the University of Johannesburg to be completed in 2015

Courses:

- Telephone impact training
- Microsoft access

EMPLOYMENT

1. June 2008 – January 2011

Name of Employer: Shango Solution

Position: GIS Consultant

2. February 2011 – May 2012

Name of Employer: Fourth Element Consulting

Position: Assistant Environmental and GIS Practitioner

3. June 2012 – Present

Name of Employer: Savannah Environmental

Position: Environmental and GIS Consultant

PROJECT EXPERIENCE:

ENVIRONMENTAL IMPACT ASSESSMENTS

1. Scoping, EIA Report & EMP for the Roodepoort Strengthening 400kV substation & 400kV power lines near Roodepoort, Gauteng
2. Scoping, EIA Report & EMP for the Merapi Solar Energy Facility, near Excelsior Free State
3. Scoping, EIA Report & EMP for the Sannaspos Solar Energy Facility, near Bloemfontein Free State
4. Scoping, EIA Report & EMP for the Blackwood Solar Energy Facility near Boshof, Free State.
5. Scoping, EIA Report & EMP for the Boundary Solar Energy Facility near Boshof, Free State.
6. Scoping, EIA Report & EMP for the Bosjesmansberg Solar Energy Facility near Copperton, Northern Cape.
7. Scoping, EIA Report & EMP for the Kheis Solar Energy Facilities near Grootdrik, Northern Cape
8. Basic Assessment Process for the Hillside 132kV substation and power line project near Middelburg, Mpumalanga Province
9. Basic Assessment Process for the Simthabi 132kV substation and power line project near Thabazimbi, Limpopo
10. Basic Assessment Process for the Avalon Cemetery Extension in Soweto, Gauteng

11. Basic Assessment Process for the Dinaledi-Spitskop Deviation 400kV power line project near Mogwase, North West Province
12. Basic Assessment Process for the Sannaspos Solar Energy Facility near Bloemfontein, Free State
13. Basic Assessment Process for the Machadodorp Solar Energy Facility near Machadodorp, Mpumalanga
14. Basic Assessment Process for the Damfontein Solar Energy Facility near Noupoot, Northern Cape
15. Basic Assessment Process for the Wonderheuvel Solar Energy Facility near Noupoot, Northern Cape
16. Basic Assessment Process for the TSE substation near Noupoot, Northern Cape

GIS MAPPING (ARC GIS 9.2, 10.2):

1. The Roodepoort Strengthening 400kV substation & 400kV power lines near Roodepoort, Gauteng
2. The Merapi Solar Energy Facility, near Excelsior Free State
3. The Sannaspos Solar Energy Facility, near Bloemfontein Free State
4. The Blackwood Solar Energy Facility near Boshof, Free State.
5. The Boundary Solar Energy Facility near Boshof, Free State.
6. The Bosjesmansberg Solar Energy Facility near Copperton, Northern Cape.
7. The Hillside 132kV substation and power line project near Middelburg, Mpumalanga Province
8. The Simthabi 132kV substation and power line project near Thabazimbi, Limpopo
9. The Avalon Cemetery Extension in Soweto, Gauteng
10. The Dinaledi-Spitskop Deviation 400kV power line project near Mogwase, North West Province
11. The Sannaspos Solar Energy Facility near Bloemfontein, Free State
12. The Machadodorp Solar Energy Facility near Machadodorp, Mpumalanga
13. The Damfontein Solar Energy Facility near Noupoot, Northern Cape
14. The Wonderheuvel Solar Energy Facility near Noupoot, Northern Cape
15. The Allemans Solar Energy Facility near Noupoot, Northern Cape
16. The Caroluspoot Solar Energy Facility near Noupoot, Northern Cape
17. The Gillmans Solar Energy Facility near Noupoot, Northern Cape
18. The TSE substation near Noupoot, Northern Cape
19. The Hidden Valley Wind Energy Facility near Sutherland, Northern Cape
20. The Umbani Power Station near Kriel, Mpumalanga
21. The Stormberg Wind & Solar Facility near Molteno in Eastern Cape
22. The Gunstfontein Wind Energy Facility near Sutherland, Northern Cape
23. The Garop Wind Energy Facility near Copperton, Northern Cape.
24. The Castle Wind Facility near De Aar, Northern Cape
25. The Zen Wind Facility near Gouda & Saron, Northern Cape
26. The Tsitsikama Wind Facility near Humansdorp, Eastern Cape
27. The Amakhala Wind Facility near Cookhouse, Eastern Cape
28. The Lorriesfontein Solar Facility near Lorrriesfontein, Northern Cape
29. The Gihon Solar Facility near Bela-Bela, North West
30. The Steynrus Solar Facility near Steynrus, Free State
31. The Zuurwater Solar Facility near Aggeneys, Northern Cape
32. The Sirius Solar Facility near Upington, Northern Cape
33. The Grootkop, Everest & Oxryx Solar Facility in Free State
34. The Upington Solar Thermal Plants near Upington, Northern Cape
35. The Rheeboksfontein Power Line near Hopefield, Western Cape
34. The Kheis Solar Energy Facilities near Grootdrik, Northern Cape
36. The Riverbank Power Line near Peddie, Eastern Cape
34. The Postmansburg Housing Development near Postmansburg, Northern Cape

ENVIRONMENTAL COMPLIANCE AUDITING AND ECO

Environmental Control Officer (monthly audits) undertaking environmental monitoring for the Dorper Wind Farm near Molteno in Eastern Cape (2014).

PUBLIC PARTICIPATION AND ENVIRONMENTAL EDUCATION / AWARENESS PROGRAMMES

1. Assisted in conducting the EIA for the Roodepoort Strengthening 400kV substation & 400kV power lines near Roodepoort, Gauteng
2. Assisted in conducting the Basic Assessment Process for the Avalon Cemetery Extension in Soweto, Gauteng

ENVIRONMENTAL SCREENING STUDIES

1. Environmental Screening Report for the Bosjesmansberg Solar Energy Facility near Copperton, Northern Cape

CURRICULUM VITAE

JO-ANNE THOMAS

Profession : Environmental Consultant
Specialisation : Environmental Management; Strategic environmental advice;
Environmental compliance advice & monitoring; Environmental Impact Assessments; Policy, strategy & guideline formulation; Project Management; General Ecology
Years experience : Sixteen (16) years in the environmental field

KEY RESPONSIBILITIES

Provide technical input for projects in the environmental management field, specialising in Strategic Environmental Advice, Environmental Impact Assessment studies, environmental permitting, public participation, Environmental Management Plans and Programmes, environmental policy, strategy and guideline formulation, and integrated environmental management. Key focus on integration of the specialist environmental studies and findings into larger engineering-based projects, strategic assessment, and providing practical and achievable environmental management solutions and mitigation measures. Responsibilities for environmental studies include project management; review and manipulation of data; identification and assessment of potential negative environmental impacts and benefits; review of specialist studies; and the identification of mitigation measures. Compilation of the reports for environmental studies is in accordance with all relevant environmental legislation.

Undertaking of numerous environmental management studies has resulted in a good working knowledge of environmental legislation and policy requirements. Recent projects have been undertaken for both the public- and private-sector, including compliance advice and monitoring, electricity generation and transmission projects, various types of linear developments (such as National Road, local roads and power lines), waste management projects (landfills), mining rights and permits, policy, strategy and guideline development, as well as general environmental planning, development and management.

SKILLS BASE AND CORE COMPETENCIES

- Project management for a range of projects
- Identification and assessment of potential negative environmental impacts and benefits through the review and manipulation of data and specialist studies
- Identification of practical and achievable mitigation and management measures and the development of appropriate management plans
- Compilation of environmental reports in accordance with relevant environmental legislative requirements
- External and peer review of environmental reports & compliance advice and monitoring
- Formulation of environmental policies, strategies and guidelines
- Strategic and regional assessments; pre-feasibility & site selection
- Public participation processes for a variety of projects
- Strategic environmental advice to a wide variety of clients both in the public and private sectors
- Working knowledge of environmental planning processes, policies, regulatory frameworks and legislation

EDUCATION AND PROFESSIONAL STATUS

Degrees:

B.Sc Earth Sciences, *University of the Witwatersrand, Johannesburg*, 1993

B.Sc Honours in Botany, *University of the Witwatersrand, Johannesburg*, 1994

M.Sc in Botany, *University of the Witwatersrand, Johannesburg*, 1996

Courses:

Environmental Impact Assessment, *Potchefstroom University*, 1998

Environmental Law, *Morgan University*, 2001

Professional Society Affiliations:

Professional Natural Scientist (Registration No 400024/00).

EMPLOYMENT

Current: Director of Savannah Environmental (Pty) Ltd. Independent specialist environmental consultant

October 1997-November 2005: Bohlweki Environmental (Pty) Ltd: Senior Environmental Scientist; Environmental Management and Project Management

January to July 1997: Junior Science Teacher, Sutherland High School, Pretoria

PROJECT EXPERIENCE

Current projects include:

Compliance Monitoring

- Project manager and auditor - ECO compliance monitoring for the construction of the De Hoop Dam and the deviation of the R555, Limpopo Province
- Project manager – ECO compliance at Kathu Solar Energy Facility, Northern Cape Province
- Project manager – ECO compliance at Sishen Solar Energy Facility, Northern Cape Province
- Project manager – ECO compliance at West Coast One Wind Energy Facility, Western Cape Province
- Project manager – ECO compliance at Gouda Energy Facility, West Coast Province
- Project manager – ECO compliance at Dorper Wind Energy Facility, Eastern Cape Province
- Project manager – ECO compliance monitoring for the !Khi CSP Facility near Upington, Northern Cape
- Project manager – ECO compliance monitoring for the KaXu! CSP facility near Pofadder, Northern Cape
- Project manager – ECO compliance monitoring for the Upington Airport PV facility at Upington, Northern Cape Province
- Project manager – ECO compliance at RustMo1 Solar Energy Facility, North West Province
- Project manager – Environmental Officers for Gamma-Kappa 765kV power line between Laingsburg and Beaufort West, Western Cape
- Project manager – ECO compliance monitoring for the rehabilitation of Blaauwpan Dam, Gauteng Province

- Project manager – ECO compliance monitoring for the expansion of Waterval WCW, Gauteng Province
- Project manager - ECO compliance monitoring for the Mine Water Recovery Project at Duvha Power Station, Mpumalanga Province

Compliance Advice and Due Diligence

- Compliance advice for Financial Close of West Coast One Wind Energy Facility, Western Cape Province
- Compliance advice for Financial Close of Tsitsikamma Wind Energy Facility, Eastern Cape Province
- Compliance advice for Financial Close of Uprising Solar Facility, Northern Cape Province
- Environmental Due Diligence of a wind energy facility in the Western Cape on behalf of EDPR Renewables
- Environmental Due Diligence of a wind energy facility on the West Coast of the Western Cape on behalf of ILF&S

Electricity Sector Projects: Coal-fired Power Stations

- Project manager for the EIA undertaken for the proposed Independent power Producer (IPP) Coal-fired Power Station and associated infrastructure near Lephalale within the Waterberg District Municipality of the Limpopo Province
- Project manager for the EIA undertaken for the proposed Umbani Coal-fired Power Station and associated infrastructure near Kriel, Mpumalanga Province
- Project manager for the EIA undertaken for the proposed Ruukki Coal-fired Power Station and associated infrastructure near Ogies, Mpumalanga Province

Electricity Sector Projects: Wind Energy

- Project manager for the EIA undertaken for the proposed EXXARO West Coast wind energy facility and associated infrastructure at a site within the Western Cape (for EXXARO Resources)
- Project manager for the EIA undertaken for the proposed Oyster Bay wind energy facility, Eastern Cape Province (for Renewable Energy Resources Southern Africa)
- Project manager for the EIA undertaken for the proposed Spitskop Bay wind energy facility, Eastern Cape Province (for Renewable Energy Resources Southern Africa)
- EIA and EMP for the proposed wind energy facility and associated infrastructure at a site within the Western Cape (for Eskom Generation)
- EIA and EMP for the proposed wind energy facility and associated infrastructure at a site near Hopefield, Western Cape Province (for Umoya Energy)
- Project manager for the proposed Klipheuwel/Dassiesfontein wind energy facility and associated infrastructure at a site within the Overberg area of the Western Cape (for BioTherm Energy)
- Project manager for the proposed Suurplaat wind energy facility and associated infrastructure at a site within the Western Cape (for Moyeng Energy)
- Project manager for the proposed West Coast One wind energy facility and associated infrastructure at a site within the Western Cape (for Moyeng Energy)
- Project manager for the proposed Rheboksfontein wind energy facility and associated infrastructure at a site within the Western Cape (for Moyeng Energy)
- Basic Assessment for proposed wind monitoring masts on a site north of Koekenaap, Western Cape Province (for EXXARO Resources)
- Basic Assessment for proposed wind monitoring masts on a site in the Overberg area, Western Cape Province (for BioTherm Energy)

- Basic Assessment for proposed wind monitoring masts on a site near Beaufort West, Western Cape Province (for Umoya Energy)
- Basic Assessment for proposed wind monitoring masts on a site near Laingsburg, Western Cape Province (for Umoya Energy)

Electricity Sector Projects: Solar Energy

- Project manager for the EIA and EMP for two PV sites within the Western and Northern Cape Provinces (for INCA Energy)
- Project manager for the Basic Assessment and EMP for PV site within the Northern Cape Province (for INCA Energy)
- Project manager for the Basic Assessment and EMP for a PV site near Rustenburg, North-West Province (for Momentous Energy) Project manager for the EIA and EMP for the proposed Project Ilanga (125MW CSP facility) near Upington, Northern Cape Province (for Ilangethu Energy)
- Project manager for the EIA and EMP for two PV sites within the Northern Cape Province (for MedEnergy Global)
- Project manager for the Basic Assessment and EMP for PV sites within 4 ACSA airports within South Africa (for ACSA PV)
- Project manager for the EIA and EMP for the proposed Waterberg PV plant, Limpopo Province (for Thupela Energy)

Electricity Sector Projects: Eskom

- Project manager for the EIA and EMP for the proposed Mokopane Integration Project, Limpopo Province (for Eskom Transmission)
- Project manager for the proposed transmission lines from the Koeberg-2 Nuclear Power Station site, Western Cape Province (for Eskom Transmission)
- Project manager for the proposed Tshwane strengthening project, Phase 1, Gauteng Province (for Eskom Transmission)
- Project manager for the EIA and EMP for the proposed Kyalami Strengthening Project, Gauteng Province (for Eskom Transmission)
- Project manager for the EIA and EMP for the proposed Steelpoort Integration Project, Limpopo Province (for Eskom Transmission)
- Project manager for the EIA and EMP for the proposed conversion of the existing Open Cycle Gas Turbine (OCGT) Ankerlig Power Station (located in Atlantis Industria) to a Combined Cycle Gas Turbine (CCGT) power station, and the associated 400 kV transmission power line between Ankerlig Power Station and the Omega Substation (for Eskom Generation)
- Project manager for the EIA and EMP for the proposed conversion of the existing Open Cycle Gas Turbine (OCGT) Gourikwa Power Station (located near Mossel Bay) to a Combined Cycle Gas Turbine (CCGT) power station, and the associated 400 kV transmission power line between Gourikwa Power Station and the Proteus Substation (for Eskom Generation)

Strategic and Regional Assessments

- Strategic Assessment for the location of wind energy facilities within the Western Cape Province (for Western Cape Department of Environmental Affairs and Development Planning)
- Regional Assessments for wind energy developments within identified areas in the Overberg Area of the Western Cape Province (for BioTherm Energy)
- Regional Assessment for wind energy developments within an identified area in the Sutherland Area of the Northern and Western Cape Province (for Investec Bank Limited)
- Regional Assessment for wind energy developments within an identified area on the West Coast of the Western Cape Province (for Investec Bank Limited)

- Regional Assessment for wind energy developments within an identified area on the West Coast of the Western Cape Province (for Eskom Holdings Limited)

Environmental Management Tools

- Review the effectiveness and efficiency of the environmental impact management (EIA) system in South Africa on behalf of the Department of Environmental Affairs and Tourism
- Development of a comprehensive site-specific EMP for the construction and operation of the Eskom Braamhoek Integration Project, Free State and KwaZulu-Natal Provinces
- Compilation of Provincial Guidelines for off-road routes within the Western Cape Province
- Environmental Risk Analysis for Salbro Property Holdings, Gauteng Province
- Water use permit applications for water use at Tiffindell Ski Resort, Eastern Cape Province

- Water use permit applications for various properties within the Olifants West Game Reserve, Limpopo Province
- Project integration and compilation of a Strategy for Sustainable Development for Gauteng Province
- Advice regarding environmental compliance of existing and future development at Tiffindell Ski, Eastern Cape Province
- Advice regarding environmental compliance at Salberg factory, Gauteng Province

Peer Review

- Review of EIAs submitted in terms of the ECA for the Northern Cape Department of Tourism, Environment and Conservation, including:
 - * EIA for a new wastewater treatment works in Warrenton
 - * EIA for chicken layer houses in Kimberley
 - * EIAs for the upgrading of petrol stations in Kimberley
 - * EIA for a new up-market residential development in Kathu
 - * EIA for residential development in Kimberley
- Review of EIA and EMP for the proposed Waterfall Wedge development, Gauteng Province

Infrastructure Projects

- Project manager for the EIA and EMP for the proposed bridge across the Ngotwane River located on the border of South Africa and Botswana

Mining Sector Projects

- Amendment of Environmental Management Programme for the Waterberg Colliery near Lephalale, Limpopo Province
- Amendment of EMPR for Grootegeluk Coal Mine near Lephalale, Limpopo Province, to include coal transportation infrastructure between the mine and Medupi Power Station
- Environmental Impact Assessment and Environmental Management Programme in terms of the MPRDA for the proposed Elitheni Coal Mine near Indwe, Eastern Cape Province
- Environmental Management Programmes for three borrow pits associated with the proposed Groot Letaba River Development Project, Limpopo Province

Water resources projects

- Project manager for the EIA and EMP for the proposed modification of the existing Hartebeestfontein Water Care Works, Gauteng Province (for ERWAT)
- Project manager for the EIA and EMP for the proposed expansion of the existing Welgedacht Water Care Works, Gauteng Province (for ERWAT)

Projects undertaken on behalf of Bohlweki Environmental include:

Specialist projects

- Development of an Environmental Policy for the Ekurhuleni Metropolitan Municipality
- Development of an Integrated Environmental Policy for the City of Tshwane Metropolitan Municipality Environmental Opportunities and Constraints Assessment for the Wonderboom Airport

Review of the State of the Environment Report for the North West Province

Transport sector projects

- Environmental Impact Assessment for the proposed Platinum Highway from Warmbaths via Pretoria to Skilpadhek (on the South Africa-Botswana border), including obtaining all environmental permits required.
- Environmental input to the Ekurhuleni transportation corridors study
- Environmental input to the Denneboom Local Integrated Transport Plan
- Environmental Impact Assessment and Environmental Management Plan for the proposed N2 Wild Coast Toll Road between East London (Eastern Cape) and Durban (KwaZulu-Natal)
- Environmental Scoping Study and public participation process for the upgrading of Provincial Main Road 100 between the intersection with Main Road 521 and Ndwedwe
- Environmental Management Plan for repairs of portions of the N3 and N1, Gauteng
- Environmental Scoping Study and public participation process for the Kingsway Relief Road in Maseru, Lesotho

Electricity Sector projects

- Project manager for the undertaking of an EIA and compilation of an EMP for the proposed Open Cycle Gas Turbine (OCGT) Power Station and associated 400 kV Transmission lines and substation at Atlantis, Western Cape Province
- Environmental Scoping Study for a new coal-fired power station in the Lephalale area, Limpopo Province
- Project manager for the undertaking of Environmental Scoping Study and compilation of an Environmental Management Plan for various 132 kV Sub-Transmission lines and substations within the Mpumalanga Province
- Detailed Environmental Scoping Study and public participation for the proposed Capacity Increase Project at Arnot Power Station, Mpumalanga Province
- Project manager for the undertaking of an Environmental Scoping Study and EMP for the proposed 132 kV sub-Transmission line between the GaRankuwa and Dinaledi substations, North West Province
- Project manager for the undertaking of an EIA for the proposed 765 kV Transmission line between the existing Hydra Substation (near De Aar) and the proposed Gamma Substation (near Victoria West), Northern Cape Province
- EIA & public participation for the proposed new Ikaros Substation and associated 400 kV Transmission line infrastructure, North West Province
- Environmental Scoping Study public participation for the Establishment of Eskom Infrastructure for Power Supply to the C-Cut Development at Premier Mine, Cullinan, Gauteng Province
- EIA & public participation for the proposed 3rd 400 kV Transmission line between the Poseidon and Grassridge Substations in the Eastern Cape Province
- EIA & public participation for the proposed new 400 kV Transmission line between Matimba Substation (near Lephalale) and Witkop Substation (near Polokwane), Limpopo Province

- Environmental Impact Study and public participation for the proposed 2nd 400 kV Transmission line between the Grassridge Substation and the Poseidon Substation in the Eastern Cape.
- Public Participation Process for the proposed Return-to-Service of the Camden Power Station, Mpumalanga Province
- Detailed Environmental Scoping Study and public participation for the Breyten Strengthening Project: proposed new Breyten Substation and associated 88 kV Distribution line, Mpumalanga Province
- Environmental Pre-Scoping Study for the proposed Concentrating Solar Plant, in the Northern Cape Province
Environmental Impact Assessment public participation for the proposed new nine 132 kV power lines between the Grassridge Substation and the Coega Industrial Development Zone, Eastern Cape Province

Pipelines

- Environmental Impact Assessment for the proposed Petronet New Multi-Products Pipeline (NMPP) between Durban and Gauteng Province
- Exemption application for the construction of a gas pipeline between Majuba Mine and Majuba Power Station, Mpumalanga Province.
- Exemption application for the construction of an emergency water supply pipeline from Mamelodi to Ekandustria via Cullinan, Gauteng Province.
- Environmental Scoping Study for the installation of a new water supply pipeline from Centurion to Diepsloot, Gauteng Province.

EIAs for Technology projects

- Environmental Impact Assessment for the proposed Alternative Fuels and Resources Project at Alpha's ULCO Plant near Kimberley in the Northern Cape Province
- Environmental Impact Assessment for the proposed Alternative Fuels and Resources Project at Dudfield Plant, North West Province
- Environmental Impact Assessment for the proposed Blending Platform to be established within the Gauteng Province
- Investigation of possible alternative Scrap tyre collection and disposal strategies in Gauteng, South Africa

Mining sector projects

- Environmental Management Programme Report (EMPR) for the proposed small-scale kaolin clay mine near Ndwedwe, KwaZulu-Natal Province
- Environmental Management Programme Report (EMPR) for prospecting activities within the Premier Mine Game Farm, Cullinan for De Beers Consolidated Mines Limited
- Environmental Management Plan for the Proposed C-Cut Development at Premier Mine, Cullinan
- Environmental Management Programme Report for the Proposed C-Cut Development at Premier Mine, Cullinan
- Environmental Impact Assessment and public participation process for the Proposed C-Cut Development at Premier Mine, Cullinan

Development projects

- A detailed Environmental Scoping Study and public participation process for the Thaba ya Batswana Development on portions of the Farm Rietvlei 101 IR, Gauteng
- Environmental Scoping Report and public participation process for the development of a Community Safety Centre in Khutsong-South, Carletonville

Water resources projects

- A detailed Environmental Impact Assessment of new regional water care infrastructure in the DD5A sub-drainage district in Eastern Gauteng (adjacent to the Blesbokspruit Ramsar Site) for the East Rand Water Care Company (ERWAT)

CURRICULUM VITAE

MEGAN DIAMOND

Avifauna specialist for Feathers Environmental Services cc

SKILLS BASE AND CORE COMPETENCIES

- Provision of strategic guidance to industry through the development of best practice procedures and guidelines.
- Peer review and comment on methodologies, specialist studies and EIA reports for Renewable Energy projects;
- Provision of specialist avifaunal input into new or existing renewable energy and power line developments on a national scale, as well as in Africa and across the globe.
- Provision of training related to bird and energy infrastructure interactions and their mitigation.
- Registered with the South African Council for Natural Scientific Professions.

EMPLOYMENT HISTORY

- Managing Member, Feathers Environmental Services cc (2013-present) – a Johannesburg-based company that promotes sustainable conservation of biodiversity and aims to assist its clients with the management of avifaunal communities in order to minimise the various interactions, commonly associated with energy infrastructure developments.
- EWT Wildlife & Energy Programme Manager and Eskom/EWT Strategic Partnership Manager, Endangered Wildlife Trust (2010-2013) – responsible for assisting the energy industry and the national utility in minimising the negative impacts (associated with electrical infrastructure) on wildlife through the provision of strategic guidance, risk and impact assessments, training and research.

TERTIARY EDUCATION

- BSc Degree in Environmental Management (Zoology), University of South Africa

SELECTED RELEVANT PROJECT EXPERIENCE

- Several specialist avifaunal assessments for Eskom Transmission substation and powerline EIA projects (Umfolozi – Empangeni 765kV; Etna – Glockner 400kV; Epsilon Substation and 400kV power line turn-ins; Malelane substation and 275kV power line turn-ins and the Mokopane Integration project).
- Over thirty specialist avifaunal assessments for Eskom Distribution substation and powerline EIA projects in the Gauteng, North West, Limpopo and Mpumalanga provinces.
- Power line walk-throughs (Gamma Hydra 765kV; Dedisa-Grassridge 400kV; Hydra Perseus 765kV; Etna-Glockner 400kV; Simmerpan Integration 400kV and Masa Ngwedi 765kV and 400kV).
- Strategic Environmental Assessments for Master Electrification Plans.
- Preconstruction monitoring data analysis of the Cookhouse and Kouga Wind Energy Facilities.
- Peer Review of the monitoring methodologies and reports of Stormberg, Gunstfontein, Goeresoe and Gibson Bay Wind Energy Facilities.
- Guidance on avian post construction monitoring techniques for renewable energy developments with specific reference to Migrating Soaring Birds (MSB's) in the Rift Valley-Red Sea Flyway

CURRICULUM VITAE

MARIANNE STROHBACH

SAVANNAH ENVIRONMENTAL (PTY) LTD

Profession : Specialist Scientist

Specialisation: Plant Ecology and Botany, with special reference to vegetation mapping, vegetation state assessment, dynamics of arid and semi-arid vegetation and population dynamics of harvested plants, conservation planning

Work experience: Twenty (20) years active in Plant Ecology

SKILLS BASE AND CORE COMPETENCIES

- Four years Plant Conservation (Namibia)
- 16 years active research in vegetation mapping, vegetation state assessment, vegetation and plant population dynamics, long-term vegetation monitoring
- Advisory to International Standards for plant species that are harvested for commercial purposes
- Research Project Management
- Ecological assessments for developmental purposes (BAR, EIA)
- Working knowledge of environmental planning policies, regulatory frameworks and legislation
- Identification and assessment of potential environmental impacts and benefits
- Development of practical and achievable mitigation measures and management plans and evaluation of risk to project execution
- Experienced in environmental monitoring
- Completed projects in several Provinces of South Africa, as well as Zimbabwe and Namibia

EDUCATION AND PROFESSIONAL STATUS

Degrees:

2003 M.Sc. in Botany, University of Pretoria, Pretoria, RSA

1991 B.Sc. Hons in Botany, Nelson Mandela Metropolitan University, Port Elizabeth, RSA

1990 B.Sc. in Biological Sciences, Nelson Mandela Metropolitan University, Port Elizabeth

Short Courses:

2008 Landscape Functional Analysis for vegetation condition and restoration monitoring

2002 Satellite Image Analysis for Vegetation Mapping, German Aerospace Centre (DLR) Cologne/Würzburg, Germany

Methods and Techniques of Environmental Management, Deutsche Stiftung für Internationale Entwicklung, Berlin, Germany

1993 Conservation Law Enforcement, Ministry of Environment and Tourism, Namibia

Professional Society Affiliations:

South African Association for Botanists

Association of Desert Net International

The South African Council for Natural Scientific Professions: Pr. Sci. Nat. Reg. No. 400079/10
(Botany and Ecology)

Publications:

Peer- reviewed scientific journal articles

Book-chapters

Popular articles

Scientific conferences

Contributions to TV documentaries

Project-specific reports

EMPLOYMENT

Current: Ecologist, Savannah Environmental (Pty) Ltd

2011: Lecturer, Plant Ecology, University of Pretoria

1997 onwards: working as vegetation ecologist on a freelance basis, involved in part-time positions and contractual research as outlined below

1995 to 1996: Agricultural Researcher at the National Botanical Research Institute, Windhoek, Namibia

1992 to 1995: Vegetation ecologist at the Ministry of Environment and Tourism, Namibia, Directorate of Scientific Services

Past Affiliations and Research

2001 – 2010: contractual work with BIOTA (BIODiversity Transect analysis in Africa) as affiliate to the National Botanical Research Institute, Namibia.

Deliverables:

Project management, including research proposal, financial management, and project implementation.

Modelling of Savanna Dynamics:

Collating and summarising available phytosociological data for ecological modellers to use in creating a generic savanna model for the Namibian savannas

Defining plant functional types to simplify vegetation data and to use as indicators in monitoring techniques by livestock farmers

Vegetation Patterns and Processes in Namibian Savannas:

Small scale monitoring of vegetation dynamics over a range of soil conditions and seasons

Determine ecological barriers to and best practice for rangeland restoration

Vegetation classification and mapping in Central Namibia:

Collection and analysis of phytosociological baseline data for the central Thornbush Savanna in Namibia, delineation of vegetation types with the aid of satellite imagery

2006: German Scientific Authority to CITES, Plants, Federal Agency for Nature Conservation

International Standard for the Sustainable Wild Collection of Medicinal & Aromatic Plants

Assisting in the compilation of a reference guide for minimum research standards necessary to ensure sustainable use of economically utilised plants (updated in FairWild Standard Version 2, 2010)

2004: contractual work for Desert Research Foundation of Namibia

Vegetation description and mapping of the Namibian Eastern Communal Areas and assess possible development options using indigenous plant resources

1997 to 2010: contractual work with CRIAA-SADC as ecologist.

Deliverables:

The Sustainably Harvested Devil's Claw Project:

Annual surveys of Harpagophytum populations to determine harvesting quotas for rural communities

Determine and monitor impact of harvesting frequency and techniques on survival of Harpagophytum procumbens

Educate harvester communities on issues of resource management

In collaboration with the German Federal Agency for Nature Conservation

This work was extended in 2006 to the Hwange Area, NW Zimbabwe, together with Africa Now

Pilot Devil's Claw cultivation trials:

Increase available resources of Harpagophytum procumbens

Give communities ownership and better access of their resources to improve their income

Namibian National Devil's Claw Situation Analysis:

Design and implement a country-wide survey of Harpagophytum species to assess resource availability compared to annual export figure

1999 to 2001: Assistant curator at the Swakopmund Museum (part-time position)

Help maintain existing collections and exhibits, design and create new exhibits for the museum in collaboration with the Museum Hannover, Germany

Specialist Scientist Vegetation Surveys and related Impact Assessments were done for following clients:

Langer Heinrich Uranium Pty (Ltd): Central Namib Desert, Namibia

University of Namibia, Hentiesbay Research Centre: West Coast, Namibia

Sasol – Limpopo Province

EcoAgent – Northern Cape, Eastern Cape, Limpopo and Mpumalanga

Namwater – Karst aquifers, north-central Namibia

ENVASS (for AfriDevo) – Northern Cape

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: 082 324 5389

Prof Robin Barnard, ARC-Institute for Soil, Climate and Water
Tel: 012 310 2549

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

CURRICULUM VITAE
JACO VAN DER WALT

Profession : Archaeologist

Specialisation : Cultural Resource Management and Iron Age Archaeology

Work experience : 10 years

SKILLS BASE AND CORE COMPETENCIES

- Archaeological Impact Assessments
- Heritage Impact Assessments
- Heritage Management Plans
- Archaeological research projects
- Cultural resource management
- Phase II cultural resource management projects: archaeological excavations
- Grave relocation
- Project Management

TERTIARY EDUCATION

- 2001, BA Archaeology (Cultural Heritage Tourism), University of Pretoria (SA)
- 2002, BA Archaeology (Hons) , University of Witwatersrand (SA)
- Present, Masters Archaeology, University of Witwatersrand (SA)

EMPLOYMENT HISTORY

- 2011 – Present: Founder and owner of Heritage Contracts and Archaeological Consulting CC. 2007 – 2010: CRM Archaeologist, Managed the Heritage Contracts Unit at the University of the Witwatersrand
- 2005 - 2007: CRM Archaeologist, Director of Matakoma Heritage Consultants
- 2004: Technical Assistant, Department of Anatomy University of Pretoria
- 2003: Archaeologist, Mapungubwe World Heritage Site Archaeological Rehabilitation Project
- 2001 - 2002: CRM Archaeologists, For R & R Cultural Resource Consultants, Polokwane
- 2000: Museum Assistant, Fort Klapperkop, Pretoria

SELECTED RELEVANT PROJECT EXPERIENCE

- Archaeological Impact Assessment for the Chronimet Underground Mine, Opencast mine, process plant, Amandelbult, Limpopo Province.
- Archaeological And Palaeontological Impact Assessment For The Updated EMP for Trans Hex Mining Operations, Richtersveld, Northern Cape
- Archaeological Impact Assessment for Sasol's project Mafuta, Lephalale, Limpopo Province.
- Archaeological and Heritage Statement for the Proposed Lg5 Opencast Mining Area, North West Province
- Field supervisor at Mapungubwe (World Heritage Site) Archaeological Rehabilitation project
- Field Director for Iron Age mitigation for chrome Mining by Herculite Ferrochrome, North West Province.
- Field Director phase 2 documentation for The Heads Trust, Heritage Assessment, and monitoring for Lydenburg Ext 38 housing development, Lydenburg, Mpumalanga, principle investigator Prof. T. Huffman
- Field Director phase 2 documentation for Sterkspruit housing development, Lydenburg, Mpumalanga.
- Field Director Middle Iron Age Mitigation For Wesizwe Platinum mining, principle investigator.
- Field Director Phase 2 documentation of Khoni Iron Age Settlement Lydenburg.
- Field Director for the Archaeological Mitigation For Booyendal Platinum Mine, Steelpoort, Limpopo Province.
- Monitoring of heritage sites affected by the ARUP Transnet Multipurpose Pipeline from Jhb to Durban
- Field Director for the Phase 2 mapping of a late Iron Age site located on the farm Kameelbult, Zeerust, North West Province.

**CURRICULUM VITAE
CANDICE HUNTER**

Profession : Social Consultant
Specialisation : Social Impact Assessments (SIA)
Years' experience : 1 year and 1 month

KEY RESPONSIBILITIES

Specific responsibilities as a Social Consultant involve conducting field research; socio-economic surveys; the management and analysis of data; undertaking stakeholder engagement and communication processes; socio-economic baseline data analyses and conducting general social research for a variety of projects. This includes managing and coordinating the Social Impact Assessment (SIA) processes and compiling SIA reports in line with the countries guidelines and legislation.

SKILLS BASE AND CORE COMPETENCIES

- Social Impact Assessment (SIA)
- Basic Assessment Process
- EIA Legislation
- Qualitative and Quantitative Social Research
- Social assessment (Stakeholder and Social Analysis)
- Field research & socio-economic surveys
- Baseline socio-economic data analyses
- Stakeholder engagement
- Public participation process
- Communication and community facilitation
- Report Writing
- Project administration

EDUCATION AND PROFESSIONAL STATUS

Degrees:

M. A. Environmental Management: University of Johannesburg (2013)

B.A. Honours Tourism Development (Cum Laude): University of Johannesburg (2010)

Courses:

Advanced Certificate in Social Impact Assessment (SIA) (Cum Laude): University of Johannesburg (2013)

Certificate in Global Reporting Initiative (GRI), Sustainability Reporting Process: Environmental & Sustainable Solutions CC (2012)

EMPLOYMENT

January 2014 – Current:

Savannah Environmental (Pty) Ltd: Social Consultant

February 2011 – January 2013:

University of Johannesburg: Department of Geography, Environmental and Energy Studies & School of Tourism and Hospitality (STH): Student and Research Assistant.

PROJECT EXPERIENCE

Social Impact Assessment Reports:

- January 2014: Specialist SIA study for the proposed Gihon Solar Energy Facility & Associated Infrastructure Located near Bela-Bela, Limpopo Province (for Networx SA)
- March 2014: Specialist social scoping study for the proposed Exheredo Photovoltaic (PV) Solar Energy Facility and associated infrastructure located near Kenhardt, Northern Cape Province (for Kotulo Tsatsi Energy (Pty) Ltd)
- May 2014: Specialist social scoping study for the proposed Wolmaransstad Municipality Solar Energy Facility and associated infrastructure near Wolmaransstad, North West Province (for Bluewave Capital (Pty) Ltd)
- July 2014: Specialist SIA study for the proposed Newcastle Solar Energy Facility near Newcastle, KwaZulu Natal (for Building Energy SpA)
- July 2014: Specialist SIA study for the proposed Pongola Solar Energy Facility near Pongola, KwaZulu Natal (for Building Energy SpA)
- July 2014: Specialist SIA study for the proposed Senekal 1 Solar Energy Facility near Mkuze, KwaZulu Natal (for Building Energy SpA)
- July 2014: Specialist SIA study for the proposed Senekal 2 Solar Energy Facility near Mkuze, KwaZulu Natal (for Building Energy SpA)
- October 2014: Specialist SIA study for the proposed Kotulo Tsatsi Energy Concentrated Solar Power (CSP) Tower Plant 3 facility and associated infrastructure located near Kenhardt, Northern Cape Province (for Kotulo Tsatsi Energy (Pty) Ltd)
- November 2014: Specialist social scoping study for the proposed Lethabo Solar Energy Facility and associated infrastructure near Sasolburg, Free State Province (for Eskom Holdings (SOC) Limited)
- November 2014: Specialist social scoping study for the proposed Majuba Solar Energy Facility and associated infrastructure near Amesforort, Mpumalanga Province (for Eskom Holdings (SOC) Limited)

Social Impact Assessment Reports:

- November 2014: Specialist social scoping study for the proposed Tutuka Solar Energy Facility and associated infrastructure near Standerton, Mpumalanga Province (for Eskom Holdings (SOC) Limited)
 - December 2014: Specialist social scoping study for the proposed 120MW CPV Facility and associated infrastructure near Upington, Northern Cape Province (for Lambrius Energy (Pty) Ltd)
 - January 2015: Specialist social scoping study for the proposed Beaufort West Solar Power Plant 1 near Beaufort West, Western Cape Province (for Beaufort West Solar Company 1 (Pty) Ltd)
 - January 2015: Specialist social scoping study for the proposed Beaufort West Solar Power Plant 2 near Beaufort West, Western Cape Province (for Beaufort West Solar Company 1 (Pty) Ltd)
 - January 2015: Specialist social scoping study for the proposed Beaufort West Solar Power Plant 3 near Beaufort West, Western Cape Province (for Beaufort West Solar Company 1 (Pty) Ltd)
-

Other Projects:

- June 2014: Screening and pre-feasibility report- Site assessment for the proposed Wind Energy Facility near Van Reenen, KwaZulu Natal and Free State Provinces (for 4Green Development SA)

CURRICULUM VITAE

JONATHAN H. MARSHALL

Landscape Architect and Environmental Assessment Practitioner for Environmental Planning & Design cc

SKILLS BASE AND CORE COMPETENCIES

- Chartered Landscape Architect (UK).
- Certified Environmental Assessment Practitioner of South Africa.
- Visual Impact Assessment utilising the the Government of the Western Cape Guideline for Involving Visual and Aesthetic Specialists in EIA Processes and the Landscape Institute and Institute of Environmental Management and Assessment (UK) Guidelines for Landscape and Visual Impact Assessment.

EMPLOYMENT HISTORY

- Landscape Assistant, WS Atkins (UK) 1979 – 1981.
- Landscape Architect, Brian Clouston and Partners (Hong Kong) 1981 – 1989.
- Director, Brian Clouston and Partners (Australia) 1989 - 1990.
- Principal Landscape Architect, Gillespies (UK) 1990 – 1992.
- Principal, Opus Environment (UK) 1992 – 1995.
- Director, Environmental Design Partnership (SA) 1995 – 1998.
- Principal, Environmental Planning and Design (SA) 1998 – present.

TERTIARY EDUCATION

- Diploma in Landscape Architecture, Gloucestershire College of Art and Design, UK (1979).
- Environmental Law Short Course, University of KZN (1997)

SELECTED RELEVANT PROJECT EXPERIENCE

Visual impact assessments for developments in the Hong Kong, the UK, Ghana Guinea, Gauteng, Free State, KwaZulu Natal, Mpumalanga. Examples of larger projects include:

- Solar plant projects including photovoltaic and concentrating solar power plants – Numerous projects for Eskom and private clients in the Northern Cape, Limpopo, Mpumalanga and the Free State.
- Proposed new mines and tailings facilities associated with existing mines in Ghana and Guinea.
- Four major shopping centre developments including projects in the UK and South Africa.
- A new international airport development to the north of Durban.
- Heavy industrial developments including a ferrochrome smelter in Richards Bay.
- Numerous new road and road upgrade proposals including projects in Hong Kong, the UK and South Africa.
- Long term landfill planning in the Durban area.
- Numerous power line proposals including projects for Eskom in the Free State and KwaZulu Natal.
- Aesthetic guideline documents including building massing in Hong Kong, development around estuaries in KwaZulu Natal.
- The provision of visual impact assessments as evidence for legal processes including parliamentary debate (UK), public enquiry (UK) and planning appeal (South Africa)
- Review of specialist reports prepared by other experts.

CURRICULUM VITAE

ROBERT W. TAYLOR

Ecologist

SKILLS BASE AND CORE COMPETENCIES

Ecology

- Competent in the identification of alien plants, their impacts, and the methods of their removal.
- Competent in the identification of grasses and their grazing value for the use in veld condition assessments.
- Competent with wetland indicator species for the use in wetland delineation.
- Familiar with Lowveld and Kwa-Zulu Natal trees and various methods of plant population/community monitoring.

GIS - Spatial Analysis

- Competent in the use of ArcGIS software for mapping and data management.
- Competent in the design and management of CyberTracker databases.

EMPLOYMENT HISTORY

- Senior research technician for the South African Environmental Observation Network (SAEON) Phalaborwa Ndlovu node, 2011-2013.
- Ecological consultant, 2014-present.

TERTIARY EDUCATION

- BSc Grassland Science, UKZN (2009).
- BSc Hons Ecology, UKZN (2010)

SELECTED RELEVANT PROJECT EXPERIENCE

Wetland delineations and assessments for developments, biodiversity monitoring and veld condition assessments in KwaZulu Natal, Free State, Northwest Province, Limpopo and Mpumalanga. Examples of recent projects include:

- Vosbreet Boerdery wetland delineation, KZN
- Legacy Park wetland delineation, KZN
- Chubby Chick rendering plant wetland delineation and assessment, Northwest
- Leeuwfontein farm veld condition assessment, Free State
- Palabora Mining Company biodiversity monitoring, Limpopo

Resumé: Dr Barry Dean Millstead

Qualifications

B.Sc Geology (Hons), University of Wollongong, Australia, 1982 -1985

Ph.D Geology, University of Queensland, Australia, 1986 - 1997

Professional Institutes

South African Council for Natural Scientific Professions (Reg No 400332/07)

Geological Society of South Africa

Paleontological Society of South Africa

Relevant Career Experience

Various: 2006 –2013

Position: Consulting Geologist

- **2012 Manganese, Zimbabwe**
Appraisal of geological setting and mineralisation style of vein-hosted manganese deposits.
- **2012 Palaeontological Impact Assessment Report, Gauteng**
Preparation of a Palaeontological Impact Assessment Report on the site of proposed civil construction project in southern Gauteng Province.
- **2012 Palaeontological Impact Assessment Report, Mpumalanga**
Preparation of a Palaeontological Impact Assessment Report on the site of proposed civil construction project near Waterval Boven, Mpumalanga Province.
- **2012 Gold, Sudan**
Field verification program of remote sensing characterisation of structurally deformed Precambrian age igneous and sedimentary strata. A significant component of the study involved the collection of geological data and lithological samples for assay. Compilation of exploration program.
- **2012 Gold, Eastern Democratic Republic of Congo**
Planning and implementation of a detailed soil and stream sediment sampling programs as well as structural and lithological mapping program covering approximately 300km² in the structurally deformed, gold-bearing strata of the Kibaran Orogeny. Lithological and structural mapping formed a significant component of the study. The project resulted in a detailed assessment of the economic potential of a number of prospecting concession areas.
- **2012 Building Sand and Brick Clay, Western Cape**
Planning and implementation of a detailed pitting and sampling program within Cainozoic age sediments to determine the economic potential of sand and clay deposits.
- **2011 Mine Works Program, Mpumalanga**
Preparation of a Mine Works Program for a proposed gravel quarry in the Mpumalanga
- **2011 Copper, Democratic Republic of Congo**
Lithological and structural mapping of an area of approximately 320 km² in the structurally deformed Katangan Copper Belt sequence resulting in the production of geological maps and a structural synthesis. Interpretation of mineralization style and genesis as well as generation of exploration targets were significant outputs of the fieldwork program.
- **2011 Palaeontological Impact Assessment Report, Northern Cape**
Preparation of a Palaeontological Impact Assessment Report on the site of proposed manganese mine, Northern Cape.
- **2009 Alluvial Diamonds, Mozambique**
Desktop appraisal of the geological potential for alluvial diamonds in a selected area of eastern Mozambique.
- **2009 Mine Works Program**
Preparation of a Mine Works Program for a proposed brick clay quarry, eastern Western Cape Province.
- **2007 Lead/Zinc, Nigeria**
Desktop low level due diligence report on a predominantly lead/zinc hosting vein deposit Located in Nigeria.
- **2007 Building Sand/ Ceramic Clay, Western Cape**
Planning and implementation of a detailed pitting and sampling program within Cainozoic age sediments to determine the economic potential of sand and clay deposits.
- **2007 Brick Clay, Western Cape**
Planning and implementation of a due diligence study of an operating clay quarry to ascertain the quantity and quality remaining clay resources as well as identification of possible negative environmental issues that may constitute a barrier to utilisation of remaining resources. The study resulted in a calculation of potential life of mine and a valuation for the deposit.

- **2007 Gold, Northern Free State**

Desktop study to identify the location of historical exploration boreholes and field-based follow-up and location validation survey. These activities formed part of a larger due diligence study.

- **2007-2011 Uranium, Karoo**

The majority of this time has been involved in the management of an extensive exploration programme for sediment hosted uranium in the Karoo of South Africa. This project was taken through all exploration phases from the point of initiation through satellite and air photo interpretation, managing of air-borne geophysical surveys and interpretation of the results, extensive field mapping, target generation through to (and including) the drilling and initial resource calculations.

Universities of KZN and Durban-Westville : 2003 - 2006

Position: Lecturer, Geology

Role: During the tenure of this position a number of courses were produced and presented including stratigraphic principles, sedimentary basin analysis, Precambrian geology of South Africa, palaeontology, a half-year first year level course on Earth's surface processes which contained a one semester set of practical exercises based on understanding and interpretation of geological maps.

Council for Geoscience: 1990 - 2000

Position: Research Scientist

Role: Conducting research programs, including responsibility for identification of research needs, planning and conduct of research. Production of research reports and papers. Research was predominantly centred the stratigraphy of southern African Karoo-age sedimentary basins. Research programs were a combination of biostratigraphic, and purely stratigraphic research, combining sedimentological, biostratigraphic, and climatological data. The scale of investigation varied between local and broad scale international correlations. As a result a broad knowledge of world wide, late Palaeozoic and Mesozoic continental sedimentary systems was developed.