

CURRICULUM VITAE OF JO-ANNE THOMAS

Profession:	Environmental Management and Compliance Consultant; Environmental Assessment Practitioner
Specialisation:	Environmental Management; Strategic environmental advice; Environmental compliance advice & monitoring; Environmental Impact Assessments; Policy, strategy & guideline formulation; Project Management; General Ecology
Work experience:	Twenty one (21) years in the environmental field

VOCATIONAL EXPERIENCE

Provide technical input for projects in the environmental management field, specialising in Strategic Environmental Advice, Environmental Impact Assessment studies, environmental auditing and monitoring, 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 (including client and authority liaison and management of specialist teams); 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)

Short Courses:

- Environmental Impact Assessment, Potchefstroom University (1998)
- Environmental Law, Morgan University (2001)
- Environmental Legislation, IMBEWU (2017)
- Mining Legislation, Cameron Cross & Associates (2013)
- Environmental and Social Risk Management (ESRM), International Finance Corporation (2018)

Professional Society Affiliations:

- Registered with the South African Council for Natural Scientific Professions as a Professional Natural Scientist: Environmental Scientist (400024/00)
- Registered with the International Associated for Impact Assessment South Africa (IAIASa): 5601
- Member of the South African Wind Energy Association (SAWEA)

EMPLOYMENT

Date	Company	Roles and Responsibilities
January 2006 - Current	Savannah Environmental (Pty) Ltd	Director Project manager Independent specialist environmental consultant, Environmental Assessment Practitioner (EAP) and advisor.
1997 – 2005	Bohlweki Environmental (Pty) Ltd	Senior Environmental Scientist at. Environmental Management and Project Management
January – July 1997	Sutherland High School, Pretoria	Junior Science Teacher

PROJECT EXPERIENCE

Project experience includes large infrastructure projects, including electricity generation and transmission, wastewater treatment facilities, mining and prospecting activities, property development, and national roads, as well as strategy and guidelines development.

RENEWABLE POWER GENERATION PROJECTS: PHOTOVOLTAIC SOLAR ENERGY FACILITIES

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Christiana PV 2 SEF, North West	Solar Reserve South Africa	Project Manager & EAP
De Aar PV facility, Northern Cape	iNca Energy	Project Manager & EAP
Everest SEF near Hennenman, Free State	FRV Energy South Africa	Project Manager & EAP
Graafwater PV SEF, Western Cape	iNca Energy	Project Manager & EAP
Grootkop SEF near Allanridge, Free State	FRV Energy South Africa	Project Manager & EAP
Hertzogville PV 2 SEF with 2 phases, Free State	SunCorp / Solar Reserve	Project Manager & EAP
Karoshhoek CPV facility on site 2 as part of the larger Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP

Project Name & Location	Client Name	Role
Kgabalatsane SEF North-East for Brits, North West	Built Environment African Energy Services	Project Manager & EAP
Kleinbegin PV SEF West of Groblershoop, Northern Cape	MedEnergy Global	Project Manager & EAP
Lethabo Power Station PV Installation, Free State	Eskom Holdings SoC Limited	Project Manager & EAP
Majuba Power Station PV Installation, Mpumalanga	Eskom Holdings SoC Limited	Project Manager & EAP
Merapi PV SEF Phase 1 – 4 South-East of Excelsior, Free State	SolaireDirect Southern Africa	Project Manager & EAP
Sannaspos Solar Park, Free State	SolaireDirect Southern Africa	Project Manager & EAP
Ofir-Zx PV Plant near Keimoes, Northern Cape	S28 Degrees Energy	Project Manager & EAP
Oryx SEF near Virginia, Free State	FRV Energy South Africa	Project Manager & EAP
Project Blue SEF North of Kleinsee, Northern Cape	WWK Development	Project Manager & EAP
S-Kol PV Plant near Keimoes, Northern Cape	S28 Degrees Energy	Project Manager & EAP
Sonnenberg PV Plant near Keimoes, Northern Cape	S28 Degrees Energy	Project Manager & EAP
Tutuka Power Station PV Installation, Mpumalanga	Eskom Transmission	Project Manager & EAP
Two PV sites within the Northern Cape	MedEnergy Global	Project Manager & EAP
Two PV sites within the Western & Northern Cape	iNca Energy	Project Manager & EAP
Upington PV SEF, Northern Cape	MedEnergy Global	Project Manager & EAP
Vredendal PV facility, Western Cape	iNca Energy	Project Manager & EAP
Waterberg PV plant, Limpopo	Thupela Energy	Project Manager & EAP
Watershed Phase I & II SEF near Litchtenburg, North West	FRV Energy South Africa	Project Manager & EAP
Alldays PV & CPV SEF Phase 1, Limpopo	BioTherm Energy	Project Manager & EAP
Hyperion PV Solar Development 1, 2, 3, 4, 5 & 6	Building Energy	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Aberdeen PV SEF, Eastern Cape	BioTherm Energy	Project Manager & EAP
Christiana PV 1 SEF on Hartebeestpan Farm, North-West	Solar Reserve South Africa	Project Manager & EAP
Heuningspruit PV1 & PV 2 facilities near Koppies, Free State	Sun Mechanics	Project Manager & EAP
Kakamas PV Facility, Northern Cape	iNca Energy	Project Manager & EAP
Kakamas II PV Facility, Northern Cape	iNca Energy	Project Manager & EAP
Machadodorp 1 PV SEF, Mpumalanga	Solar To Benefit Africa	Project Manager & EAP
PV site within the Northern Cape	iNca Energy	Project Manager & EAP
PV sites within 4 ACSA airports within South Africa, National	Airports Company South Africa (ACSA)	Project Manager & EAP
RustMo1 PV Plant near Buffelspoort, North West	Momentous Energy	Project Manager & EAP
RustMo2 PV Plant near Buffelspoort, North West	Momentous Energy	Project Manager & EAP
RustMo3 PV Plant near Buffelspoort, North West	Momentous Energy	Project Manager & EAP
RustMo4 PV Plant near Buffelspoort, North West	Momentous Energy	Project Manager & EAP
Sannaspos PV SEF Phase 2 near Bloemfontein, Free State	SolaireDirect Southern Africa	Project Manager & EAP
Solar Park Expansion within the Rooiwal Power Station, Gauteng	AFRKO Energy	Project Manager & EAP
Steynsrus SEF, Free State	SunCorp	Project Manager & EAP

Project Name & Location	Client Name	Role
Sirius Solar PV Project Three and Sirius Solar PV Project Four (BA in terms of REDZ regulations), Northern Cape	SOLA Future Energy	Project Manager & EAP

Screening Studies

Project Name & Location	Client Name	Role
Allemans Fontein SEF near Noupoot, Northern Cape	Fusion Energy	Project Manager & EAP
Amandel SEF near Thabazimbi, Limpopo	iNca Energy	Project Manager & EAP
Arola/Doornplaat SEF near Ventersdorp, North West	FRV & iNca Energy	Project Manager & EAP
Bloemfontein Airport PV Installation, Free State	The Power Company	Project Manager & EAP
Brakspruit SEF near Klerksorp, North West	FRV & iNca Energy	Project Manager & EAP
Carolus Poort SEF near Noupoot, Northern Cape	Fusion Energy	Project Manager & EAP
Damfontein SEF near Noupoot, Northern Cape	Fusion Energy	Project Manager & EAP
Everest SEF near Welkom, Free State	FRV & iNca Energy	Project Manager & EAP
Gillmer SEF near Noupoot, Northern Cape	Fusion Energy	Project Manager & EAP
Grootkop SEF near Allansridge, Free State	FRV & iNca Energy	Project Manager & EAP
Heuningspruit PV1 & PV 2 near Koppies, Free State	Cronimat	Project Manager & EAP
Kimberley Airport PV Installation, Northern Cape	The Power Company	Project Manager & EAP
Kolonnade Mall Rooftop PV Installation in Tshwane, Gauteng	Momentous Energy	Project Manager & EAP
Loskop SEF near Groblersdal, Limpopo	S&P Power Unit	Project Manager & EAP
Marble SEF near Marble Hall, Limpopo	S&P Power Unit	Project Manager & EAP
Morgenson PV1 SEF South-West of Windsorton, Northern Cape	Solar Reserve South Africa	Project Manager & EAP
OR Tambo Airport PV Installation, Gauteng	The Power Company	Project Manager & EAP
Oryx SEF near Virginia, Free State	FRV & iNca Energy	Project Manager & EAP
Rhino SEF near Vaalwater, Limpopo	S&P Power Unit	Project Manager & EAP
Rustmo2 PV Plant near Buffelspoort, North West	Momentous Energy	Project Manager & EAP
Spitskop SEF near Northam, Limpopo	FRV & iNca Energy	Project Manager & EAP
Steynsrus PV, Free State	Suncorp	Project Manager & EAP
Tabor SEF near Polokwane, Limpopo	FRV & iNca Energy	Project Manager & EAP
Upington Airport PV Installation, Northern Cape	The Power Company	Project Manager & EAP
Valeria SEF near Hartebeestpoort Dam, North West	Solar to Benefit Africa	Project Manager & EAP
Watershed SEF near Lichtenburg, North West	FRV & iNca Energy	Project Manager & EAP
Witkop SEF near Polokwane, Limpopo	FRV & iNca Energy	Project Manager & EAP
Woodmead Retail Park Rooftop PV Installation, Gauteng	Momentous Energy	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO and bi-monthly auditing for the construction of the Adams Solar PV Project Two South of Hotazel, Northern Cape	Enel Green Power	Project Manager
ECO for the construction of the Kathu PV Facility, Northern Cape	REISA	Project Manager
ECO and bi-monthly auditing for the construction of the Pulida PV Facility, Free State	Enel Green Power	Project Manager
ECO for the construction of the RustMo1 SEF, North West	Momentous Energy	Project Manager
ECO for the construction of the Sishen SEF, Northern	Windfall 59 Properties	Project Manager

Project Name & Location	Client Name	Role
Cape		
ECO for the construction of the Upington Airport PV Facility, Northern Cape	Sublanary Trading	Project Manager
Quarterly compliance monitoring of compliance with all environmental licenses for the operation activities at the Kathu PV facility, Northern Cape	REISA	Project Manager
ECO for the construction of the Konkoonies II PV SEF and associated infrastructure, Northern Cape	BioTherm Energy	Project Manager
ECO for the construction of the Aggeneys PV SEF and associated infrastructure, Northern Cape	BioTherm Energy	Project Manager

Compliance Advice and ESAP Reporting

Project Name & Location	Client Name	Role
Aggeneys Solar Farm, Northern Cape	BioTherm Energy	Environmental Advisor
Airies II PV Facility SW of Kenhardt, Northern Cape	BioTherm Energy	Environmental Advisor
Kalahari SEF Phase II in Kathu, Northern Cape	Engie	Environmental Advisor
Kathu PV Facility, Northern Cape	Building Energy	Environmental Advisor
Kenhardt PV Facility, Northern Cape	BioTherm Energy	Environmental Advisor
Kleinbegin PV SEF West of Groblershoop, Northern Cape	MedEnergy	Environmental Advisor
Konkoonies II SEF near Pofadder, Northern Cape	BioTherm Energy	Environmental Advisor
Konkoonies Solar Farm, Northern Cape	BioTherm Energy	Environmental Advisor
Lephalale SEF, Limpopo	Exxaro	Environmental Advisor
Pixley ka Seme PV Park, South-East of De Aar, Northern Cape	African Clean Energy Developments (ACED)	Environmental Advisor
RustMo1 PV Plant near Buffelspoort, North West	Momentous Energy	Environmental Advisor
Scuitdrift 1 SEF & Scuitdrift 2 SEF, Limpopo	Building Energy	Environmental Advisor
Sirius PV Plants, Northern Cape	Aurora Power Solutions	Environmental Advisor
Upington Airport PV Power Project, Northern Cape	Sublunary Trading	Environmental Advisor
Upington SEF, Northern Cape	Abengoa Solar	Environmental Advisor
Ofir-ZX PV SEF near Keimoes, Northern Cape	Networx S28 Energy	Environmental Advisor
Steynsrus PV1 & PV2 SEF's, Northern Cape	Cronimet Power Solutions	Environmental Advisor
Heuningspruit PV SEF, Northern Cape	Cronimet Power Solutions	Environmental Advisor

Due Diligence Reporting

Project Name & Location	Client Name	Role
5 PV SEF projects in Lephalale, Limpopo	iNca Energy	Environmental Advisor
Prieska PV Plant, Northern Cape	SunEdison Energy India	Environmental Advisor
Sirius Phase One PV Facility near Upington, Northern Cape	Aurora Power Solutions	Environmental Advisor

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Biodiversity Permit & WULA for the Aggeneys SEF near Aggeneys, Northern Cape	BioTherm Energy	Project Manager & EAP
Biodiversity Permit for the Konkoonies II SEF near Pofadder, Northern Cape	BioTherm Energy	Project Manager & EAP
Biodiversity Permitting for the Lephalale SEF, Limpopo	Exxaro Resources	Project Manager & EAP

Project Name & Location	Client Name	Role
Environmental Permitting for the Kleinbegin PV SEF West of Groblershoop, Northern Cape	MedEnergy	Project Manager & EAP
Environmental Permitting for the Upington SEF, Northern Cape	Abengoa Solar	Project Manager & EAP
Environmental Permitting for the Kathu PV Facility, Northern Cape	Building Energy	Project Manager & EAP
Environmental Permitting for the Konkoonsies Solar Farm, Northern Cape	BioTherm Energy	Project Manager & EAP
Environmental Permitting for the Lephalale SEF, Limpopo	Exxaro Resources	Project Manager & EAP
Environmental Permitting for the Scuitdrift 1 SEF & Scuitdrift 2 SEF, Limpopo	Building Energy	Project Manager & EAP
Environmental Permitting for the Sirius PV Plant, Northern Cape	Aurora Power Solutions	Project Manager & EAP
Environmental Permitting for the Steynsrus PV1 & PV2 SEF's, Northern Cape	Cronimet Power Solutions	Project Manager & EAP
Environmental Permitting for the Heuningspruit PV SEF, Northern Cape	Cronimet Power Solutions	Project Manager & EAP
Permits for the Kleinbegin and UAP PV Plants, Northern Cape	MedEnergy Global	Project Manager & EAP
S53 Application for Arriesfontein Solar Park Phase 1 – 3 near Danielskuil, Northern Cape	Solar Reserve / SunCorp	Project Manager & EAP
S53 Application for Hertzogville PV1 & PV 2 SEFs, Free State	Solar Reserve / SunCorp	Project Manager & EAP
S53 Application for the Bloemfontein Airport PV Facility, Free State	Sublunary Trading	Project Manager & EAP
S53 Application for the Kimberley Airport PV Facility, Northern Cape	Sublunary Trading	Project Manager & EAP
S53 Application for the Project Blue SEF, Northern Cape	WWK Developments	Project Manager & EAP
S53 Application for the Upington Airport PV Facility, Free State	Sublunary Trading	Project Manager & EAP
WULA for the Kalahari SEF Phase II in Kathu, Northern Cape	Engie	Project Manager & EAP
Environmental Permitting for the Steynsrus PV1 & PV2 SEF's, Northern Cape	Cronimet Power Solutions	Project Manager & EAP
Environmental Permitting for the Heuningspruit PV SEF, Northern Cape	Cronimet Power Solutions	Project Manager & EAP

RENEWABLE POWER GENERATION PROJECTS: CONCENTRATED SOLAR FACILITIES (CSP)

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Ilanga CSP 2, 3, 4, 5, 7 & 9 Facilities near Upington, Northern Cape	Emvelo Holdings	Project Manager & EAP
Ilanga CSP near Upington, Northern Cape	Ilangethu Energy	Project Manager & EAP
Ilanga Tower 1 Facility near Upington, Northern Cape	Emvelo Holdings	Project Manager & EAP

Project Name & Location	Client Name	Role
Karoshhoek CPVPD 1-4 facilities on site 2 as part of the larger Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP
Karoshhoek CSP facilities on sites 1.4; 4 & 5 as part of the larger Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP
Karoshhoek Linear Fresnel 1 Facility on site 1.1 as part of the larger Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO for the construction of the !Khi CSP Facility, Northern Cape	Abengoa Solar	Project Manager
ECO for the construction of the Ilanga CSP 1 Facility near Upington, Northern Cape	Karoshhoek Solar One	Project Manager
ECO for the construction of the Solar Park, Northern Cape	Kathu Solar	Project Manager
ECO for the construction of the KaXu! CSP Facility, Northern Cape	Abengoa Solar	Project Manager
Internal audit of compliance with the conditions of the IWUL issued to the Karoshhoek Solar One CSP Facility, Northern Cape	Karoshhoek Solar One	Project Manager

Screening Studies

Project Name & Location	Client Name	Role
Upington CSP (Tower) Plant near Kanoneiland, Northern Cape	iNca Energy and FRV	Project Manager & EAP

Compliance Advice and ESAP reporting

Project Name & Location	Client Name	Role
Ilanga CSP Facility near Upington, Northern Cape	Ilangethu Energy	Environmental Advisor
Ilangaletu CSP 2, Northern Cape	FG Emvelo	Environmental Advisor
Kathu CSP Facility, Northern Cape	GDF Suez	Environmental Advisor
Lephalale SEF, Limpopo	Cennergi	Environmental Advisor
Solis I CSP Facility, Northern Cape	Brightsource	Environmental Advisor

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Environmental Permitting for the Ilanga CSP Facility near Upington, Northern Cape	Ilangethu Energy	Project Manager & EAP
Environmental Permitting for the Kathu CSP, Northern Cape	GDF Suez	Project Manager & EAP
WULA for the Solis I CSP Facility, Northern Cape	Brightsource	Project Manager & EAP

RENEWABLE POWER GENERATION PROJECTS: WIND ENERGY FACILITIES

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Sere WEF, Western Cape	Eskom Holdings SoC Limited	EAP

Project Name & Location	Client Name	Role
Aberdeen WEF, Eastern Cape	Eskom Holdings SoC Limited	Project Manager & EAP
Amakhala Emoyeni WEF, Eastern Cape	Windlab Developments	Project Manager & EAP
EXXARO West Coast WEF, Western Cape	EXXARO Resources	Project Manager & EAP
Goereesoe Wind Farm near Swellendam, Western Cape	iNca Energy	Project Manager & EAP
Hartneest WEF, Western Cape	Juwi Renewable Energies	Project Manager & EAP
Hopefield WEF, Western Cape	Umoya Energy	EAP
Kleinsee WEF, Northern Cape	Eskom Holdings SoC Limited	Project Manager & EAP
Klipheuwel/Dassiesfontein WEF within the Overberg area, Western Cape	BioTherm Energy	Project Manager & EAP
Moorreesburg WEF, Western Cape	iNca Energy	Project Manager & EAP
Oyster Bay WEF, Eastern Cape	Renewable Energy Resources Southern Africa	Project Manager & EAP
Project Blue WEF, Northern Cape	Windy World	Project Manager & EAP
Rheboksfontein WEF, Western Cape	Moyeng Energy	Project Manager & EAP
Spitskop East WEF near Riebeeck East, Eastern Cape	Renewable Energy Resources Southern Africa	Project Manager & EAP
Suurplaat WEF, Western Cape	Moyeng Energy	Project Manager & EAP
Swellendam WEF, Western Cape	IE Swellendam	Project Manager & EAP
Tsitsikamma WEF, Eastern Cape	Exxarro	Project Manager & EAP
West Coast One WEF, Western Cape	Moyeng Energy	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Amakhala Emoyeni Wind Monitoring Masts, Eastern Cape	Windlab Developments	Project Manager & EAP
Beaufort West Wind Monitoring Masts, Western Cape	Umoya Energy	Project Manager & EAP
Hopefield Community Wind Farm near Hopefield, Western Cape	Umoya Energy	Project Manager & EAP
Koekenaap Wind Monitoring Masts, Western Cape	EXXARO Resources	Project Manager & EAP
Koingnaas WEF, Northern Cape	Just Palm Tree Power	Project Manager & EAP
Laingsburg Area Wind Monitoring Masts, Western Cape	Umoya Energy	Project Manager & EAP
Overberg Area Wind Monitoring Masts, Western Cape	BioTherm Energy	Project Manager & EAP
Oyster Bay Wind Monitoring Masts, Eastern Cape	Renewable Energy Systems Southern Africa (RES)	Project Manager & EAP

Screening Studies

Project Name & Location	Client Name	Role
Albertinia WEF, Western Cape	BioTherm Energy	Project Manager & EAP
Koingnaas WEF, Northern Cape	Just Pal Tree Power	Project Manager & EAP
Napier Region WEF Developments, Western Cape	BioTherm Energy	Project Manager & EAP
Tsitsikamma WEF, Eastern Cape	Exxarro Resources	Project Manager & EAP
Various WEFs within an identified area in the Overberg area, Western Cape	BioTherm Energy	Project Manager & EAP
Various WEFs within an identified area on the West Coast, Western Cape	Investec Bank Limited	Project Manager & EAP
Various WEFs within an identified area on the West Coast, Western Cape	Eskom Holdings Limited	Project Manager & EAP

Project Name & Location	Client Name	Role
Various WEFs within the Western Cape	Western Cape Department of Environmental Affairs and Development Planning	Project Manager & EAP
Velddrift WEF, Western Cape	VentuSA Energy	Project Manager & EAP
Wind 1000 Project	Thabo Consulting on behalf of Eskom Holdings	Project Manager & EAP
Wittekleibosch, Snylip & Doriskraal WEFs, Eastern Cape	Exxarro Resources	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO for the construction of the West Coast One WEF, Western Cape	Aurora Wind Power	Project Manager
ECO for the construction of the Gouda WEF, Western Cape	Blue Falcon	Project Manager
EO for the Dassiesklip Wind Energy Facility, Western Cape	Group 5	Project Manager
Quarterly compliance monitoring of compliance with all environmental licenses for the operation activities at the Gouda Wind Energy facility near Gouda, Western Cape	Blue Falcon	Project Manager
Annual auditing of compliance with all environmental licenses for the operation activities at the West Coast One Wind Energy facility near Vredenburg, Western Cape	Aurora Wind Power	Project Manager
External environmental and social audit for the Amakhala Wind Farm, Eastern Cape	Cennergi	Project Manager
External environmental and social audit for the Tsitsikamma Wind Farm, Eastern Cape	Cennergi	Project Manager
ECO for the construction of the Excelsior Wind Farm and associated infrastructure, Northern Cape	BioTherm Energy	Project Manager
External compliance audit of the Dassiesklip Wind Energy Facility, Western Cape	BioTherm Energy	Project Manager

Compliance Advice

Project Name & Location	Client Name	Role
Amakhala Phase 1 WEF, Eastern Cape	Cennergi	Environmental Advisor
Dassiesfontein WEF within the Overberg area, Western Cape	BioTherm Energy	Environmental Advisor
Excelsior Wind Farm, Western Cape	BioTherm Energy	Environmental Advisor
Great Karoo Wind Farm, Northern Cape	African Clean Energy Developments (ACED)	Environmental Advisor
Hopefield Community WEF, Western Cape	African Clean Energy Developments (ACED)	Environmental Advisor
Rhebokfontein WEF, Western Cape	Moyeng Energy	Environmental Advisor
Tiqua WEF, Western Cape	Cennergi	Environmental Advisor
Tsitsikamma WEF, Eastern Cape	Cennergi	Environmental Advisor
West Coast One WEF, Western Cape	Moyeng Energy	Environmental Advisor

Due Diligence Reporting

Project Name & Location	Client Name	Role
Witteberg WEF, Western Cape	EDPR Renewables	Environmental Advisor
IPD Vredenburg WEF within the Saldanha Bay area, Western Cape	IL&FS Energy Development Company	Environmental Advisor

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Biodiversity Permitting for the Power Line between the Tsitikamma Community WEF & the Diep River Substation, Eastern Cape	Cennergi	Project Manager & EAP
Biodiversity Permitting for the West Coast One WEF, Western Cape	Aurora Wind Power	Project Manager & EAP
Environmental Permitting for the Excelsior WEF, Western Cape	BioTherm Energy	Project Manager & EAP
Plant Permits & WULA for the Tsitikamma Community WEF, Eastern Cape	Cennergi	Project Manager & EAP
S24G and WULA for the Rectification for the commencement of unlawful activities on Ruimsig AH in Honeydew, Gauteng	Hossam Soror	Project Manager & EAP
S24G Application for the Rhebokfontein WEF, Western Cape	Ormonde - Theo Basson	Project Manager & EAP
S53 Application & WULA for Suurplaat and Gemini WEFs, Northern Cape	Engie	Project Manager & EAP
S53 Application for the Hopefield Community Wind Farm near Hopefield, Western Cape	Umoya Energy	Project Manager & EAP
S53 Application for the Project Blue WEF, Northern Cape	WWK Developments	Project Manager & EAP
S53 for the Oyster Bay WEF, Eastern Cape	RES	Project Manager & EAP
WULA for the Great Karoo Wind Farm, Northern Cape	African Clean Energy Developments (ACED)	Project Manager & EAP

CONVENTIONAL POWER GENERATION PROJECTS (COAL)

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Mutsho Power Station near Makhado, Limpopo	Mutsho Consortium	Project Manager & EAP
Coal-fired Power Station near Ogies, Mpumalanga	Ruukki SA	Project Manager & EAP
Thabametsi IPP Coal-fired Power Station, near Lephallale, Limpopo	Axia	Project Manager & EAP
Transalloys Coal-fired Power Station, Mpumalanga	Transalloys	Project Manager & EAP
Tshivasho IPP Coal-fired Power Station (with WML), near Lephallale, Limpopo	Cennergi	Project Manager & EAP
Umbani Coal-fired Power Station, near Kriel, Mpumalanga	ISS Global Mining	Project Manager & EAP
Waterberg IPP Coal-Fired Power Station near Lephallale, Limpopo	Exxaro Resources	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Coal Stockyard on Medupi Ash Dump Site, Limpopo	Eskom Holdings	Project Manager & EAP

Project Name & Location	Client Name	Role
Biomass Co-Firing Demonstration Facility at Arnot Power Station East of Middleburg, Mpumlanaga	Eskom Holdings	Project Manager & EAP

Screening Studies

Project Name & Location	Client Name	Role
Baseload Power Station near Lephallale, Limpopo	Cennergi	Project Manager & EAP
Coal-Fired Power Plant near Delmas, Mpumalanga	Exxaro Resources	Project Manager & EAP
Makhado Power Station, Limpopo	Mutsho Consortium, Limpopo	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO for the Camden Power Station, Mpumalanga	Eskom Holdings	Project Manager

Compliance Advice

Project Name & Location	Client Name	Role
Thabametsi IPP Coal-fired Power Station, near Lephallale, Limpopo	Axia	Environmental Advisor

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Permit application for the Thabametsi Bulk Water Pipeline, near Lephallale, Limpopo	Axia	Project Manager & EAP
S53 & WULA for the Waterberg IPP Coal-Fired Power Station near Lephallale, Limpopo	Exxaro Resources	Project Manager & EAP
S53 Application for the Tshivasho Coal-fired Power Station near Lephallale, Limpopo	Cennergi	Project Manager & EAP

CONVENTIONAL POWER GENERATION PROJECTS (GAS)

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Ankerlig OCGT to CCGT Conversion project & 400 kV transmission power line between Ankerlig and the Omega Substation, Western Cape	Eskom Holdings SoC Limited	Project Manager & EAP
Gourikwa OCGT to CCGT Conversion project & 400 kV transmission power line between Gourikwa & Proteus Substation, Western Cape	Eskom Holdings SoC Limited	Project Manager & EAP
Richards Bay Gas to Power Combined Cycle Power Station, KwaZulu-Natal	Eskom Holdings SoC Limited	Project Manager & EAP
Richards Bay Gas to Power Plant, KwaZulu-Natal	Richards Bay Gas	Project Manager & EAP
Decommissioning & Recommissioning of 3 Gas Turbine Units at Acacia Power Station & 1 Gas Turbine Unit at Port Rex Power Station to the existing Ankerlig Power Station in Atlantis Industria, Western Cape	Eskom Holdings	Project Manager & EAP
Two 132kV Chickadee Lines to the new Zonnebloem Switching Station, Mpumalanga	Eskom Holdings	Project Manager & EAP

Screening Studies

Project Name & Location	Client Name	Role
Fatal Flaw Analysis for 3 area identified for the establishment of a 500MW CCGT Power Station	Globeleq Advisors Limited	Project Manager & EAP
Richards Bay Gas to Power Combined Cycle Power Station, KwaZulu-Natal	Eskom Holdings SoC Limited	Project Manager & EAP

GRID INFRASTRUCTURE PROJECTS

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Aggeneis-Oranjemond Transmission Line & Substation Upgrade, Northern Cape	Eskom Transmission	Project Manager & EAP
Ankerlig-Omega Transmission Power Lines, Western Cape	Eskom Transmission	Project Manager & EAP
Karoshhoek Grid Integration project as part of the Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP
Koeberg-Omega Transmission Power Lines,, Western Cape	Eskom Transmission	Project Manager & EAP
Koeberg-Stikland Transmission Power Lines, Western Cape	Eskom Transmission	Project Manager & EAP
Kyalami Strengthening Project, Gauteng	Eskom Transmission	Project Manager & EAP
Mokopane Integration Project, Limpopo	Eskom Transmission	Project Manager & EAP
Saldanha Bay Strengthening Project, Western Cape	Eskom Transmission	Project Manager & EAP
Steelpoort Integration Project, Limpopo	Eskom Transmission	Project Manager & EAP
Transmission Lines from the Koeberg-2 Nuclear Power Station site, Western Cape	Eskom Transmission	Project Manager & EAP
Tshwane Strengthening Project, Phase 1, Gauteng	Eskom Transmission	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Dassenberg-Koeberg Power Line Deviation from the Koeberg to the Ankerlig Power Station, Western Cape	Eskom Holdings	Project Manager & EAP
Golden Valley II WEF Power Line & Substation near Cookhouse, Eastern Cape	BioTherm Energy	Project Manager & EAP
Golden Valley WEF Power Line near Cookhouse, Eastern Cape	BioTherm Energy	Project Manager & EAP
Karoshhoek Grid Integration project as part of the Karoshhoek Solar Valley Development East of Upington, Northern Cape	FG Emvelo	Project Manager & EAP
Konkoonsies II PV SEF Power Line to the Paulputs Substation near Pofadder, Northern Cape	BioTherm Energy	Project Manager & EAP
Perdekraal West WEF Powerline to the Eskom Kappa Substation, Western Cape	BioTherm Energy	Project Manager & EAP
Rheboksfontein WEF Powerline to the Aurora Substation, Western Cape	Moyeng Energy	Project Manager & EAP
Soetwater Switching Station near Sutherland, Northern Cape	African Clean Energy Developments (ACED)	Project Manager & EAP

Solis Power I Power Line & Switchyard Station near Upington, Northern Cape	Brightsource	Project Manager & EAP
Stormwater Canal System for the Ilanga CSP near Upington, Northern Cape	Karoshhoek Solar One	Project Manager & EAP
Tsitsikamma Community WEF Powerline to the Diep River Substation, Eastern Cape	Eskom Holdings	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO for the construction of the Ferrum-Mookodi Transmission Line, Northern Cape and North West	Trans-Africa Projects on behalf of Eskom	Project Manager
EO for the construction of the Gamma-Kappa Section A Transmission Line, Western Cape	Trans-Africa Projects on behalf of Eskom	Project Manager
EO for the construction of the Gamma-Kappa Section B Transmission Line, Western Cape	Trans-Africa Projects on behalf of Eskom	Project Manager
EO for the construction of the Hydra IPP Integration project, Northern Cape	Trans-Africa Projects on behalf of Eskom	Project Manager
EO for the construction of the Kappa-Sterrekus Section C Transmission Line, Western Cape	Trans-Africa Projects on behalf of Eskom	Project Manager
EO for the construction of the Namaqualand Strengthening project in Port Nolloth, Western Cape	Trans-Africa Projects on behalf of Eskom	Project Manager
ECO for the construction of the Neptune Substation Soil Erosion Mitigation Project, Eastern Cape	Eskom	Project Manager
ECO for the construction of the Ilanga-Gordonia 132kV power line, Northern Cape	Karoshhoek Solar One	Project Manager

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Environmental Permitting and WULA for the Rockdale B Substation & Loop in Power Lines,	Eskom Holdings	Project Manager & EAP
Environmental Permitting and WULA for the Steelpoort Integration project, Limpopo	Eskom Holdings	Project Manager & EAP
Environmental Permitting for Solis CSP near Upington, Northern Cape	Brightsource	Project Manager & EAP

MINING SECTOR PROJECTS

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Elitheni Coal Mine near Indwe, Eastern Cape	Elitheni Coal	Project Manager & EAP
Groot Letaba River Development Project Borrow Pits	Iiso	Project Manager & EAP
Grootegeluk Coal Mine for coal transportation infrastructure between the mine and Medupi Power Station (EMPr amendment) , Limpopo	Eskom Holdings	Project Manager & EAP
Waterberg Coal Mine (EMPr amendment), Limpopo	Sesoko Resources	Project Manager & EAP
Aluminium Plant WML & AEL, Gauteng	GfE-MIR Alloys & Minerals	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Rare Earth Separation Plant in Vredendal, Western Cape	Rareco	Project Manager & EAP

Decommissioning and Demolition of Kilns 5 & 6 at the Slurry Plant, Kwa-Zulu Natal	PPC	Project Manager & EAP
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Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO for the construction of the Duhva Mine Water Recovery Project, Mpumalanga	Eskom Holdings SoC Limited	Project Manager
External compliance audit of Palesa Coal Mine's Integrated Water Use License (IWUL), near KwaMhlanga, Mpumalanga	HCI Coal	Project Manager
External compliance audit of Palesa Coal Mine's Waste Management License (WML) and EMP, near KwaMhlanga, Mpumalanga	HCI Coal	Project Manager
External compliance audit of Mbali Coal Mine's Integrated Water Use License (IWUL), near Ogies, Mpumalanga	HCI Coal	Project Manager
Independent External Compliance Audit of Water Use License (WUL) for the Tronox Namakwa Sands (TNS) Mining Operations (Brand se Baai), Western Cape	Tronox Namakwa Sands	Project Manager
Independent External Compliance Audit of Water Use License (WUL) for the Tronox Namakwa Sands (TNS) Mineral Separation Plant (MSP), Western Cape	Tronox Namakwa Sands	Project Manager
Independent External Compliance Audit of Water Use License (WUL) for the Tronox Namakwa Sands (TNS) Smelter Operations (Saldanha), Western Cape	Tronox Namakwa Sands	Project Manager
Compliance Auditing of the Waste Management Licence for the PetroSA Landfill Site at the GTL Refinery, Western Cape	PetroSA	Project Manager

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
Waste Licence Application for the Rare Earth Separation Plant in Vredendal, Western Cape	Rareco	Project Manager & EAP
WULA for the Expansion of the Landfill site at Exxaro's Namakwa Sands Mineral Separation Plant, Western Cape	Exxaro Resources	Project Manager & EAP
S24G & WML for an Aluminium Plant, Gauteng	GfE-MIR Alloys & Minerals	Project Manager & EAP

INFRASTRUCTURE DEVELOPMENT PROJECTS (BRIDGES, PIPELINES, ROADS, WATER RESOURCES, STORAGE, ETC)

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Bridge across the Ngotwane River, on the border of South Africa and Botswana	Eskom Holdings	Project Manager & EAP
Chemical Storage Tanks, Metallurgical Plant Upgrade & Backfill Plant upgrade at South Deep Gold Mine, near Westonaria, Gauteng	Goldfields	Project Manager & EAP
Expansion of the existing Welgedacht Water Care Works, Gauteng	ERWAT	Project Manager & EAP

Project Name & Location	Client Name	Role
Golden Valley WEF Access Road near Cookhouse, Eastern Cape	BioTherm Energy	Project Manager & EAP
Great Fish River Wind Farm Access Roads and Watercourse Crossings near Cookhouse, Eastern Cape	African Clean Energy Developments (ACED)	Project Manager & EAP
Ilanga CSP Facility Watercourse Crossings near Upington, Northern Cape	Karoshok Solar one	Project Manager & EAP
Modification of the existing Hartebeestfontein Water Care Works, Gauteng	ERWAT	Project Manager & EAP
N10 Road Realignment for the Ilanga CSP Facility, East of Upington, Northern Cape	SANRAL	Project Manager & EAP
Nxuba (Bedford) Wind Farm Watercourse Crossings near Cookhouse, Eastern Cape	African Clean Energy Developments (ACED)	Project Manager & EAP
Pollution Control Dams at the Medupi Power Station Ash Dump & Coal Stockyard, Limpopo	Eskom	Project Manager & EAP
Qoboshane borrow pits (EMPr only), Eastern Cape	Emalahleni Local Municipality	Project Manager & EAP
Tsitsikamma Community WEF Watercourse Crossings, Eastern Cape	Cennergi	Project Manager & EAP
Clayville Central Steam Plant, Gauteng	Bellmall Energy	Project Manager & EAP
Msenge Emoyeni Wind Farm Watercourse Crossings and Roads, Eastern Cape	Windlab	Project Manager & EAP

Basic Assessments

Project Name & Location	Client Name	Role
Harmony Gold WWTW at Doornkop Mine, Gauteng	Harmony Doornkop Plant	Project Manager & EAP
Ofir-ZX Watercourse Crossing for the Solar PV Facility, near Keimoes, Northern Cape	Networx S28 Energy	Project Manager & EAP
Qoboshane bridge & access roads, Eastern Cape	Emalahleni Local Municipality	Project Manager & EAP
Relocation of the Assay Laboratory near Carletonville, Gauteng	Sibanye Gold	Project Manager & EAP
Richards Bay Harbour Staging Area, KwaZulu-Natal	Eskom Holdings	Project Manager & EAP
S-Kol Watercourse Crossing for the Solar PV Facility, East of Keimoes, Northern Cape	Networx S28 Energy	Project Manager & EAP
Sonnenberg Watercourse Crossing for the Solar PV Facility, West Keimoes, Northern Cape	Networx S28 Energy	Project Manager & EAP
Kruisvallei Hydroelectric Power Generation Scheme, Free State	Building Energy	Project Manager & EAP
Masetjaba Water Reservoir, Pump Station and Bulk Supply Pipeline near Nigel, Gauteng	Naidu Consulting Engineers	Project Manager & EAP
Access Road for the Dwarsug Wind Farm, Northern Cape Province	South Africa Mainsteam Renewable Power	Project Manager & EAP
Upgrade of the Cooling Water Treatment Facility at the Kriel Power Station, Mpumalanga	Eskom	Project Manager & EAP

Screening Studies

Project Name & Location	Client Name	Role
Roodepoort Open Space Optimisation Programme (OSOP) Precinct, Gauteng	TIMAC Engineering Projects	Project Manager & EAP
Vegetable Oil Plant and Associated Pipeline, Kwa-Zulu Natal	Wilmar Oils and Fats Africa	Project Manager & EAP

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
ECO and bi-monthly auditing for the construction of the Olifants River Water Resources Development Project (ORWRDP) Phase 2A: De Hoop Dam, R555 realignment and housing infrastructure	Department of Water and Sanitation	Project Manager Auditor
ECO for the Rehabilitation of the Blaaupan & Storm Water Channel, Gauteng	Airports Company of South Africa (ACSA)	Project Manager
Due Diligence reporting for the Better Fuel Pyrolysis Facility, Gauteng	Better Fuels	Project Manager
ECO for the Construction of the Water Pipeline from Kendal Power Station to Kendal Pump Station, Mpumalanga	Transnet	Project Manager
ECO for the Replacement of Low-Level Bridge, Demolition and Removal of Artificial Pong, and Reinforcement the Banks of the Crocodile River at the Construction at Walter Sisulu National Botanical Gardens, Gauteng Province	South African National Biodiversity Institute (SANBI)	Project Manager
External Compliance Audit of the Air Emission Licence (AEL) for a depot in Bloemfontein, Free State Province and in Tzaneen, Mpumalanga Province	PetroSA	Project Manager

Environmental Permitting, S53, Water Use Licence (WUL), Waste Management Licence (WML) & Other Applications

Project Name & Location	Client Name	Role
WULA for the Izubulo Private Nature Reserve, Limpopo	Kjell Bismeyer, Jann Bader, Laurence Saad	Project Manager & EAP
WULA for the Masodini Private Game Lode, Limpopo	Masodini Private Game Lodge	Environmental Advisor
WULA for the Ezulwini Private Nature Reserve, Limpopo	Ezulwini Investments	Project Manager & EAP
WULA for the Masodini Private Game Lode, Limpopo	Masodini Private Game Lodge	Project Manager & EAP
WULA for the N10 Realignment at the Ilanga SEF, Northern Cape	Karoshhoek Solar One	Project Manager & EAP
WULA for the Kruisvallei Hydroelectric Power Generation Scheme, Free State	Building Energy	Project Manager & EAP
S24G and WULA for the illegal construction of structures within a watercourse on EFF 24 Ruimsig Agricultural Holdings, Gauteng	Sorrow Language Services	Project Manager & EAP

HOUSING AND URBAN PROJECTS

Basic Assessments

Project Name & Location	Client Name	Role
Postmasburg Housing Development, Northern Cape	Transnet	Project Manager & EAP

Compliance Advice and reporting

Project Name & Location	Client Name	Role
Kampi ya Thude at the Olifants West Game Reserve, Limpopo	Nick Elliot	Environmental Advisor

Project Name & Location	Client Name	Role
External Compliance Audit of WUL for the Johannesburg Country Club, Gauteng	Johannesburg Country Club	Project Manager

Environmental Compliance, Auditing and ECO

Project Name & Location	Client Name	Role
Due Diligence Audit for the Due Diligence Audit Report, Gauteng	Delta BEC (on behalf of Johannesburg Development Agency (JDA))	Project Manager

ENVIRONMENTAL MANAGEMENT TOOLS

Project Name & Location	Client Name	Role
Development of the 3rd Edition Environmental Implementation Plan (EIP)	Gauteng Department of Agriculture and Rural Development (GDARD)	Project Manager & EAP
Development of Provincial Guidelines on 4x4 routes, Western Cape	Western Cape Department of Environmental Affairs and Development Planning	EAP
Compilation of Construction and Operation EMP for the Braamhoek Transmission Integration Project, Kwazulu-Natal	Eskom Holdings	Project Manager & EAP
Compilation of EMP for the Wholesale Trade of Petroleum Products, Gauteng	Munaca Technologies	Project Manager & EAP
Operational Environmental Management Programme (OEMP) for Medupi Power Station, Limpopo	Eskom Holdings	Project Manager & EAP
Operational Environmental Management Programme (OEMP) for the Dube TradePort Site Wide Precinct	Dube TradePort Corporation	Project Manager & EAP
Operational Environmental Management Programme (OEMP) for the Kusile Power Station, Mpumalanga	Eskom Holdings	Project Manager & EAP
Review of Basic Assessment Process for the Wittekleibosch Wind Monitoring Mast, Eastern Cape	Exxaro Resources	Project Manager & EAP
Revision of the EMPr for the Sirius Solar PV	Aurora Power Solutions	Project Manager & EAP
State of the Environment (SoE) for Emalahleni Local Municipality, Mpumalanga	Simo Consulting on behalf of Emalahleni Local Municipality	Project Manager & EAP
Aspects and Impacts Register for Salberg Concrete Products operations	Salberg Concrete Products	EAP
First State of Waste Report for South Africa	Golder on behalf of the Department of Environmental Affairs	Project Manager & EAP
Responsibilities Matrix and Gap Analysis for the Kruisvallei Hydroelectric Power Generation Scheme, Free State Province	Building Energy	Project Manager
Responsibilities Matrix and Gap Analysis for the Roggeveld Wind Farm, Northern & Western Cape Provinces	Building Energy	Project Manager

PROJECTS OUTSIDE OF SOUTH AFRICA

Project Name & Location	Client Name	Role
Advisory Services for the Zizabona Transmission Project, Zambia, Zimbabwe, Botswana & Namibia	PHD Capital	Advisor
EIA for the Semonkong WEF, Lesotho	MOSCET	Project Manager & EAP
EMP for the Kuvaninga Energia Gas Fired Power Project, Mozambique	ADC (Pty) Ltd	Project Manager & EAP
Environmental Screening Report for the SEF near Thabana Morena, Lesotho	Building Energy	EAP
EPBs for the Kawambwa, Mansa, Mwense and Nchelenge SEFs in Luapula Province, Zambia	Building Energy	Project Manager & EAP
ESG Due Diligence for the Hilton Garden Inn Development in Windhoek, Namibia	Vatange Capital	Project Manager
Mandahill Mall Rooftop PV SEF EPB, Lusaka, Zambia	Building Energy	Project Manager & EAP
Monthly ECO for the PV Power Plant for the Mocuba Power Station	Scatec	Project Manager

CURRICULUM VITAE OF LISA OPPERMAN

Profession :	Environmental Assessment Practitioner and GIS Consultant
Specialisation:	Environmental Impact Assessments, Basic Assessments, Site Screening and Site Selection reporting, compilation of maps through the use of ArcGIS
Work Experience:	3 years of experience in the environmental management and GIS field

VOCATIONAL EXPERIENCE

Lisa Opperman has three years of experience in the environmental field. She has worked on a variety of EIA processes including renewable energy projects, as well as industrial developments. She has also been involved in the undertaking of public participation for projects located in South Africa which has included the undertaking of public meetings, focus group meetings and key stakeholder meetings in both Afrikaans and English. She also has experience in working with ArcGIS 10 for the compilation of maps, the manipulation of data and screening for environmental sensitivities within areas with the potential for development.

SKILLS BASE AND CORE COMPETENCIES

- GIS Mapping
- EIA Report Writing
- Conducting of public involvement processes
- Administrative tasks
- Analysis and manipulation of geographical information and technical experience with the use of ArcGIS

EDUCATION AND PROFESSIONAL STATUS

Degrees:

- B.Sc. (Hons) Environmental Management (2014), North-West University, Potchefstroom
- B.A Psychology, Geography and Environmental Studies (2013), North-West University, Potchefstroom

Courses:

- Environmental Legal Compliance and Auditing (2017), Janice Tooley at the Protea Hotel OR Thambo, Johannesburg

EMPLOYMENT

Date	Company	Roles and Responsibilities
February 2015 – current	Savannah Environmental (Pty) Ltd	Environmental Assessment Practitioner and GIS Consultant <i>Tasks include: Compilation of Environmental Scoping Reports, Plan of Study, Environmental Impact Assessment Reports, Basic Assessments and Environmental management programmes; Environmental Screening Reports; Specialist management; project proposals and tenders; Client liaison and Marketing; Process EIA Applications, GIS Mapping and data analysis and manipulation</i>

PROJECT EXPERIENCE**Renewable Power Generation Projects: Solar Energy Facilities****Screening Studies**

Project Name & Location	Client Name	Role
<i>Pre-feasibility Desktop Screening and Fatal Flaw Scan for a Solar PV Project near Lichtenburg, North West Province</i>	<i>ABO Wind AG</i>	<i>EAP and GIS Consultant</i>

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
<i>Buffels PV 1 & Buffels PV 2 Solar Energy Facilities near Orkney, North West</i>	<i>Kabi Solar</i>	<i>EAP and GIS Consultant</i>
<i>Woodhouse Solar 1 & Woodhouse Solar 2 PV Facilities near Vryburg, North West</i>	<i>Genesis Eco-Energy Developments</i>	<i>EAP and GIS Consultant</i>
<i>Orkney Solar Farm, North West</i>	<i>Genesis Eco-Energy Developments</i>	<i>EAP and GIS Consultant</i>
<i>Tewa Isitha Solar 1 & Tewa Isitha Solar 2 PV facilities near Upington, Northern Cape</i>	<i>AfriCoast Energy</i>	<i>EAP and GIS Consultant</i>

Basic Assessments

Project Name & Location	Client Name	Role
<i>Harmony Gold 3x PV Facilities, Welkom, Free State</i>	<i>BBEntropie</i>	<i>EAP and GIS Consultant</i>

Renewable power generation projects: Wind Energy Facilities**Screening Studies**

Project Name & Location	Client Name	Role
<i>Juno Wind Farm Screening Assessment Report near Lamberts Bay, Western Cape Province</i>	<i>AMDA Developments</i>	<i>EAP and GIS Consultant</i>

Lamberts Bay Wind Farm Screening Assessment Report near Lamberts Bay, Western Cape Province	Windy World	EAP and GIS Consultant
Pre-feasibility Desktop Screening and Fatal Flaw Scan for the Kudusberg and Rondekop Wind Energy Facilities, Northern Cape and Western Cape Provinces	ABO Wind AG	EAP and GIS Consultant

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Boulders Wind Farm, Western Cape Province	Vredenburg Windfarm	EAP and GIS Consultant
Namas Wind Farm, Northern Cape Province	Genesis Namas Wind (Pty) Ltd	EAP and GIS Consultant
Zonnequa Wind Farm, Northern Cape Province	Genesis Zonnequa Wind (Pty) Ltd	EAP and GIS Consultant

Grid Infrastructure Projects

Basic Assessments

Project Name & Location	Client Name	Role
132/11kV Olifantshoek Substation and Power Line, Northern Cape	Eskom	EAP and GIS Consultant

Gas Projects

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
Richards Bay Combined Cycle Power Plant (CCPP) power plant, KwaZulu-Natal	Eskom	EAP and GIS Consultant

Basic Assessments

Project Name & Location	Client Name	Role
Neopak Combined Heat and Power (CHP) Plant, Rosslyn, Gauteng	Neopak	EAP, Public Participation and GIS Consultant

Screening Studies

Project Name & Location	Client Name	Role
Richards Bay Combined Cycle Power Plant (CCPP) power plant, near Richards Bay, KwaZulu-Natal	Eskom	EAP and GIS Consultant

Infrastructure Development Projects (bridges, pipelines, roads, etc)

Basic Assessments

Project Name & Location	Client Name	Role
Water Treatment Plant at the Neopak Facility, Rosslyn, Gauteng	Neopak	EAP, Public Participation and GIS Consultant

Housing and Urban Projects

Environmental Impact Assessments and Environmental Management Programmes

Project Name & Location	Client Name	Role
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Metals Industrial Cluster near Kuruman, Northern Cape	Northern Cape Department of Economic Development and Tourism	EAP and GIS Consultant
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Environmental Management Tools

Environmental Management Programmes

Project Name & Location	Client Name	Role
Environmental Management Programme (EMPr) for the Nxuba Wind Farm, Eastern Cape	ACED	EAP
Operation Environmental Management Programme (EMPr) for Phase 1 of the Amakhala Emoyeni Wind Energy Facility, Eastern Cape	Cennergi	EAP
Operation Environmental Management Programme (EMPr) for the Tsitsikamma Community Wind Energy Facility, Eastern Cape Province	Cennergi	EAP
Environmental Management Programme (EMPr) for the Skuitdrift 1 Solar PV Energy Facility near Augrabies, Northern Cape Province	Building Energy South Africa	EAP and GIS Consultant
Environmental Management Programme (EMPr) for the Skuitdrift 2 Solar PV Energy Facility near Augrabies, Northern Cape Province	Building Energy South Africa	EAP and GIS Consultant

CURRICULUM VITAE OF NKHENSANI MASONDO

- Profession :** Senior Environmental Consultant
- Specialisation:** Environmental Management, Environmental Impact Assessments, Report Writing, Project Management, Stakeholder Engagement, Environmental Auditing
- Work Experience:** 6 years in the Environmental Management Consulting Field

VOCATIONAL EXPERIENCE

Nkhensani is an EAPASA Registered Environmental Assessment Practitioner with over 6 years of experience in the environmental field. She holds a BSocSci (Hons) in Environmental Management and Analysis and a BA (Own Choice) specialising in Geography and Archaeology, both from the University of Pretoria (UP). She is currently pursuing her MSc in Environmental Management at the University of South Africa (UNISA).

She has been involved in residential, commercial, institutional, industrial, and mixed-use development within South Africa. She has been involved in mine closure strategies and implementation plans on behalf of Mining partners. Her main responsibilities include compilation of environmental reports, stakeholder engagement, and project management.

SKILLS BASE AND CORE COMPETENCIES

- Environmental Planning
- Compilation of Environmental Impact Assessments, Basic Assessments, Water Use Licenses, NEMA Queries, GPEMF Applications, General Authorisations, Schedule 1 and Existing Lawful Use Applications
- Compilation and Implementation of Environmental Programmes
- Undertaking Environmental Audits for residential, commercial, and industrial developments
- Project Management of various projects
- Review of Specialists reports
- Undertaking Stakeholder Engagements for a variety of projects

EDUCATION AND PROFESSIONAL STATUS

Degrees:

- Master of Science in Environmental Management (current), University of South Africa
- BSocSci (Hons) Environmental Analysis and Management (2014), University of Pretoria
- BA (Own Choice) Specialising in Geography and Archaeology (2013), University of Pretoria

Short Courses:

- Geographical Information Systems Training (ESRI) 2016
- ISO 14001: 2004 Lead Environmental Auditor Training: Environmental Management Systems (SGS) 2015

Professional Society Affiliations:

- Environmental Assessment Practitioners Association of South Africa – Environmental Assessment Practitioner

EMPLOYMENT		
Date	Company	Roles and Responsibilities
01 June 2022 - Current:	Savannah Environmental (Pty) Ltd	<p>Senior Environmental Consultant</p> <p><u>Tasks include:</u></p> <ul style="list-style-type: none"> • Play a lead role in environmental permitting, environmental authorisation applications, and compliance and advice and assurance. • Project management, execute draft, review and/or further develop and manage the delivery of environmental impact assessments (EIA) reports and EMPs in line with the requirements of NEMA and the EIA regulations. • Environmental Permitting (including WULA), environmental authorisation applications and associated stakeholder engagement and public participation. • Manage the delivery of specialist environmental consultants and their reporting, as may be required. Manage any third parties or sub-consultants to which functions have been outsourced. • Project-related GIS mapping. • New business development and the preparation of proposals.
August 2017 – May 2022	LEAP: Landscape Architects and Environmental Planners (Imbrillinx CC)	<p>Environmental Assessment Practitioner</p> <p><u>Task included:</u></p> <ul style="list-style-type: none"> • Compiling Scoping Reports, Integrated Wastewater • Management Plans, Water Use License Applications, General • Authorisations, Schedule 1 Borehole Registrations, Basic • Assessment Reports, Environmental Management Programmes, • Section 24G Applications and Appeals, conducting site inspections. • Compiling Water Quality Monitoring, compiling wetland rehabilitation and management reports. • Stakeholder Engagement. • Project Management • Act as a liaison officer for the company with State Departments.
May 2015 – December 2016	LEAP: Landscape Architects and Environmental Planners (Imbrillinx CC)	<p><i>Environmental Control Officer</i></p> <p><u>Tasks Included</u></p> <ul style="list-style-type: none"> • Formulated and implemented long-range plans for environmental programs.

		<ul style="list-style-type: none"> Performed inspections, groundwater sampling and soil sampling. Performed environmental site assessments and provided remediation recommendations. Inspected sites to ensure adherence to environmental regulations. Training of contractors of appropriate environmental practices. Attending site meetings with contractors. Liaison with state departments. Act as a public participation assistant as and when required.
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PROJECT EXPERIENCE

INFRASTRUCTURE DEVELOPMENT PROJECTS (PIPELINES, WATER RESOURCES AND INDUSTRIAL

Basic Assessment and Environmental Programmes

Project	Client Name	Role
Lombardy East Stream Flow Reduction Activities	Johannesburg Road Agency	Project Manager & EAP
The Whisken K54 Road development	Balwin Properties Limited on behalf of Gautrans	Public Participation Assistant

Part 1 Amendment

Project	Client Name	Role
Malibongwe Pipeline	Codevco	Project Manager & EAP

Water Use License Applications and Environmental Programmes

Project	Client Name	Role
Crowthorne Leogem Sewer Pipeline	Leogem Property Projects (Pty) Ltd on behalf of	Project Manager & EAP
Diepsloot Klevebank Sewer pipeline	Eris Property Group (Pty) Limited	Project Manager & EAP
Kyalami Heights X4 Sewer Pipeline	Church of Scientology	Project Manager & EAP
Lombardy East Stream Flow Reduction Activities	Johannesburg Road Agency	Project Manager & EAP

General Authorisation

Project	Client Name	Role
Alinta Extension 4 Stormwater Infrastructure	Balwin Properties	Project Manager & EAP
Celtisdal Stormwater Infrastructure	Cosmopolitan Projects (Tshwane) Pty Ltd	Project Manager and EAP
Erasmus Estate – Road Crossing	Erasmus Estate Trust	EAP
Olivedale Retirement Village Stormwater Infrastructure	Olivedale Retirement Village NPO	EAP
Gem Valley Mixed Use Development Stormwater Culvert	Central Developments (Pty) Ltd	Project Manager & EAP

Environmental Compliance

Project	Client Name	Role
Diepsloot Porcupine Park Avenue	Valumax Northern Farms (Pty) Ltd	ECO

HOUSING AND URBAN PROJECTS

Environmental Impact Assessments and Environmental Management Programmes (EMPr)

Project	Client Name	Role
Dersley Springs Mixed Used Development	Royal Albatross (Pty) Ltd	EAP
Green Valley Residential Development	Balwin Properties Limited	Project Manager & EAP
Irene Ridge Mixed Use Development	M&T Developments	EAP
Onderstepoort Extension 42 Mixed Use Development	Power Developments (Pty) Ltd	EAP
Reigerpark X10 Mixed Use Development	Living Africa (Pty) Ltd	EAP
Sammy Marks Mixed Use Development	Abland	EAP
Swaziland		

Basic Assessments and Environmental Management Programmes

Project	Client Name	Role
Atteridgeville X47 Light Industrial Development	JT Group (Pty) Ltd	Project Manager
Erasmus Estate Mixed Use Development	Erasmus Estate Trust	EAP
Germiston Cemetery	Living Africa (Pty) Ltd	Project Manager & EAP
Homes Haven X24	Central Developments (Pty) Ltd	EAP
Leeuwfontein Shopping Centre	McCormick Property Group	Project Manager & EAP
Lewende Woord Bronkhorstspuit Church and Rehabilitation Centre	Lewende Woord Church and Rehabilitation Centre	EAP
Spes Magte	South African Special Forces	EAP
Waterfall Polofields	Balwin Properties	EAP
Willaway Residential Development	3V Projects	EAP
Waterkloof Marina Retirement Village	Central Development Projects	EAP

Part 2 Amendments

Gem Valley Hauptfleisch	Gem Valley Hauptfleisch (Pty) Ltd	Project Manager & EAP
Greenlee Residential Develop	Balwin Properties Limited	EAP
Heidelberg X25 Mixed Use Development	Mantracare (Pty) Ltd	Project Manager & EAP
The Reid Montessorri School	Balwin Properties	EAP

Part 1 Amendments

Apex X10 Industrial Development	Moolman Group	EAP
Amberfield X47	Central Developments (Pty) Ltd	Project Manager
Clayville X50 and X71 Mixed Use Development	Valumax Midrand (Pty) Ltd	Project Manager & EAP
Klerksoord Mixed Use Development	SafDev (Pty) Ltd	Project Manager & EAP
Mooikloof Mega City	Balwin Properties Limited	EAP
Riverside View X30 – X35	Valumax Northern Farms (Pty) Ltd	Project Manager & EAP

GPEMF

Project	Client Name	Role
Krugerus X9 Residential Development	Moolman Group	Project Manager & EAP
Linbro Park Klulee Residential Development	Balwin Properties Limited	Project Manager & EAP
Theresa Park X66 & X67	Social Housing Regulatory Authority	Project Manager & EAP

NEMA Query

Project	Client Name	Role
Kwa-Mhlanga Crossing	Top Spot (Pty) Ltd	Project Manager & EAP
Waterfall Polofields Show block	Balwin Properties Limited	EAP

24G Rectification Application

Project	Client Name	Role
Dekenah Street	Alrode CC	EAP
Mopane Grootvlei	RuaCon	Project Manager

Water Use License Applications

Project Name	Client Name	Role
Botesdal X15 Light Industrial Development	Open Energy (Pty) Ltd	Project Manager & EAP
Clayville X45 Mixed Use Development	Valumax Midrand (Pty) Ltd	Project Manager & EAP
Ermelo Shopping Centre	Moolman Group	Project Manager & EAP
Gem Valley Hauptfleisch Mixed Use Development	Gem Valley Hauptfließch (Pty) Ltd	Project Manager & EAP
Lewende Woord Bronkhorstspuit Church and Rehabilitation	Lewende Woord Bronkhorstspuit	Project Manager & EAP
Matsamo Mall Shopping Centre	Moolman Group	Project Manager & EAP
Miracle Meadow Water Bottling Facility	Mr Pieter du Randt Pretorius	Project Manager & EAP
Reigerpark Extension 10 and Comet X18 Mixed Use Development	Living Africa 2 (Pty) Ltd	Project Manager & EAP
Norton Park X8 Residential Development	SSI Group	Project Manager & EAP
Onderstepoort X42 Mixed Use Development	Power Developments (Pty) Ltd	Project Manager & EAP
The Whisken	Balwin Properties Limited	Project Manager & EAP
Zwartkop 187 Mixed Use Development	Moolman Group	Project Manager & EAP
Zuurfontein Ptn 221 Residential Development	M&T Developments	Project Manager & EAP

General Authorisations

Project	Client Name	Role
Thokoza Park Recreational Park	City of Ekurhuleni	Project Manager & EAP

Schedule 1 Authorisations

Project	Client Name	Role
Builders Warehouse Midrand	Massmart (Pty) Ltd	Project Manager
Greenlee Borehole Registration	Balwin Properties Limited	Project Manager & EAP
Willway Residential Development	3V projects (Pty) Ltd	Project Manager & EAP

Environmental Auditing

Project	Client Name	Role
Amberfield Estate	Central Developments (Pty) Ltd	Environmental Control Officer
Blue Hills Equestrian Estate	Century Property Development	Environmental Control Officer
Chuma Mall	Eris Property Group	Environmental Control Officer
Diepsloot Ptn 1 Mixed Use Development	Valumax Northern Farms (Pty) Ltd	Environmental Control Officer
Kyalami Hills	Balwin Properties Limited	Environmental Control Officer
Kyalami Ridge Mall	Kyalami Retail Africa	Environmental Control Officer
South Hills Mixed Use Estate	Calgro M3	Environmental Control Officer
Waterfall Estate	Century Property Developments	Environmental Control Officer

CURRICULUM VITAE:



Gerhard Botha

Name: : Gerhardus Alfred Botha
Date of Birth : 11 April 1986
Identity Number : 860411 5136 088
Postal Address : PO Box 12500
Brandhof
9324
Residential Address : 3 Jock Meiring Street
Park West
Bloemfontein
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Cell Phone Number : 084 207 3454
Email Address : gabotha11@gmail.com
Profession/Specialisation : Ecological and Biodiversity Consultant
Nationality: : South African
Years Experience: : 8
Bilingualism : Very good – English and Afrikaans

Professional Profile:

Gerhard is a Managing Director of Nkurenkuru Ecology and Biodiversity (Pty) Ltd. He has a BSc Honours degree in Botany from the University of the Free State Province and is currently completing a MSc Degree in Botany. He began working as an environmental specialist in 2010 and has since gained extensive experience in conducting ecological and biodiversity assessments in various development field, especially in the fields of conventional as well as renewable energy generation, mining and infrastructure development. Gerhard is a registered Professional Natural Scientist (Pr. Sci. Nat.)

Key Responsibilities:

Specific responsibilities as an Ecological and Biodiversity Specialist include, inter alia, professional execution of specialist consulting services (including flora, wetland and fauna studies, where required), impact assessment reporting, walk through surveys/ground-truthing to inform final design, compilation of management plans, compliance monitoring and audit reporting, in-house ecological awareness training to on-site personnel, and the development of project proposals for procuring new work/projects.

Skills Base and Core Competencies

- Research Project Management
- Botanical researcher in projects involving the description of terrestrial and coastal ecosystems.
- Broad expertise in the ecology and conservation of grasslands, savannahs, karroid wetland and aquatic ecosystems.
- Ecological and Biodiversity assessments for developmental purposes (BAR, EIA), with extensive knowledge and experience in the renewable energy field (Refer to Work Experiences and References)
- Over 3 years of avifaunal monitoring and assessment experience.
- Mapping and Infield delineation of wetlands, riparian zones and aquatic habitats (according to methods stipulated by DWA, 2008) within various South African provinces of KwaZulu-Natal, Mpumalanga, Free State, Gauteng and Northern Cape Province for inventory and management purposes.
- Wetland and aquatic buffer allocations according to industry best practice guidelines.
- Working knowledge of environmental planning policies, regulatory frameworks and legislation
- Identification and assessment of potential environmental impacts and benefits.
- Assessment of various wetland ecosystems to highlight potential impacts, within current and proposed landscape settings, and recommend appropriate mitigation and offsets based on assessing wetland ecosystem service delivery (functions) and ecological health/integrity.
- Development of practical and achievable mitigation measures and management plans and evaluation of risk to execution
- Qualitative and Quantitative Research

- Experienced in field research and monitoring
- Working knowledge of GIS applications and analysis of satellite imagery data
- Completed projects in several Provinces of South Africa and include a number of projects located in sensitive and ecological unique regions.

Education and Professional Status

Degrees:

- *2015:* Currently completing a M.Sc. degree in Botany (Vegetation Ecology), University of the Free State, Bloemfontein, RSA.
- *2009:* B.Sc. Hons in Botany (Vegetation Ecology), University of the Free State, Bloemfontein, RSA.
- *2008:* B.Sc. in Zoology and Botany, University of the Free State, University of the Free State, Bloemfontein, RSA.

Courses:

- *2013:* Wetland Management (ecology, hydrology, biodiversity and delineation) – University of the Free State accredited course.
- *2014:* Introduction to GIS and GPS (Code: GISA 1500S) – University of the Free State accredited course.

Professional Society Affiliations:

- The South African Council of Natural Scientific Professions: Pr. Sci. Nat. Reg. No. 400502/14 (Botany and Ecology).

Employment History

- December 2017 – Current: Nkurenkuru Ecology and Biodiversity (Pty) Ltd
- 2016 – November 2017: ECO-CARE Consultancy
- 2015 - 2016: Ecologist, Savannah Environmental (Pty) Ltd
- 2013 – 2014: Working as ecologist on a freelance basis, involved in part-time and contractual positions for the following companies
 - Enviroworks (Pty) Ltd
 - GreenMined (Pty) Ltd
 - Eco-Care Consultancy (Pty) Ltd

- Enviro-Niche Consulting (Pty) Ltd
- Savannah Environmental (Pty) Ltd
- Esicongweni Environmental Services (EES) cc
- 2010 - 2012: Enviroworks (Pty) Ltd

Publications

Publications:

- Botha, G.A. & Du Preez, P.J. 2015. A description of the wetland and riparian vegetation of the Nxamasere palaeo-river's backflooded section, Okavango Delta, Botswana. *S. Afr. J. Bot.*, **98**: 172-173 .

Congress papers/posters/presentations:

- Botha, G.A. 2015. A description of the wetland and riparian vegetation of the Nxamasere palaeo-river's backflooded section, Okavango Delta, Botswana. 41st Annual Congress of South African Association of Botanists (SAAB). Tshipise, 11-15 Jan. 2015.
- Botha, G.A. 2014. A description of the vegetation of the Nxamasere floodplain, Okavango Delta, Botswana. 10st Annual University of Johannesburg (UJ) Postgraduate Botany Symposium. Johannesburg, 28 Oct. 2014.

Other

- Guest speaker at IAIA Free State Branch Event (29 March 2017)
- Guest speaker at the University of the Free State Province: Department of Plant Sciences (3 March 2017):

References:

- Christine Fouché
Manager: GreenMined (Pty) LTD
Cell: 084 663 2399
- Professor J du Preez
Senior lecturer: Department of Plant Sciences
University of the Free State
Cell: 082 376 4404



WORK EXPERIENCES



&

References

Gerhard Botha

ECOLOGICAL RELATED STUDIES AND SURVEYS

- Barcelona 88/11kV substation and 88kV loop-in lines – Botanical Study (for Eskom Distribution).
- Farm development for academic purposes (Maluti FET College) on the Farm Rosedale 107, Harrismith – Ecological Study (for Agri Development Solutions).
- New boardwalk from Suiderstrand Gravel Road to Rasperpunt, Agulhas National Park – Botanical Survey (for SANPARKS).
- New boardwalk linking the southern most tip of Africa to the Cape Agulhas Lighthouse, Agulhas National Park – Botanical Survey (for SANPARKS)
- Construction of an icon at the southern most tip of Africa, Agulhas National Park – Botanical Survey (for SANPARKS).
- Optic Fibre Infrastructure Network, City of Cape Town Municipality – Assisted in botanical field work (for Dark Fibre Africa (Pty) Ltd).
- Optic Fibre Infrastructure Network, Swartland Municipality – Assisted in botanical field work (for Dark Fibre Africa).
- National long haul optic fibre infrastructure network project, Bloemfontein to Beaufort West – Protected and Endangered Species Walk-Through Survey & Invasive Plant Management Plan (for NEOTEL Ltd).
- National long haul optic fibre infrastructure network project, Bloemfontein to Beaufort West – Vegetation Rehabilitation Plan for illegally cleared areas (for NEOTEL Ltd).

- Proposed establishment of the Tugela Ridge Eco Estate on the farm Kruisfontein, Bergville – Ecological Study (for Enviroworks (Pty) Ltd).
- De Aar Freight Transport Hub – Ecological Scoping and Feasibility Study (for Enviroworks (Pty) Ltd).
- Construction of Botshabelo 132 kV line – Ecological Study (for Enviroworks (Pty) Ltd).
- Establishment of Rocks Farm chicken broiler houses – Botanical study (for Rocks Farm (Pty) Ltd).
- Illegally ploughed land on the Farm Wolwekop 2353 – Vegetation Rehabilitation Study (for Enviroworks (Pty) Ltd).
- Proposed Gihon Solar Farm - Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed expansion of the existing Afrimat quarry near Hluhluwe – Botanical Study (for GreenMined (Pty) Ltd).
- Audit of protected *Acacia erioloba* trees within the Assmang Wrenchville housing development footprint area – Botanical Audit (for Eco-Care Consultancy (Pty) Ltd).
- Rehabilitation of the N1 National Road between Sydenham and Glen Lyon – Peer Review of Ecological Report (for EKO Environmental (Pty) Ltd)
- Rehabilitation of the N6 National Road between Onze Rust and Bloemfontein – Peer Review of Ecological Report (for EKO Environmental (Pty) Ltd)
- Proposed expansion of the existing Scottburgh quarry near Amandawe – Botanical Study (for GreenMined (Pty) Ltd).
- Steelpoort Integration Project & Steelpoort to Wolwekraal 400kV Power Line – Botanical Walk Through Survey (for Savannah Environmental (Pty) Ltd).
- Proposed Transalloys circulating fluidised bed power station near Emalahleni – Ecological Impacts Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed Umbani circulating fluidised bed power station near Kriel – Scoping Ecological Impact Assessment & Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed Tshepong 5MW PV, Nyala 5MW and Eland 5MW facilities within Harmony Gold's mining rights areas between Odendaalsrus and Welkom – Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed Noupoot CSP Facility near Noupoot, Northern Cape Province – Ecological Scoping Assessment & Ecological Impacts Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed Buffels Solar 1 PV Facility near Orkney, North West Province – Ecological



Impact Assessment (for Savannah Environmental (Pty) Ltd.).

- Proposed Buffels Solar 2 PV Facility near Orkney, North West Province – Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Kalahari CSP Facility: 132kV Ferrum–Kalahari–UNTU & 132kV Kathu IPP–Kathu 1 Overhead Power Lines, Kathu, Northern Cape Province – Fauna and Flora Pre-Construction Walk Through Survey & Report (for Savannah Environmental (Pty) Ltd.).
- Kalahari CSP Facility: Access Roads, Kathu, Northern Cape Province – Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).
- Karoshoek Solar Valley Development – Additional CSP Facility including tower infrastructure associated with authorised CSP Site 2 near Upington, Northern Cape Province – Ecological Scoping Report (for Savannah Environmental (Pty) Ltd.).
- Karoshoek Solar Valley Development – Proposed Ilanga CSP 7 and 8 Facilities near Upington, Northern Cape Province – Ecological Scoping Report (for Savannah Environmental (Pty) Ltd.).
- Karoshoek Solar Valley Development – Proposed Ilanga CSP 9 Facility near Upington, Northern Cape Province – Ecological Scoping Report (for Savannah Environmental (Pty) Ltd.).
- Karusa Wind Farm (Phase 1 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province): Invasive Plant Management Plan (for Savannah Environmental (Pty) Ltd.).
- Proposed Karusa Facility Substation and Ancillaries near Sutherland, Northern Cape Province – Ecological Basic Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed Eskom Karusa Switching Station and 132kV Double Circuit Overhead Power Line near Sutherland, Northern Cape Province - Ecological Basic Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Karusa Wind Farm (Phase 1 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province): Plant Search and Rescue and Rehabilitation Management Plan (for Savannah Environmental (Pty) Ltd.).
- Authorised Karusa Wind Energy Facility near Sutherland, Northern Cape Province – Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).
- Proposed Soetwater Facility Substation, 132kV Overhead Power Line and Ancillaries, near Sutherland, Northern Cape Province - Ecological Basic Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Soetwater Wind Farm (Phase 2 of the Hidden Valley Wind Energy Facility near

Sutherland, Northern Cape Province): Invasive Plant Management Plan (for Savannah Environmental (Pty) Ltd.).

- Authorised Soetwater Wind Energy Facility near Sutherland, Northern Cape Province - Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).
- Soetwater Wind Farm (Phase 2 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province): Plant Search and Rescue and Rehabilitation Management Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius Phase 1 Solar PV Project near Upington, Northern Cape Province- Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).
- Sirius Phase 2 Solar PV Project near Upington, Northern Cape Province- Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 1) Solar PV Facility near Upington, Northern Cape Province Invasive Plant Management Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 2) Solar PV Facility near Upington, Northern Cape Province - Invasive Plant Management Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 1) Solar PV Facility near Upington, Northern Cape Province – Rehabilitation and Revegetation Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 2) Solar PV Facility near Upington, Northern Cape Province – Rehabilitation and Revegetation Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 1) Solar PV Facility near Upington, Northern Cape Province - Plant Rescue and Protection Plan (for Savannah Environmental (Pty) Ltd.).
- Sirius (Phase 2) Solar PV Facility near Upington, Northern Cape Province - Plant Rescue and Protection Plan (for Savannah Environmental (Pty) Ltd.).
- Proposed Expansion of the existing Komsberg Main Transmission Substation near Sutherland, Northern Cape Province - Ecological Basic Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed Semonkong Wind Energy Facility near Semonkong, Maseru District, Lesotho – Ecological Pre-Feasibility Study (for Savannah Environmental (Pty) Ltd.).
- Proposed Metal Industrial Cluster and Associated Infrastructure near Kuruman, Northern Cape Province – Ecological Scoping Report (for Savannah Environmental (Pty) Ltd.).
- Proposed Woodhouse 1 and Woodhouse 2 PV Facilities near Vryburg, North West Province – Ecological Scoping Report & Ecological Impact Assessment (for Savannah

Environmental (Pty) Ltd.).

- Proposed CAMCO Clean Energy 100kW PV Solar Facility, Thaba Eco Lodge near Johannesburg, Gauteng Province: Ecological and Ridge Basic Assessment Report (for Savannah Environmental (Pty) Ltd.).
- Proposed Orkney Solar PV Facility near Orkney, North West Province - Ecological Scoping Report & Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed 132kV Power Line and On-Site Substation for the Authorised Golden Valley II Wind Energy Facility near Bedford, Eastern Cape Province - Ecological Basic Assessment Report (for Savannah Environmental (Pty) Ltd.).
- S24G for the unlawful commencement or continuation of activities within a watercourse, Honeydew, Gauteng Province – Ecological Assessment Report (for Savannah Environmental (Pty) Ltd.)
- Soetwater Wind Farm (Phase 2 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province): Re-assessment of Impacts and Ecological Sensitivities Following a Proposed Amendment in Turbine Specifications and Facility Layout (for Savannah Environmental (Pty) Ltd.).
- Karusa Wind Farm (Phase 1 of the Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province): Re-assessment of Impacts and Ecological Sensitivities Following a Proposed Amendment in Turbine Specifications and Facility Layout (for Savannah Environmental (Pty) Ltd.).
- Msenge Wind Farm near Bedford, Eastern Cape Province): Re-assessment of Impacts and Ecological Sensitivities Following a Proposed Amendment in Turbine Specifications and Facility Layout (for Savannah Environmental (Pty) Ltd.).
- Iziduli Emoyeni Wind Farm near Bedford, Eastern Cape Province: Re-assessment of Impacts and Ecological Sensitivities Following a Proposed Amendment in Turbine Specifications and Facility Layout (for Savannah Environmental (Pty) Ltd.).
- Proposed H2 Energy Power Station near Kwamhlanga, Mpumalanga Province - Ecological Scoping Report & Ecological Impact Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed Clayville Thermal Plant within the Clayville Industrial Area, Gauteng Province: Ecological Comments Letter (for Savannah Environmental (Pty) Ltd.).
- Proposed 100MW Moeding Solar PV Facility near Vryburg, North West Province – Ecological Basic Assessment (for Savannah Environmental (Pty) Ltd.)
- Proposed Zonnebloem Switching Station (132/22kV) and 2X Loop-in Loop-out Power Lines (132kV), Mpumalanga Province – Ecological Basic Assessment (for Eskom

Distribution)

- Proposed Kruisvallei Hydroelectric Power Generation Scheme in the Ash River, Free State Province – Ecological Basic Assessment (for Savannah Environmental (Pty) Ltd.)
- Sirius Phase 1 Solar PV Project near Upington, Northern Cape Province - Fauna and Flora Pre-Construction Walk-Through Assessment & Report (for Savannah Environmental (Pty) Ltd.).
- Kruisvallei Hydroelectric 22kV Overhead Power Line, Clarens, Free State Province - Pre-Construction Fauna and Flora Walk-Through Investigation (for Savannah Environmental (Pty) Ltd.).
- Kruisvallei Hydroelectric 22kV Overhead Power Line, Clarens, Free State Province - Plant Rescue and Protection Plan (for Savannah Environmental (Pty) Ltd.).

WETLAND DELINEATION AND HYDROLOGICAL ASSESSMENTS

- Proposed Nyala 5MW PV facility within Harmony Gold's mining rights areas between Odendaalsrus and Welkom – Wetland Assessment & Delineation (for Savannah Environmental (Pty) Ltd).
- Proposed Eland 5MW PV facility within Harmony Gold's mining rights areas between Odendaalsrus and Welkom – Wetland Assessment & Delineation (for Savannah Environmental (Pty) Ltd).
- Proposed BlueWave 75MW PV Plant near Welkom Free State Province – Wetland Delineation and compilation of Map (for BlueWave Capital)
- Proposed Wolmaransstad Municipality 75MW PV Solar Energy Facility in the North West Province – Wetland Delineation Assessment (for Savannah Environmental (Pty) Ltd.).
- Proposed expansion of the Elandspruit Quarry near Ladysmith, KwaZulu-Natal Province – Wetland Assessment & Delineation (for GreenMined Environmental (Pty) Ltd.).
- Proposed new Olifantshoek 10MVA 132/11kV Substation and 31km Power Line – Surface Water & Hydrological Assessment (for Savannah Environmental (Pty) Ltd.)
- S24G for the unlawful commencement or continuation of activities within a watercourse, Honeydew, Gauteng Province – Aquatic Assessment Report and Delineation of Floodplains and/or Flood Lines (for Savannah Environmental (Pty) Ltd.)
- Proposed 100MW Moeding Solar PV Facility near Vryburg, North West Province – Wetland Delineation Assessment (for Savannah Environmental (Pty) Ltd.)

- Kruisvallei Hydroelectric 22kV Overhead Power Line (Amended Sections), Clarens, Free State Province – Wetland Delineation Assessment (for Savannah Environmental (Pty).Ltd.)
- Harmony (Nyala, Eland & Tsepong) Solar Energy Facilities: Amendment of Pipeline and Overhead Power Line Route – Wetland Delineation Assessment (for Savannah Environmental (Pty).Ltd.)

AVIFAUNAL ASSESSMENTS

- Proposed TEWA Solar 1 Facility, east of Upington, Northern Cape Province – Avifaunal Impact Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed TEWA Solar 2 Facility, east of Upington, Northern Cape Province – Avifaunal Impact Assessment (for Savannah Environmental (Pty) Ltd).
- Proposed new Olifantshoek 10MVA 132/11kV Substation and 31km Power Line – Avifaunal Impact Assessment (for Savannah Environmental (Pty) Ltd.)
- Proposed 100MW Moeding Solar PV Facility near Vryburg, North West Province – Avifauna Impact Assessment (for Savannah Environmental (Pty) Ltd.)
- Proposed Zonnebloem Switching Station (132/22kV) and 2X Loop-in Loop-out Power Lines (132kV), Mpumalanga Province – Avifauna Impact Assessment (for Eskom Distribution)

ENVIRONMENTAL IMPACT ASSESSMENT

- Barcelona 88/11kV substation and 88kV loop-in lines – BA (for Eskom).
- Thabong Bulk 132kV sub-transmission inter-connector line – EIA (for Eskom).
- Groenwater 45 000 unit chicken broiler farm – BA (for Areemeng Mmogo Cooperative).
- Optic Fibre Infrastructure Network, City of Cape Town Municipality – BA (for Dark Fibre Africa (Pty) Ltd).
- Optic Fibre Infrastructure Network, Swartland Municipality – BA (for Dark Fibre Africa).
- Construction and refurbishment of the existing 66kV network between Ruigtevallei Substation and Reddersburg Substation – EMP (for Eskom).
- Lower Kruisvallei Hydroelectric Power Scheme (Ash river) – EIA (for Kruisvallei Hydro (Pty) Ltd).
- Construction of egg hatchery and associated infrastructure – BA (For Supreme Poultry).
- Construction of the Klipplaatdrif flow gauging (Vaal river) – EMP (DWAF).

ENVIRONMENTAL COMPLIANCE AUDITING AND ECO

- National long haul optic fibre infrastructure network project, Bloemfontein to Laingsburg – ECO (for Enviroworks (Pty) Ltd.).
- National long haul optic fibre infrastructure network project, Wolmaransstad to Klerksdorp – ECO (for Enviroworks (Pty) Ltd.).
- Construction and refurbishment of the existing 66kV network between Ruigtevallei Substation and Reddersburg Substation – ECO (for Enviroworks (Pty) Ltd.).
- Construction and refurbishment of the Vredefort/Nooitgedacht 11kV power line – ECO (for Enviroworks (Pty) Ltd.).
- Mining of Dolerite (Stone Aggregate) by Raumix (Pty) Ltd. on a portion of Portion 0 of the farm Hillside 2830, Bloemfontein – ECO (for GreenMined Environmental (Pty) Ltd.).
- Construction of an Egg Production Facility by Bainsvlei Poultry (Pty) Ltd on Portions 9 & 10 of the farm, Mooivlakte, Bloemfontein – ECO (for Enviro-Niche Consulting (Pty) Ltd.).
- Environmental compliance audit and botanical account of Afrisam's premises in Bloemfontein – Environmental Compliance Auditing (for Enviroworks (Pty) Ltd.).

OTHER PROJECTS:

- Keeping and breeding of lions (*Panthera leo*) on the farm Maxico 135, Ficksburg – Management and Business Plan (for Enviroworks (Pty) Ltd.)
- Keeping and breeding of lions (*Panthera leo*) on the farm Mooihoek 292, Theunissen – Management and Business Plan (for Enviroworks (Pty) Ltd.)
- Keeping and breeding of wild dogs (*Lycaon pictus*) on the farm Mooihoek 292, Theunissen – Management and Business Plan (for Enviroworks (Pty) Ltd.)
- Existing underground and aboveground fuel storage tanks, TWK AGRI: Pongola – Environmental Management Plan (for TWK Agricultural Ltd).
- Existing underground fuel storage tanks on Erf 171, TWK AGRI: Amsterdam – Environmental Management Plan (for TWK Agricultural Ltd).
- Proposed storage of 14 000 L of fuel (diesel) aboveground on Erf 32, TWK AGRI: Carolina – Environmental Management Plan (for TWK Agricultural Ltd).
- Proposed storage of 23 000 L of fuel (diesel) above ground on Portion 10 of the Farm Oude Bosch, Humansdorp – Environmental Management Plan (for TWK Agricultural Ltd).

- Proposed storage of 16 000 L of fuel (diesel) aboveground at Panbult Depot – Environmental Management Plan (for TWK Agricultural Ltd).
- Existing underground fuel storage tanks, TWK AGRI: Mechanisation and Engineering, Piet Retief – Environmental Management Plan (for TWK Agricultural Ltd).
- Existing underground fuel storage tanks on Portion 38 of the Farm Lothair, TWK AGRI: Lothair – Environmental Management Plan (for TWK Agricultural Ltd).



CURRICULUM VITAE

Name: **LUKAS JURIE NIEMAND**
Company: **Pachnoda Consulting cc (Director)**
Date of Birth: 1974-03-12
Nationality: South African
Languages: English and Afrikaans

EDUCATIONAL QUALIFICATIONS

1992 Hoërskool Hartbeespoort, Hartbeespoort - Senior Certificate.
1996 University of Pretoria, Pretoria - B.Sc. (Zoology and Entomology).
1997 University of Pretoria, Pretoria - B.Sc. (Hons) (Entomology).
2001 University of Pretoria, Pretoria - M.Sc. (Restoration Ecology/Zoology).

MEMBERSHIP IN PROFESSIONAL SOCIETY

- Professional Natural Scientist (Pr. Sci. Nat.) (Reg. no. 400095/06 - Ecology & Zoology)
 - BirdLife South Africa (1039913)
 - Hartbeespoort Natural Heritage Society
-

COMPANY EXPERIENCE

Pachnoda Consulting CC is a small enterprise based in Pretoria, South Africa providing specialised consulting services and products in the terrestrial ecological milieu for mining companies, environmental consultants, developers and other industry related institutions throughout Africa and abroad.

Pachnoda Consulting envisions a holistic approach to ensure the sustainable development and preservation of natural resources based on accepted scientific methods. Since its establishment in 2007, it has produced several ecological assessments, including botanical and faunal surveys spanning all nine provinces in South Africa and a number of African countries. It provides a broad-range of quality services that specialises in ornithology (avifauna), entomology (invertebrates) and

general zoology. In addition, it values a long-standing relationship with various non-governmental and tertiary institutions notably the University of Pretoria, Endangered Wildlife Trust, BirdLife South Africa, the Agricultural Research Council and the South African Biodiversity Institute.

Core services include:

- Objective and quantified ecological assessments (a holistic eco-system approach based on approved scientific methods) in accordance with International Best Practice (e.g. International Finance Corporation's Performance Standards & Millennium Challenge Corporation's Guidelines)
- Ecological due diligence and risk assessments;
- Taxon-specific surveys in the botanical, mammalian, avifaunal and invertebrate fields;
- Bird impact studies for power lines and renewable energy plants;
- Biodiversity action plans; and
- Mapping and modelling of species distributions and ecological sensitivities.

MEMBERS

Lukas Niemand is director and founding member of Pachnoda Consulting. He has been involved in the discipline of consultant ecologist since 2000, and his core services include ecological studies with emphasis on ornithological (the study of birds), faunal and entomological (the study of invertebrates) assessments.

He has travelled extensively to many remote places as far afield as Marion Island, and has worked on numerous international projects pertaining to the African continent (South Africa, Lesotho, Mozambique, Burundi, Congo-Brazzaville, Liberia, Zambia and Ethiopia). He worked on projects earmarked for the urban and mining sector and has been involved in linear projects, monitoring programmes, biodiversity action plans as well as specific investigations regarding species with rare/elusive life-history traits (e.g. threatened species).

He is also registered with the panel of the Birds and Renewable Energy division of BirdLife South Africa.

PROJECTS

A. Work conducted in South Africa

1. General Ecological Assessments (Fauna, Flora and Red Data Scans, including both functional and compositional aspects):

- Belvedere Trust, Proposed retirement village on Amorosa Agricultural Holdings, Roodepoort, Gauteng (2004);
- City of Joburg Property Development Company, Proposed upgrade and development of the Orlando Dam Intersection, Soweto, Gauteng (2004);
- PDNA, Proposed NASREC development, Johannesburg, Gauteng (2004);
- 17 Shaft Conference and Education Centre, Proposed establishment of the Veteran's Heritage Education Centre, Crown Mines, Gauteng (2004);
- GAUTRANS, Proposed re-alignment of Road D781 and construction of a road bridge over the Rietvleispruit, Kempton Park, Gauteng (2004);
- Mr. N. Lang, Ecological Opinion on the proposed establishment of a township, Muldersdrift, Gauteng (2004);
- AGES, Proposed Equestrian Centre, Leeufontein 299 IR, Gauteng (2004);
- PDNA, Proposed new bridge and re-alignment of a portion of provincial road P101-2 (R51), Laversburg, Gauteng (2004);
- Blenneerville Investment (Pty) Ltd, Proposed construction of a residential and commercial development on of Paradiso Estate, Tweefontein 372 JR, Gauteng (2004);
- Les Roches (Pty) Ltd, Proposed zoning of holdings 1, 2 & 3 of Hyde Park Agricultural Holdings, Gauteng (2004);
- Transnet Limited, Terrestrial Faunal Ecological Opinion: Phase 1B expansion of the Sishen-Saldanha Iron ore export corridor, Saldanha Bay, Western Cape (2005);
- Celebration North Riding (Pty) Ltd, Proposed mixed land-use development, North Riding, Gauteng (2005);
- Wilderness Safaris, Proposed upgrade of the Manzengwenya Dive Camp, Greater St. Lucia Wetlands Park, KwaZulu-Natal (2005);
- Wilderness Safaris, Proposed upgrade of the Rocktail Bay Camp, Greater St. Lucia Wetlands Park, KwaZulu-Natal (2005);
- GAEA Projects, Corridor Assessment for the proposed Sibaya Precinct, KwaZulu-Natal (2005);

- Computer Domain Holdings (Pty) Ltd, Red Data Floral Scan on portion 3 of the farm Elandshoek, portions 12 & 27 of the farm Groot Suikerboschkop, and portions 5 & 10 of the farm Palmietfontein, Dullstroom (2005);
- Zong's Property Investments, Proposed establishment of a residential development on a portion of Pomona Estates Agricultural Holdings, Pomona, Gauteng (2005);
- GJ van Zyl Trust, Proposed development of a resort on the Farm Witpoort 216 JS, Mpumalanga (2005);
- Mr. Howard Walker, Proposed subdivision of the Farm Lunsklip 105 JT, and the Farm Morgenzon 122 JT, for the establishment of a private resort, Dullstroom, Mpumalanga (2005);
- Lavender Manor cc, Proposed establishment of a retail, commercial and Lavender Manor Township on part of farm Rietfontein 189 IQ, Muldersdrift, Gauteng (2005);
- Geo Pollution Technologies, Proposed establishment of a residential development: Noordwyk Ext 65 & 80 on Erand Agricultural Holdings, Midrand, Gauteng (2005);
- Mr. A. Le Roux, Proposed Cradle View Country Estate, Muldersdrift, Gauteng (2006);
- Viking Bay Development Company (Pty) Ltd, Proposed Viking Bay freshwater marina and hotel development, Vaal Dam, Gauteng (2006);
- Land for Africa (Pty) Ltd, Ecological Opinion for the proposed establishment of a residential township on holding 122 Erand Agricultural Holding Extension 1, Halfway House, Midrand, Gauteng (2006);
- Brickot Developments cc, Ecological opinion for the proposed Bethal Retirement Village on the remainder of portion 3 of the farm Mooifontein 108 IS, Bethal, Mpumalanga (2006);
- Brawild (Pty) Ltd, Red Data Scan for the proposed Annlin Ex 117, Pretoria, Gauteng (2006);
- Mbombela Local Municipality, Ecological Opinion for the proposed extension of the Lowveld Botanical Gardens, Nelspruit, Mpumalanga (2006);
- Natural Scientific Services cc, Botanical survey for the SASOL Mafutha coal project near Lephale, Limpopo Province, RSA (2008);
- SRK Consulting, Ecological assessment on Vlakfontein area, NW of Ogies, Mpumalanga. Report compiled in association with EcolInfo (2009); and
- Aurecon, Desktop biodiversity assessment and wetland scan: upgrade of the River View waste water treatment works, eMalahleni, Mpumalanga province. Report compiled in association with Imperata Consulting (2009).

2. Mining and Industrial related projects (ecological):

- Lonmin Platinum (Western Platinum Limited), Ecological Assessment for the proposed MK3 Shaft Complex on the farm Wonderkop 400 JQ, Rustenburg, North West Province (2004);

- Impala Platinum Limited, Ecological Assessment for prospecting SEMP's on the farms Buffelshoek 386 KT, Kalkfontein 367 KT, Spitskop 333 KT, Steelpoortpark 366 Kt and Tweefontein 360 KT and Hackney 116 KT (all Sekhukhuneland), Mpumalanga and Limpopo Province (2004);
- Trans-Caledon Tunnel Authority (TCTA), Ecological Assessment for borrow pit SEMP's on the TCTA pipeline, Vaal Marina to Secunda (2005);
- Boynton Platinum (Pty) Ltd, Ecological Assessment for the proposed establishment of platinum mines on the farms Tuschenkomst 135 JP, Witkleifontein 136 JP and Ruighoek 169 JP, North West Province (2005);
- Impala Platinum Holdings, Ecological Assessment for prospecting SEMP's on the Impala Platinum Bafokeng Mining Complex, North West Province (2005);
- Ceramic Industries Limited, Ecological Assessment of the Rietspruit Clay Quarries, Vanderbijlpark, Gauteng (2005);
- Ekurhuleni Metropolitan Municipality, Ecological Assessment Report for the proposed GLB Landfill Site on the farm Zesfontein 27 IR, Benoni, Gauteng (peer reviewed, 2006);
- Ceramic Industries Limited, Ecological Assessment of the Leeukuil Clay Quarries, Vanderbijlpark, Gauteng (2006);
- Council for Geoscience, Habitat sensitivity assessment scoping report for Bon Accord quarry on a portion of the farm de Onderstepoort 300-JR, Tshwane, Gauteng (2007);
- Fraser Alexander, Biodiversity action plan for Lonmin Limpopo & Platinum, North West & Limpopo Province, RSA (2008-2009);
- Envirolution Consulting (Pty) Ltd., Ecological screening report and site selection process for an Eskom general landfill and hazardous waste storage facility near Lephalale, Limpopo Province, RSA (2009);
- Envirolution Consulting (Pty) Ltd., Ecological assessment for the proposed construction of an Eskom general landfill and hazardous waste storage facility at the Matimba Power Station, Limpopo Province, RSA (2009);
- Shangoni/Vergenoeg Mining Company, Ecological assessment for the proposed construction of a slurry pipeline and waste rock dump at the Vergenoeg Mine, Gauteng (2011);
- ENVASS, An ecological evaluation (vertebrate & avifaunal component) for the proposed alternative energy plant on Portion 3, 4 & 5 of the Farm Groenwater 453, Northern cape (2012); and
- ENVASS, Ecological evaluation (vertebrate & avifaunal component) for the proposed alternative energy plant on !xun & khwe, Northern cape (2012).
- Mulilo & CSIR, Ecological evaluation (vertebrate & avifaunal component) for seven proposed PV plants near Kenhardt, Northern Cape (2016);

- Shangoni & Aquila Resources (Vegetation, vertebrate & avifaunal component) for the mining of Iron Ore at Meletse Mountain near Thabazimbi, including the compilation of a habitat occurrence model for a threatened fern species (*Cheilanthes deltoidea silicicola*) and an offset strategy (2016);
- EkoInfo/AngloCoal - Biodiversity assessment (vertebrates and invertebrates) for Kriel Coal Mine Lisene Area (18 000ha), Kriel, Mpumalanga (2017).

3. Avifaunal and Invertebrate Assessments:

- Lavender Manor cc, Red Data Bird Assessment for the proposed establishment of a retail, commercial and Lavender Manor Township on part of the farm Rietfontein 189 IQ, Muldersdrift, Gauteng (2004);
- Helga Schneider & Associates, Avifaunal & Invertebrate Red Data Assessment for the proposed rezoning & subdivision on Erf 6486 Orange Farm Ext 2, Johannesburg, Gauteng (2005);
- TOWNDEV, Avifaunal and Arachnid Assessment for the proposed subdivision of Grootfontein 349 JR, Rievlei Dam, Gauteng (2006);
- Prof. Van Rensburg, Red Data Invertebrate Scan for the proposed Rietvalleirand Extension 59, Gauteng (2006);
- Group Five Property Development, Invertebrate Assessment for the proposed Buccleuch Ex 1, Gauteng (2006);
- Zong's Property Investments, Avifaunal and *Metisella meninx* assessment for the establishment of a residential development on a portion of Pomona Estates Agricultural Holdings, Pomona, Gauteng (2006);
- Waterval Islamic Institute, Avifaunal and Invertebrate Assessment for the proposed Northern Golf Course Development, Midrand, Gauteng (2006);
- Ekurhuleni Metropolitan Municipality, Avifaunal & Invertebrate Red Data Assessment for the proposed low-cost housing development on Olifantsfontein 410 JR, Gauteng (2006);
- City of Tshwane Metropolitan Municipality, Invertebrate Red Data Scan for the proposed flood remediation and river upgrade at Soshanguve, Gauteng (2006);
- AGES, Invertebrate assessment for the proposed mining activities on the farm Thorncliffe 374 KT, Xstrata Eastern Mines, Mpumalanga (2007)
- AGES, Mammal and invertebrate assessment for the proposed Kalplats project, Stella, North West Province (2007)
- Exigent Engineering Consultants, Invertebrate assessment for the proposed Derdepoort X 11, Derdepoort, Gauteng (2007);
- Exigent Engineering Consultants, Invertebrate and Avifaunal scan for the proposed Cutty Sark hotel extension, Scottburgh, Kwazulu-Natal (2007);

- Strategic Environmental Focus, African Grass Owl assessment on the proposed Cradle View country estate on portion 60 of the farm Driefontein 179 IQ, Muldersdrift, Gauteng (2007);
- GEOLAB, Ecological assessment for the West Rand Gold Operations (WERGO) Witfontein tailings disposal facility, Mintails, Gauteng, RSA (2008);
- Coastal Environmental Services, Avifaunal Assessment for the proposed mining of heavy minerals at Port Durnford (Exxaro KZN-Sands), KwaZulu-Natal (2008);
- SRK & Natural Scientific Services cc, A feasibility study for the mining of coal north of the Limpopo Province. Avifaunal & invertebrate assessment, Rio Tinto Exploration, Limpopo Province, RSA (2009);
- Eskom/Baagi Environmental, An environmental management plan (avifaunal & faunal component) for the proposed Dinaledi - Spitskop 400 kV transmission line, North West Province (2010);
- Eskom/Baagi Environmental, An avifaunal impact report for the proposed 400 kV Ariadne-Venus transmission line between Estcourt and Pietermaritzburg, KwaZulu-Natal (2010);
- Eskom/Baagi Environmental, An avifaunal impact assessment report for a 275 kV power line between the substations of Glockner and Kookfontein, Vanderbijlpark, Gauteng (2010);
- Groundwater Consulting Services (Pty) Ltd/EkoInfo, An invertebrate and avifaunal specialist report for the proposed expansion of Exxaro's Glisa coal mine, Belfast, Mpumalanga (2010);
- Eskom/Baagi Environmental, An environmental management plan (avifauna component) for the proposed 400 kV Medupi-Massa transmission lines, Limpopo Province (2011);
- Eskom/Baagi Environmental, An avifaunal and fauna impact assessment report for the proposed 400 kV Arnott-Gumeni transmission line, Mpumalanga Province (2012);
- Eskom/Baagi Environmental, An environmental management plan (avifaunal component) for the proposed 400 kV Ngwedi transmission line and substation, North West Province (2012);
- Exxaro/EkoInfo, An avifaunal and invertebrate assessment (as part of a Biodiversity Assessment and action plan) for the Gravelotte MagVanTi Mining Area, Limpopo Province (2012);
- Groundwater Consulting Services (Pty) Ltd/EkoInfo, An invertebrate and avifaunal specialist report for the proposed Paardeplaats coal mine area, Belfast, Mpumalanga (2012);
- Groundwater Consulting Services (Pty) Ltd/EkoInfo, An invertebrate and avifaunal specialist report for the proposed Leeuwpan coal mine area, Belfast, Mpumalanga (2013);
- Eskom/Baagi Environmental, An environmental management plan (avifaunal component) for the proposed Medupi - Borutho 400 kV transmission line, Limpopo Province (2012);
- Eskom/Baagi Environmental, An environmental management plan (avifaunal component) for the proposed Gromis - Oranjemund 400 kV transmission line, Northern Cape (2013);

- Eskom/Baagi Environmental, An environmental management plan (avifaunal component) for the proposed Ariadne - Eros 400 kV transmission line, KwaZulu-Natal (2014);
- Eskom/Baagi Environmental, An avifaunal and fauna impact assessment report for the proposed 400 kV Nzhelele - Triangle Project, Musina, Limpopo Province (2014);
- Exxaro/ekoInfo, An avifauna and invertebrate investigation for the proposed Zonderwater Coal Project, Lephalale, Limpopo Province (2014);
- Eskom/Baagi Environmental, An environmental management plan (avifaunal component) for the proposed Everest - Merapi 400 kV transmission line, Free State Province (2015); and
- Malelane Safari Resort Investments, An avifaunal investigation for the proposed safari lodge near Malelane Gate, Kruger National Park (2015);
- Exigent, An avifaunal investigation for the proposed Zamokuhle Development within the Pongola Game Reserve, Mkuzi, KwaZulu-Natal (2016).

4. Other Assessments:

- Facilitation, project management and conduction of environmental scoping exercises, Environmental Impact Assessments, Environmental Management Plans, Feasibility Reports, for a range of projects and issues such as:
 - Housing Projects (West Rand Housing Projects) for the Gauteng Department of Housing;
 - Planning and facilitation of environmental awareness workshops (Winterveldt Workshops for the Department of Environmental Affairs and Tourism);
 - Compilation and evaluation of EIA reports and Environmental Management Plans (EMPs) for both the private and public sector (e.g. Scoping Report for the relocation of oxidation ponds for the Mqohaka Local Municipality and the installation of an underground additive tank for Sasol Oil (Pty) Ltd).
 - Urban Renewal Projects: Bekkersdal Urban Renewal Project and the Greater Evaton Urban Renewal Project for the Gauteng Department of Housing.
- Douglas Collieries (Inkwe Collieries), Biodiversity Assessment and database compilation of the Douglas Collieries (2005);
- Orion Group, Ecological Sensitivity Map for the proposed golf course and related facilities, Mont-Aux-Sources (2005);
- City of Joburg Property Development Company, Specialist *Lepidium mossii* assessment for the proposed upgrade and development of the Orlando Dam intersection, Soweto, Gauteng (2005);
- Johannesburg Roads Agency, Alien Eradication and Rehabilitation Programme for the proposed upgrade of 14th Avenue, Randburg, Gauteng (2006);

- City of Joburg Property Development Company, Ecological Management Plan for the Orlando Dam intersection, Soweto, Gauteng (2006);
- GJ van Zyl Trust, Alien Eradication Programme for the proposed development of a resort on the Farm Witpoort 216 JS, Mpumalanga (2006);
- GJ van Zyl Trust, Fire Management Plan for the proposed development of a resort on the Farm Witpoort 216 JS, Mpumalanga (2006); and
- Khutala Collieries (Inkwe Collieries), Biodiversity Assessment and database compilation (2006)

5. Linear Assessments:

- Johannesburg Roads Agency, Ecological Assessment for the Proposed upgrade of 14th Avenue, Randburg, Gauteng (2004).
- Trans-Caledon Tunnel Authority (TCTA), Proposed Vaal River Eastern Subsystem Augmentation (VRESAP) pipeline from Vaal Marina to Secunda (2005);
- PBA International (in association with Bathusi EC), Ecological Scoping Report for the proposed Eskom Delta-Epsilon 765 kV Transmission lines (2007);
- Bohlweki Environmental (in association with Bathusi EC), Ecological Scoping Report for the proposed Eskom Malelane-Boulders 132 kV Distribution line (2007);
- Bohlweki Environmental (in association with Bathusi EC), Ecological Scoping Report for the proposed Eskom Marathon-Delta 132 kV Distribution line (2007);
- Strategic Environmental Focus, Avifaunal EIA Report for the proposed Eskom Hendrina-Prairie-Marathon 400 kV Transmission line, Mpumalanga (2007);
- Natural Scientific Services cc, Botanical survey for the proposed upgrade of the Transnet railway line between Hotazel, Northern Cape and the Port of Ngqura, Eastern Cape, RSA (2008);
- Envirolution Consulting (Pty) Ltd, Ecological Report for the proposed Eskom Apollo-Lepini 400kV transmission line (2009);
- Arcus Gibb, An ecological investigation for the Tumelo 132 kV distribution line and power line near Kagiso, Gauteng (2010);
- Ekoinfo/SANRAL, Faunal investigation for the upgrade of the N3 highway (2011); and
- Aurecon (Pty) Ltd, Baseline vegetation survey for the Mokolo – Crocodile River Augmentation Project (MCWAP) pipeline from Mokolo Dam to Thabazimbi (2011);
- Aurecon (Pty) Ltd, Baseline vegetation survey for input into rehabilitation plan for the Olifants River Water augmentation pipeline, Steelpoort (2016); and
- AECOM, Fauna assessment for the proposed upgrade of the Moloto Road through Gauteng, Mpumalanga and Limpopo Provinces (2016).

B. Work conducted in other African countries:

- Rural Maintenance, Invertebrate study for four mini-hydroelectric generation plants, Northern Malawi, Africa (2010);
- Impacto, An avifaunal study (Phase 1) for the proposed Mpanda Nkwua Dam in the Zambezi River, Mozambique, Tete Province (2010);
- Conseil Régional des Pays de la Loire, An avifaunal investigation of the Rusizi and Ruvubu National Parks (Burundi), and the feasibility of establishing an avi-tourism network with specific emphasis on the protection of important flyways used by Palearctic birds - of - prey (2010);
- Impacto, An avifaunal study (Phase 2) for the proposed Mpanda Nkwua Dam in the Zambezi River, Mozambique, Tete Province (2011);
- Rural Maintenance, Invertebrate scan for the expansion of coal mining activities at Kayelekera, Northern Malawi, Africa (2011);
- Rural Maintenance, Invertebrate study for a mini-hydroelectric plant at the Chisanga Falls, Nyika National Park, Malawi (2011);
- Impacto/ERM/Enviro-Insight, Avifaunal investigation for the proposed Ncondezi Coal Mine, Tete Province, Mozambique (2011);
- Enviro-Insight, Avifaunal investigation for the Riversdale Coal Mine complex, Tete Province, Mozambique (2011);
- Anadarko Petroleum/ERM/Enviro-Insight, Avifaunal investigation for the proposed Anadarko Mozambique Area 1 Liquefied Natural Gas plant in northern Mozambique, Cabo Delgado Province, Mozambique (2012);
- Coffey Environments/EkoInfo, Avifaunal investigation for the mining of iron ore by Baobab Resources, Tete Province, Mozambique (a scoping-level assessment); and
- SRK/Flora, Fauna and Man Ecological Services, An avifaunal and invertebrate assessment for the establishment of a potash mine at Konkoati, Republic of the Congo (2012);
- China Union/ERM/Enviro-Insight, Avifaunal investigation for the proposed mining of iron ore in Bong County, Liberia (2012);
- SRK/Flora, Fauna and Man Ecological Services, An invertebrate assessment for the mining of iron ore by DMC Congo Mining/Exxaro at Mayoko, Republic of the Congo (2012);
- Western Cluster/ERM/Enviro-Insight, Avifaunal investigation for the proposed mining of iron ore at Bomi Hills, Bomi County, Liberia (2013);
- SRK/Flora, Fauna and Man Ecological Services, An invertebrate assessment for the establishment of an ecological offset for the DMC Congo Mining/Exxaro Iron Ore Mine at Mayoko, Republic of the Congo (2013);

- Western Cluster/ERM/Enviro-Insight, Avifaunal investigation for the proposed mining of iron ore at Bea Mountain, Grand Cape Mount County, Liberia (2013);
- Western Cluster/ERM/Enviro-Insight, Avifaunal investigation for the proposed mining of iron ore at Mano River, Grand Cape Mount County, Liberia (2013);
- Anadarko Petroleum/ERM/Enviro-Insight, DUAT Area Terrestrial Ecology Baseline Augmentation: Avifaunal Component with emphasis on determining important flyways for emblematic non-passerine birds where the potential risk of avian collisions to approaching aircraft is eminent during the establishment of an airstrip, Cabo Delgado Province, Mozambique (2012);
- Anadarko Petroleum/ERM/Enviro-Insight, Regional Terrestrial Baseline Report, Avifaunal Component for the Mozambique Gas development with emphasis on critical habitat as per the IFC PS6, Cabo Delgado Province, Mozambique (2012);
- WSP/Flora, Fauna and Man Ecological Services, An invertebrate assessment for the establishment of a phosphate mine, Hinda Phosphate Project, Republic of the Congo (2014);
- De Beers/Bathusi Environmental, An avifaunal monitoring report for the Letseng Diamond Mine, Lesotho (2015);
- ASCOM Mining/ Flora, Fauna and Man Ecological Services, An Invertebrate and Avifaunal survey for the proposed mining of gold in western Ethiopia, Ethiopia (2015);
- Western Power/Ecotone - A faunal investigation for the proposed development of a hydro-powered generation plant at Sioma, western Zambia (2015);
- Aureus Mine/Enviro-Insight, An avifaunal investigation for the proposed mining of gold at the New Liberty Gold Mine, Liberia (2015 - 2016);
- SRK/ Flora, Fauna and Man Ecological Services, An invertebrate and avifaunal screen for the proposed mining of phosphate substances at Dougou, part of a mining license extension of the Kola Project, Republic Of Congo (2016);
- De Beers/Bathusi Environmental, An avifaunal monitoring report (second monitoring session) for the Letseng Diamond Mine, Lesotho (2017).

C. Additional Experience:

- Monitoring and evaluation of the rehabilitation programme for the mining company Richards Bay Minerals (RBM) with special reference to vegetation, bird, small mammal and millipede assemblages.
- Other responsibilities include assessment of the ecological standard operating procedures (SOP) according to RBM's environmental management programme in compliance with ISO 14001 environmental standards accreditation process.
- Participated in the annual relief programme on the S.A Agulhas voyage to Subantarctic Marion Island (Prins Edward group). Took part in the research to estimate the population dynamics

and demography of the alien house mouse (*Mus musculus*) on the island (under supervision of the University of Pretoria).

- Participated in the preparation of a conservation management plan for a game and trout farm in conjunction with Mpumalanga Parks Board (in charge of the bird section) for the farm Nu-Scotland Bavaria.
- Lead a successful professional bird tour (party of 12) to the Eastern Zimbabwean highlands and adjacent Mashonaland Plato (10 days).
- Lead a successful professional bird tour (party of 9) to the Cape Peninsula, Karoo and West Coast (10 days).
- Lead a successful professional bird tour (party of 12) to the Swaziland and Northern Zululand (10 days).
- Lead a successful professional bird tour (party of 15) to the Namibia (10 days).
- Lead a successful professional bird tour (party of 14) to the Eastern Drakensberg and Lesotho (10 days).

Employment History:

March 2007 – Current: of Director of Pachnoda Consulting cc

2004- January 2007: Strategic Environmental Focus (Pty) - Terrestrial Ecologist

2003 – 2004: Enviro-Afrik (Pty) Ltd– Environmental Consultant

2001 – 2003: University of Pretoria - Research Assistant

PUBLICATIONS:

- McEWAN, K.L., ALEXANDER, G.J., NIEMAND, L.J. & BREDIN, I.P. 2007. The effect of land transformation on diversity and abundance of reptiles. Paper presented at the 50th Anniversary Conference of the Zoological Society of Southern Africa.
- NIEMAND, L. 1997. Distribution and consumption of a rust fungus *Ravenelia macowaniana* by micro-lepidopteran larvae across an urban gradient: spatial autocorrelation and impact assessment. Hons publication, University of Pretoria, Pretoria

- NIEMAND, L. 2001. The contribution of the bird community of the regenerating coastal dunes at Richards Bay to regional diversity. MSc Thesis, University of Pretoria, Pretoria.
- VAN AARDE, R.J., WASSENAAR, T.D., NIEMAND, L., KNOWLES, T., FERREIRA, S. 2004. Coastal dune forest rehabilitation: a case study on small mammal and bird assemblages in northern KwaZulu-Natal, South Africa. In: Martínez, M.L. & Psuty, N. (Eds.) *Coastal sand dunes: Ecology and Restoration*. Springer-Verlag, Heidelberg.
- VAN AARDE, R., DELPORT, J. & NIEMAND, L. 1999. Of frogs and men. *Mechanical Technology*, June: 32-33.
- VAN AARDE, R., DELPORT, J. & NIEMAND, L. 1999. Gone Frogging. *Getaway*, January: 80-83.

PRESENTATIONS & CONFERENCES:

- Co-presenter at the Wetland Training Course (30 July – 3 August 2007) entitled: "Wetland-associated fauna". University of Pretoria, Pretoria.
- Co-presenter and lecturer of the pre-conference training course (entitled "Can rehabilitation contribute towards biodiversity?") at the 3rd Annual LaRSSA (Land Rehabilitation Society of Southern Africa) Conference (8-11 September 2015), Glenburn Lodge, Muldersdrift, Gauteng.

CURRICULUM VITAE

A. Personal Details

Last name: **Pienaar**

First name: **Mariné**

Nationality: **South African**

Employment: **Self-employed (Consultant)**

B. Contact Details

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Mailing address: **PO Box 433, Ottosdal, 2610**

Telephone: **+27828283587**

Address: **57 Kruger Street, Wolmaransstad, 2630, Republic of South Africa**

Current Job: **Lead Consultant and Owner of Terra Africa Consult**

C. Concise biography

Mariné Pienaar is a professionally registered soil- and agricultural scientist (SACNASP) who has consulted extensively for the past eleven years in the fields of soil, land use and agriculture in several African countries. These countries include South Africa, Liberia, Ghana, DRC, Mozambique, Botswana, Angola, Swaziland and Malawi. She has worked with mining houses, environmental consulting companies, Eskom, government departments as well as legal and engineering firms. She conducted more than three hundred specialist studies that included baseline soil assessment and rehabilitation planning for new projects or expansion of existing projects, soil quality monitoring, land rehabilitation assessment and monitoring, natural resource assessment as part of agricultural project planning, evaluation and development of sustainable agriculture practices, land use assessment and livelihood restoration planning as part of resettlement projects and land contamination risk assessments. She holds a BSc. Agriculture degree with specialisation in Plant Production and Soil Science from the University of Pretoria and a MSc in Environmental Science from the University of the Witwatersrand. In addition to this, she has attended a number of

courses in Europe, the USA and Israel in addition to those attended in South Africa. Mariné is a contributing author of a report on the balance of natural resources between the mining industry and agriculture in South Africa (published by the Bureau for Food and Agricultural Policy, 2015).

D. Qualifications

Academic Qualifications:

- ♦ **MSc Environmental Science**; University of Witwatersrand, South Africa, 2018
- ♦ **BSc (Agric) Plant Production and Soil Science**; University of Pretoria, South Africa, 2004
- ♦ **Senior Certificate / Matric**; Wolmaransstad High School, South Africa, 2000

Courses Completed:

- ♦ **World Soils and their Assessment**; ISRIC – World Soil Information, Wageningen, 2015
- ♦ **Intensive Agriculture in Arid- and Semi-Arid Environments** – Gilat Research Centre, Israel, 2015
- ♦ **Hydrus Modelling of Soil-Water-Leachate Movement**; University of KwaZulu-Natal, South Africa, 2010
- ♦ **Global Sustainability Summer School 2012**; Institute for Advanced Sustainability Studies, Potsdam, Germany, 2012
- ♦ **Wetland Rehabilitation**; University of Pretoria, South Africa, 2008
- ♦ **Enviropreneurship Institute**; Property and Environment Research Centre [PERC], Montana, U.S.A., 2011
- ♦ **Youth Encounter on Sustainability**; ACTIS Education [official spin-off of ETH Zürich], Switzerland, 2011
- ♦ **Environmental Impact Assessment | Environmental Management Systems – ISO 14001:2004 | Environmental Law**; University of Potchefstroom, South Africa, 2008
- ♦ **Carbon Footprint Analyst Level 1**; Global Carbon Exchange Assessed, 2011
- ♦ **Negotiation of Financial Transactions**; United Nations Institute for Training and Research, 2011
- ♦ **Food Security: Can Trade and Investment Improve it?** United Nations Institute for Training and Research, 2011

E. Language ability

Perfectly fluent in English and Afrikaans (native speaker of both) and conversant in French.

F. Professional Experience

Name of firm	Terra Africa Environmental Consultants
Designation	Owner Principal Consultant
Period of work	December 2008 to Date

G. Prior Tenures

Integrated Development Expertise (Pty) Ltd; **Junior Land Use Consultant** [July 2006 to October 2008]

Omnia Fertilizer (Pty) Ltd; **Horticulturist and Extension Specialist** [January 2005 to June 2006]

H. Professional Affiliations

- ♦ South African Council for Natural Scientific Professions [SACNASP]
- ♦ Soil Science Society of South Africa [SSSA]
- ♦ Soil Science Society of America
- ♦ South African Soil Surveyors' Organisation [SASSO]
- ♦ International Society for Sustainability Professionals [ISSP]

Summary of a selected number of projects completed successfully:

[Comprehensive project dossier available on request]

- ♦ *Sekoko Railway Alignment and Siding Soil, Land Use and Capability Study* in close proximity to the Medupi Power Station in the Lephalale area, Limpopo Province.
- ♦ *ItalThai Rail and Port Projects, Mozambique* – The study included a thorough assessment of the current land use practices in the proposed development areas including subsistence crop production and fishing as well as livestock farming and forestry activities. All the land uses were mapped and intrinsically linked to the different soil

types and associated land capabilities. This study was used to develop Livelihood Restoration Planning from.

- ♦ *Bomi Hills Railway Alignment Project, Liberia*: soil, land use and agricultural scientist for field survey and reporting of soil potential, current land use activities and existing soil pollution levels, as well as associated infrastructure upgrades of the port, road and railway.
- ♦ *Kingston Vale Waste Facility, Mpumalanga Province, South Africa*: Soil and vegetation monitoring to determine the risk of manganese pollution resulting from activities at the waste facility.
- ♦ *Keaton Mining's Vanggatfontein Colliery, Mpumalanga*: Assessment of soil contamination levels in the mining area, stockpiles as well as surrounding areas as part of a long-term monitoring strategy and rehabilitation plan.
- ♦ *Richards Bay Minerals, KwaZulu-Natal*: Contaminated land assessment of community vegetable gardens outside Richards Bay as a result of spillages from pipelines of Rio Tinto's Richards Bay Minerals Mine.
- ♦ *Buffelsfontein Gold Mine, Northwest Province, South Africa*: Soil and land contamination risk assessment for as part of a mine closure application. Propose soil restoration strategies.
- ♦ *Glenover Phosphate Mining Project near Steenbokpan in the Lephalale area* – Soil, Land Use and Land Capability Study as part of the environmental authorisation process.
- ♦ *Waterberg Coal 3 and 4 Soil, Land Use and Land Capability Study* on 23 000 ha of land around Steenbokpan in the Lephalale area.
- ♦ *Lesotho Highlands Development Agency, development of Phase II (Polihali Dam and associated infrastructure)*: External review and editing of the initial Soil, Land Use and Land Capability Assessment as requested by ERM Southern Africa.
- ♦ *Tina Falls Hydropower Project, Eastern Cape, South Africa*: Soil, land use and land capability assessment as part of the ESIA for the construction of a hydropower plant at the Tina Falls.

- ♦ *Graveyard relocation as part of Exxaro Coal's Belfast Resettlement Action Plan: Soil assessment to determine pedohydrological properties of the relocation area in order to minimise soil pollution caused by graveyards.*
- ♦ *Rhino Oil Resources: Strategic high-level soil, land use and land capability assessment of five proposed regions to be explored for shale gas resources in the KwaZulu-Natal, Eastern Cape, North-West and Free State provinces of South Africa.*
- ♦ *Eskom Kimberley Strengthening Phase 4 Project, Northern Cape & Free State, South Africa: soil, agricultural potential and land capability assessment.*
- *Mocuba Solar Project, Mozambique – The study included a land use assessment together with that of the soil and land capabilities of the study area. All current land uses were documented and mapped and the land productivity was determined. This study advocated the resettlement and livelihood restoration planning.*
- ♦ *Botswana (Limpopo-Lipadi Game Reserve). Soil research study on 36 000 ha on the banks of the Limpopo River. This soil study forms part of an environmental management plan for the Limpopo-Lipadi Game Reserve situated here as well as the basis for the Environmental Impact Assessment for the development of lodges and Land Use Management in this area.*
- ♦ *TFM Mining Operations [proposed] Integrated Development Zone, Katanga, DRC [part of mining concession between Tenke and Fungurume]: soil and agricultural impact assessment study.*
- ♦ *Closure Strategy Development for Techmina Mining Company – Lucapa, Angola. Conducted an analysis of the natural resources (soil, water) to determine the existing environmental conditions on an opencast diamond mine in Angola. The mine currently experience severe problems with kimberlite sediment flowing into the river. A plan is currently being developed to change the mining area into a sustainable bamboo farming operation.*
- *Closure of sand mining operations, Zeerust District. Successfully conducted the closure application of the Roos Family Sand Mine in the Zeerust District. Land Use*

Management Plans for rehabilitated soil were developed. The mine has closed now and the financial provision has been paid out to the applicant.

- ♦ *ESIA for [proposed] Musonoi Mine, Kolwezi area, Katanga, DRC: soil, land use and land capability assessment.*
- ♦ *Bauba A Hlabirwa Moeijelik Platinum mine [proposed] project, Mpumalanga, South Africa: soil, land use and land capability assessment and impact on agricultural potential of soil.*
- ♦ *Commissiekraal Coal Mine [proposed] project, KwaZulu-Natal, South Africa: sustainable soil management plans, assessment of natural resource and agricultural potential and study of the possible impacts of the proposed project on current land use. Soil conservation strategies included in soil management plan.*
- ♦ *Cronimet Chrome Mine [proposed] project, Limpopo Province, South Africa: soil, land use and land capability of project area and assessment of the impacts of the proposed project.*
- ♦ *Moonlight Iron Ore Land Use Assessment, South Africa – Conducted a comprehensive land use assessment that included interviews with land users in the direct and indirect project zones of influence. The study considered all other anticipated social and environmental impacts such as water, air quality and noise and this was incorporated into a sensitivity analysis of all land users to the proposed project.*
- ♦ *Project Fairway Land Use Assessment, South Africa – The study included an analysis of all land users that will directly and indirectly be influenced by the project. It analysed the components of their land uses and how this components will be affected by the proposed project. Part of the study was to develop mitigation measures to reduce the impact on the land users.*
- ♦ *Bekkersdal Urban Renewal Project – Farmer Support Programme, Independent consultation on the farmer support programme that forms part of Bekkersdal Renewal Project. This entailed the production of short and long term business plans based on soil and water research conducted. Part of responsibilities were the evaluation of current irrigation systems and calculation of potential water needs, etc. as well as determining quantities and prices of all project items to facilitate the formalisation of tender documents.*

- ♦ *Area-based agricultural business plans for municipalities in Dr. Kenneth Kaunda Municipal District.* Evaluation of the agricultural and environmental status of the total district as well as for each municipality within the district. This included the critical evaluation of current agricultural projects in the area. The writing of sustainable, executable agricultural business plans for different agricultural enterprises to form part of the land reform plans of each Municipality within the district.
- ♦ *Batsamaya Mmogo, Hartswater.* Conducted a soil and water assessment for the farm and compiled management and farming plans for boergoats grazing on *Sericea lespedeza* with pecan nuts and lucerne under irrigation.
- ♦ *Anglo Platinum Twickenham Mine – Irrigated Cotton Project.* Project management of an irrigated cotton production project for Twickenham Platinum Mine. This project will ensure that the community benefit from the excess water that is available from the mine activities.
- ♦ *Grasvally Chrome (Pty) Ltd Sylvania Platinum [proposed] Project, Limpopo Province, South Africa:* Soil, land use and agricultural potential assessment.
- ♦ *Jeanette Gold mine project [reviving of historical mine], Free State, South Africa:* Soil, land use and agricultural potential assessment.
- ♦ *Kangra Coal Project, Mpumalanga, South Africa:* Soil conservation strategies proposed to mitigate the impact of the project on the soil and agricultural potential.
- ♦ *Richards Bay Integrated Development Zone Project, South Africa* [future development includes an additional 1500 ha of land into industrial areas on the fringes of Richards Bay]: natural resource and agricultural potential assessment, including soil, water and vegetation.
- ♦ *Exxaro Belfast Coal Mine [proposed] infrastructure development projects* [linear: road and railway upgrade | site-specific coal loading facilities]: soil, land capability and agricultural potential assessment.
- ♦ *Marikana In-Pit Rehabilitation Project of Aquarius Platinum, South Africa:* soil, land capability and land use assessment.

- ♦ *Eskom Bighorn Substation proposed upgrades, South Africa: soil, land capability and agricultural potential assessment.*
- ♦ *Exxaro Leeuwpan Coal Mining Right Area, South Africa: consolidation of all existing soil and agricultural potential data. Conducted new surveys and identified and updated gaps in historic data sets.*
- ♦ *Banro Namoya Mining Operation, DRC: soil, land use and agricultural scientist for field survey and reporting of soil potential, current land use activities and existing soil pollution levels, including proposed project extension areas and progressive soil and land use rehabilitation plan.*
- ♦ *Kumba Iron Ore's Sishen Mine, Northern Cape, South Africa: soil, land use and agricultural scientist | Western Waste Rock Dumps [proposed] Project: soil, land use and agricultural potential assessment, including recommendations regarding stripping/stockpiling and alternative uses for the large calcrete resources available.*
- ♦ *Vetlaagte Solar Development Project, De Aar, South Africa: soil, land use and agricultural scientist. Soil, land use and agricultural potential assessment for proposed new 1500 ha solar development project, including soil management plan.*

CURRICULUM VITAE

Jenna Lavin

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Address: 7 Carey Street, Woodstock, cape Town

EDUCATION:

Tertiary

- 2014 M.Phil in Conservation of the Built Environment (University of Cape Town)
- Not completed as of 2017
- 2011 Continued Professional Development Course in Urban Conservation
Management (University of Cape Town) Part I and Part II
- 2010 M.Sc. with Distinction in Archaeology (University of Cape Town)
Title: *Palaeoecology of the KBS member of the Koobi Fora Formation: Implications for
Pleistocene Hominin Behaviour.*
- 2007 B.Sc. Honours in Archaeology (University of Cape Town)
Title: *The Lost Tribes of the Peninsula: An Investigation into the historical distribution of
Chacma baboons (*Papio ursinus*) at the Cape Peninsula, South Africa.*
Koobi Fora Field School, Rutgers University (U.S.A.)/ National Museums of Kenya
- 2006 B.Sc. Archaeology (University of Cape Town)
B.Sc. Environmental and Geographic Science (University of Cape Town)

Secondary

- 1999-2003 Rustenburg High School for Girls
Firsts in English, Afrikaans, Mathematics HG, Biology HG, History HG, Entrepreneurship.

EMPLOYMENT HISTORY:

PROFESSIONAL DEVELOPMENT

Environmental and Heritage Management:

- **Director: Heritage for CTS heritage and member of OpenHeritage NPC.**

July 2016 to present

I am a member of the senior management of the company. I am responsible for project management and quality control on all of our heritage-related projects. I provide specialist heritage expertise when required and assist with the drafting of management plans, impact assessments and other specialist reports. I liaise with clients, authorities and other specialists to ensure the highest quality product from CTS Heritage. I manage the budgets and financial compliance for all our projects and for the business in general. In addition, I manage a specialist team of two archaeologists. We have recently been involved in developing the online map for the National Resistance and Liberation Heritage Route with DAC.

Through OpenHeritage, I have been intimately involved with the development, and successful implementation of, of a digital heritage objects management system for the National Museum in Kenya as well as Tristan da Cunha.

- **Assistant Director for Policy, Research and Planning at Heritage Western Cape (HWC).**

August 2014 to June 2016

As a member of the management structure of HWC, I was responsible for the drafting of new heritage related policy, the grading and declaration of Provincial Heritage Sites, the development of Conservation Management Plans, facilitating the development of inventories of heritage resources through local authorities as well as managing the development of the Western Cape's Heritage Information Management System (HIMS). I was also responsible for managing the project to nominate the Modern Human Origins proposed World Heritage Site.

I performed the role of Acting Deputy Director for HWC from April to December 2015, including financial management responsibilities, problem solving and the training of new staff.

- **Heritage Officer for Palaeontology and for the Mpumalanga Province at the South African Heritage Resources Agency (SAHRA).**

January 2013 to June 2014

Responsibilities include managing palaeontological permit applications in terms of Section 35 of the NHRA and development applications in terms of Section 38 of the NHRA. Projects included the development of a National Palaeotechnic Report identifying significant palaeontological deposits throughout SA, as well as developing professional relationships between SAHRA and the Palaeontological Society of South Africa (PSSA) and the Geological Society of South Africa (GSSA). During this time, I was part of the team that developed the digitised National Palaeontological Sensitivity Map, the first of its kind in the world.

- **Heritage Officer for Archaeology, Palaeontology and Meteorites at Heritage Western Cape (HWC).**

September 2010 to December 2012

HWC is a Public Entity that forms part of the Heritage Resource Management Component of the Provincial Governments' Department of Cultural Affairs and Sport (DCAS). Projects included the declaration of Pinnacle Point and the West Coast Fossil Park as Provincial Heritage Sites (PHSs), the management of the development of the Baboon Point PHS Conservation Management Plan as well as an educational outreach program as part of the DCAS MOD Centre Project.

- **Heritage Officer for the Archaeology, Palaeontology and Meteorites Unit of the South African Heritage Resources Agency (SAHRA) as part of a three month contract.**

January 2010 to March 2010

- **Environmental Control Officer, Amathemba Environmental Management Consulting**

Part time: 2007 to 2009

Field Work Experience:

- 2008-2009 Field Assistant, Dr. D. Braun, Elandsfontein Excavation Locality, University of Cape Town (UCT)
Field Assistant, Dr. D. Braun, Koobi Fora Research Project (Kenya), Rutgers University, New Jersey
- 2006 Field Assistant, Damiana Ravasi (PhD), Zoology Department, University of Cape Town.
- 2005 Research Assistant, Dr. Becky Ackerman, Archaeology Department, University of Cape Town
- 2004 Field Assistant, Prestwich Place Excavation Locality, Archaeology Contracts Office, UCT

Teaching Positions:

- 2017 Guest Lecturer, South African Heritage Legislation, George Washington University Heritage Management Field School
- 2016 Guest Lecturer, South African Heritage Legislation, Archaeology Honours Course, University of Cape Town
- 2015 Guest Lecturer, South African Heritage Legislation, Archaeology Honours Course, University of Cape Town
- 2014 Guest Lecturer, South African Heritage Legislation, Archaeology Honours Course, University of Cape Town
- 2013 Guest Lecturer, South African Heritage Legislation, Archaeology Honours Course, University of Cape Town
- 2010 Teaching Assistant, Langebaanweg Field School, Arizona State University
- 2009 Demonstrator, Archaeology in Practice, University of Cape Town (AGE3013H)
Demonstrator, Introduction to Geography, Earth and Environmental Science, University of Cape Town (GEO1009F)
Teaching Assistant, Koobi Fora Field School (Kenya), Rutgers University, New Jersey
Lecturer, Introduction to Geography, Earth and Environmental Science: Supplementary Course, University of Cape Town (EGS1004S)
- 2008 Demonstrator, Elandsfontein Honours Field School, University of Cape Town (AGE4000W)
Demonstrator, Introduction to Geography, Earth and Environmental Science, University of Cape Town (ERT1000F)
Demonstrator, Elandsfontein Honours Field School, University of Cape Town (AGE4000W)
Teaching Assistant, Koobi Fora Field School (Kenya), Rutgers University, New Jersey

Conferences and Papers

- 2017 ASAPA, Pretoria, RSA: *“Using Heritage Data to Guide Responsible Development: Tools to ensure high quality recording of heritage sites”*
ICAHM, Bagomoyo, Tanzania: *“OpenHeritage: Development and implementation of national heritage management systems - Lessons from South Africa, Namibia and Kenya”*
- 2016 ICAHM, Salalah, Oman: *“Straight to the (Baboon) Point: A look at the Conservation of Archaeological Landscapes in South Africa using Baboon Point as a Case Study”*
- 2015 Leakey Foundation, Sonoma County, San Francisco, USA: *““Straight to the (Baboon) Point: A look at the Conservation of Archaeological Landscapes in South Africa using Baboon Point as a Case Study”*
- 2012 PSSA, Johannesburg, RSA: *“SAHRIS Palaeosensitivity Map - Methodology and Implementation”*

Other

In 2013 I was asked to join the panel of judges for the Ministerial awards for Heritage in the Western Cape. From 2013 to July 2014, I was a member of the Heritage Western Cape Archaeology, Palaeontology and Meteorites Committee and I currently sit on the Heritage Western Cape Inventories, Gradings and Interpretations Committee.

In November 2013, I was awarded a bursary from the Department of Arts and Culture to complete a Masters in Philosophy in Conservation of the Built Environment through the UCT Faculty of Engineering and the Built Environment in 2014 and 2015. I was in the process of finalising this degree in 2017, however the arrival of my son has temporarily halted my progress.

I am a paid up member of the Association for Southern African Professional Archaeologists (ASAPA), the Association of Professional Heritage Practitioners (APHP) and I have been a member of the Executive Council of APHP since 2014.

In June 2017, I was selected as Chair of APHP. I am a member of the Palaeontological Society of South Africa (PSSA) and ICOMOS South Africa, for which I am Vice-President of the Board. I am also a member of the International Committee for Archaeological Heritage Management (ICAHM), a committee of UNESCO.

I am an active participant in a not-for-profit company called OpenHeritage which is dedicated to opening access to heritage resources through digital innovation. To this end, we have been involved in a number of projects including Wikipedea Training with Africa Centre, the development and implementation of a Collections Management System for the National Museums of Kenya and the development of a digital Inventory of the Vernacular Architecture of the Eastern Cape.

Referees

Mary Leslie

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082 491 5067

Laura Robinson

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Andrew Hall

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(Currently based in Oman)

Wendy Black

wblack@iziko.org.za

021 481 3883

PROJECT	PROJECT DESCRIPTION	DURATION
SKA Scoping Project	Provision of Heritage Specialist Assessment Services for SKA Scoping Phase	09/2015 - 09/2016
National Liberation & Khoisan Heritage Routes	Development of online mapping interface to promote national liberation and Khoisan heritage routes	02/2017 - present
Western Cape Coastal Access Strategy	Heritage statements describing changing utilisation of Western Cape coast through time	01/2016 - 02/2017
Robben Island PV Facility	Heritage survey, Heritage Impact Assessment, monitoring, mapping, report writing	01/2016 - 02/2017
Stawelklip Rock Art Conservation Management Plan	Site documentation, stakeholder consultation, CMP compilation, development of signage	10/2015 - 01/2016
Phillipskop Rock Art Conservation Management Plan	Site documentation, stakeholder consultation, CMP compilation, development of signage	04/2016 - 08/2016
Cape Winelands Heritage Inventory	Data processing, heritage management and mapping services	08/2016 - 09/2017

CTS Heritage Impact Assessments

HIA Title	Date Completed
HIA: Brakke Kuyl Sand Mine	05/12/2016
HIA: Gouritz Abalone Farm	28/10/2016
HIA: Malmesbury Granite Quarry	28/11/2016
HIA: Expansion of Jacobsbaai Abalone Farm	26/08/2016
HIA: Mutsho Power Project near Makhado	02/02/2017
HIA: Vanrhynsdorp Prospecting	06/03/2017
HIA: Spitskop Power Lines	02/03/2007
Desktop HIA Namakwa Prospecting	21/06/2017
HIA: San Miguel Citrus	26/04/2017
HIA : Ash River Hydro	In process
HIA: 22kv Powerlines Eastern Cape	22/08/2017
HIA: Langa Telecommunications Mast	18/08/2017
HIA: Ouwerv HF Radar Wave Monitoring Antennae	In process



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CURRICULUM VITAE



NICHOLAS GEORGE WILTSHIRE

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ID number: 7902225066083

EDUCATION:

- M.Sc., Archeology - University of Cape Town (2011)
- B.Sc. (Honours), Archeology - University of Cape Town (2005)
- B.Sc., Archeology and Environmental & Geographical Sciences - University of Cape Town (2004)
- A+ and MCSE - New Horizons, Bloemfontein (1999)
- Matric (Distinction) - St Andrew's School, Bloemfontein (1997)

EMPLOYMENT HISTORY:

December 2013 - present : Cedar Tower Services (Pty) Ltd, Cape Town, South Africa

Position : Owner/Director

April 2015 – present : OpenHeritage, Cape Town, South Africa

Position : Founder

Responsibilities :



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- Director of OpenHeritage, a non-profit organisation tasked with rolling out free open source heritage management systems to developing nations

December 2013 - present : Mothers2Mothers - AgeWell Global LLC, (pilot) through Cedar Tower Services Cape Town, South Africa

March 2015 - present : IT Services Consultant to m2m

Responsibilities :

- Currently providing ongoing project support

December 2013 – December 2014 : AgeWell Global LLC Developer

Responsibilities :

- Drupal development of handheld recording system on smartphones and tablets for health data in the older persons sector

November 2011 – November 2013 : South African Heritage Resources

Agency (SAHRA) Cape Town, South Africa

Position : Project Manager & Developer: SAHRIS (The South African Heritage Resource Information System)

Responsibilities :

Design and implement South Africa's first national heritage management system. In summary this involves:

- Planning and selection of a suitable platform to develop SAHRIS
- Planning, selection, installation and setup of dedicated servers using Ubuntu Server OS
- Development of SAHRIS on the Drupal Platform
- Setup of a Geoserver to interface with Drupal
- Live Disaster Recovery Setup
- Installation and setup of mass storage devices (NAS Servers) across multiple data centres
- Setup of replication and backup
- Regular planning and assessment meetings with key stakeholders to outline future system improvements
- Training users, especially of SAHRA and the nine Provincial Heritage Resources Authorities,



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and museums

- Creation of training videos and help documentation
- Implementation of the website theme designed by an outside graphic design company
- Data Migration of Sites, Objects, Media Content, Profiles, Reports
- Designing, planning and overseeing SAHRA's Digitisation
- Promotion of SAHRIS and production of peer reviewed articles

November 2008 - June 2010 : Heritage Western Cape Position : Senior Heritage Officer:
Archaeology Responsibilities :

- Identify, protect and manage archaeological resources in the Western Cape
- Assess development applications, write policies, nominate sites for Provincial Heritage Site (grade 2) status
- Maintain and update GIS reporting database with SAHRA

Project Involvement: November 2008 – March 2009

- Designed, wrote and implemented database tracking system for applications and issuing of coded Records of Decision
- Implemented and maintained GIS system for archaeological sites, reports and provincial heritage sites
- Worked closely with SAHRA in bringing the GIS Reporting Project to its first release in November 2009
- Ran a workshop in July 2009 to allow all the practitioners in the province to see the demonstration of the database and the updated requirements of the system in terms of the minimum standards
- Involved monthly reporting and quarterly reporting to management as per government policies

December 2007 – September 2011 (and intermittently prior) : Archaeological Consultant,
Independent

IT Contractor & Research Assistant Project Involvement :

African Climate & Development Initiative (ACDI), UCT, Cape Town, 2011

- Design of database system for the ACDI audit of projects, departments, people and research units engaged in climate change related research at UCT
- Pooled various GIS data repositories to initiate discussion around the impacts of CC on the



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Cederberg Municipality and prepared the GIS groundwork for a demonstration presentation in May 2011

- Collaborated with the MAPA project to setup the structure for an online solution to hosting the UCT projects audit
- Was also involved in the Southern African Regional Universities Association (SARUA) meeting in March 2011 and presented a Google Earth mapping layer linked to the audit database to provide a possible solution to their collaboration framework. Involved in setup and maintenance of WordPress website for the ACDI and UCT steering committee for the Enterprise Content Management (ECM) project

eastern Cederberg Rock Art Group (eCRAG), Western Cape, 2008

- Archaeological surveys for rock art and other archaeological sites from Wupperthal in the north to Op die Berg in the south of the Cederberg
- Contributed to three Conservation Management Plans handed to each owner for completed properties
- Current number of sites documented: 464
- Created and managed the photographic, digital report and GIS archive

Just Fruit and Veg, Killarney Gardens (July 2008-January 2009, November 2010-February 2011) Spar Ordering System:

- Designed and implemented database system to run the Packing Sheets, Production Totals and automatic exports of the Spar Group's orders to JFV Pastel Accounting system
- The system also imports weekly price updates from their unique pricing system

JFV Pricing System:

- Overhauled an Excel based pricing system which calculated suggested selling prices based on margins and cost inputs
- The new system tracks costs and selling price changes per product and is able to export the new prices across multiple price structures directly in Pastel
- Various choices can be manipulated to derive a new selling price and the database has been coded to prevent accidental errors which cropped up in the Excel based system that relied on macros

HIMAP – Historical Mapping Project, Cape Town, June 2009 – December 2009



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- Digitally mapped the historical layers of the 18th century of Cape Town from various historical maps in a project with Dr Antonia Malan
- Combined archival data with the shape files so that various interpretative layers could easily be generated

ACO Prestwich Place, Cape Town, April 2008 – August 2008

- Design and implementation of database system for the Prestwich Place burials
- This includes a GIS mapping of the data and a 3d modelling tool for point cloud data using VRML

Iziko Museums, Cape Town, December 2007 – March 2008

- Design of interactive multimedia exhibit displayed in the rock art collection comprising a selection from the Bleek & Lloyd Archive and the Warmhoek rock art trail in Clanwilliam

Masters (& partly Honours) Project at UCT, Cape Town, 2005, 2008-2011

- Design of database system for the SARU archaeological records
- This involved the digitisation of 10 000 slides and the organisation of all the digital photographs taken since 2001
- All the site records were physically scanned and typed up, mapped on GIS and linked relationally to my system
- Archive generated over 250 gigabytes of data

Genex, Cape Town, July 2007 – October 2007

- Project managed the migration of the accounting systems from Accpac for Windows to Fincon Accounting
- Ran the Accounting department on a short term basis as caretaker before taking on another project at Ellies in Maputo, Mozambique

Millennium Foods, Killarney Gardens, June 2007 Ordering System:

- Designed and implemented networked database system to capture EDI orders from Checkers and to automate standing orders from their other customers
- The system also exports these orders directly into Pastel Accounting and runs their packing and production reports



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Ellies Electronics, Cape Town, February - May 2006

- Project managed the migration of the accounting systems from Accpac (DOS version) to Fincon Accounting
- Setup and installed Windows NT server and email server

Kardex and Tracking Systems, Bloemfontein, November 1999 - February 2000

- Designed two database systems to track stock in a multi-company environment, produce dispatch labels and to automate tripsheets

January - July 2007 : Archaeological Contractor Responsibilities :

- Contract work undertaken for the Archaeological Contracts Office at UCT & Cape Archaeological Survey.
- Cape Nature Archaeological Survey Project from July 2007 – December 2007.

January 2006 – November 2007 : Fincon Position : IT Consultant Responsibilities :

- Training, installation and Accountancy services
- Main clients: Ellies Cape Town, Ellies Maputo, IT Outlook, Genex, Toshiba Central

1998 – 2002 :

- Spent two full years as well as two short term periods working and travelling in Europe and the UK

REFERENCES:

Professor John Parkington, Supervisor at UCT 079 872 4807

Raymond Berkmann, Ellies Electronics, Cape Town 021 532 2225

Dr Janette Deacon, APM Committee, HWC, Cape Town 082 491 5067

Mamakomorenk Nkhasi EO, Corporate Affairs, SAHRA 021 462 4502

Dr Mitchell Besser, Mothers2Mothers, Cape Town 021 466 9160

CURRICULUM VITAE OF SARAH WATSON

(Comprehensive)

Profession:	Environmental Consultant
Specialisation:	Environmental Impact Assessment, Environmental Management, Environmental Compliance and Due Diligence, and Compilation of Reports for projects in the infrastructure sector.
Work Experience:	Seven (7) years in the environmental field

VOCATIONAL EXPERIENCE

Sarah has a Bachelor of Social Science (B.Soc.Sci.) Honours Degree in Geography and Environmental Management from the University of KwaZulu-Natal (UKZN), and seven (7) years of experience as an Environmental Consultant in the field of Environmental Impact Assessment and Environmental Management. She has experience working on a range of projects, specifically within the telecommunications; residential; industrial; bulk infrastructure; rural development; and energy sectors.

SKILLS BASE AND CORE COMPETENCIES

- Environmental Assessment
- Environmental Management
- Environmental Compliance Monitoring
- Geographic Information System (GIS)
- Stakeholder Engagement

EDUCATION AND PROFESSIONAL STATUS

Degrees:

- B.Soc.Sci. Honours in Geography and Environmental Management, University of KwaZulu-Natal, 2007.
- B.Soc.Sci. Geography and Environmental Management, University of KwaZulu-Natal, 2006.

Professional Society Affiliations:

- Member of the South African affiliate of the International Association for Impact Assessment (IAIASa).
- Member of the Society of South African Geographers (SSAG).

EMPLOYMENT

- **October 2016 – Current:** Environmental Consultant at Savannah Environmental (Pty) Ltd.
Tasks included: Executing Environmental Impact Assessment (EIA) processes, GIS Work, Environmental Screening, Environmental Due Diligence, and Environmental Management and auditing.
- **December 2013 – December 2014:** Environmental Consultant at Golder Associates Africa (Pty) Ltd.
Tasks included: Executing Environmental Impact Assessment (EIA) and Basic Assessment (BA) processes, GIS work, Environmental Due Diligence, and Environmental Management and auditing.
- **January 2011 – November 2013:** Environmental Consultant at Council for Scientific and Industrial Research (CSIR).
Tasks included: Executing Environmental Impact Assessment (EIA) and Basic Assessment (BA) processes, GIS work, Public Participation, Environmental Screening, and Environmental Management.
- **April 2008 – December 2010:** Environmental Consultant at K2M Environmental (Pty) Ltd.
Tasks included: Assisting Senior Environmental Consultant with executing Basic Assessment (BA) processes, GIS work, Public Participation, Preliminary Environmental Screening, and Environmental Management.

PROJECT EXPERIENCE

Environmental Compliance, Auditing and ECO

Infrastructure Development Projects (bridges, pipelines, roads, etc.)

Project Name & Location	Client Name	Role
Construction of a New Distribution Centre and Warehouse on Erf 5539 and 5540 (Chloorkop X74), Lords View Industrial Park, Gauteng Province	Olivier & Partners on behalf of ARB Holdings (Pty) Ltd	Environmental Control Officer (ECO)
Gap Analysis of Venture Diversified Product (VDP) Rosslyn Facility's EMS, in Rosslyn, Gauteng Province	Venture Diversified Product (VDP) Rosslyn	Auditor
Construction of the Hlabisa Bulk Water Supply Scheme, in Hlabisa, KwaZulu-Natal Province	Mhlathuze Water	Environmental Control Officer (ECO)

Renewable Power Generation Projects: Solar Energy Facilities

Project Name & Location	Client Name	Role
2017 Annual Environmental Compliance Evaluation with the Equator Principles and Environmental and Social Action Plan for the Mullilo Solar PV De Aar Photovoltaic Solar Energy Facility, Northern Cape Province	Mullilo Renewable Energy Solar PV De Aar (Pty) Ltd	Auditor

2017 Annual Environmental Compliance Evaluation with the Equator Principles and Environmental and Social Action Plan for the Mulilo Solar PV Prieska Photovoltaic Solar Energy Facility, Northern Cape Province	Mulilo Renewable Energy Solar PV Prieska (Pty) Ltd	Auditor
Biannual Environmental Compliance Audit of the Konkoonsies 10MW Photovoltaic (PV) Solar Energy Facility near Pofadder, Northern Cape Province	Limarco 77(Pty) Ltd	Auditor
Biannual Environmental Compliance Audit of the Aries 10MW Photovoltaic (PV) Solar Energy Facility near Kenhardt, Northern Cape Province	Sevenstones 159 (Pty) Ltd	Auditor
Final Environmental Compliance Audit for the Xina Solar One Thermal Plant, near Pofadder, Northern Cape Province	Xina Solar One RF (Pty) Ltd	Auditor

Mining Sector Projects

Project Name & Location	Client Name	Role
Independent External Compliance audit of Palesa Mine's Integrated Water Use License (IWUL), near KwaMhlanga, Mpumalanga Province	HCI Coal	Auditor
Independent External Compliance audit of Palesa Mine's Waste Management License (WML), near KwaMhlanga, Mpumalanga Province	HCI Coal	Auditor
Independent External Compliance audit of Mbali Mine's Integrated Water Use License (IWUL), near Ogies, Mpumalanga Province	HCI Coal	Auditor

Environmental Impact Assessments and Environmental Management Programmes

Infrastructure Development Projects (bridges, pipelines, roads, etc.)

Project Name & Location	Client Name	Role
EIA for the proposed Vopak-Reatile Terminal Richards Bay Bulk Liquid Storage and Handling Facility, Richards Bay, KwaZulu-Natal Province.	Vopak South Africa Developments (Pty) Ltd.	Environmental Consultant (Scoping Phase)
EIA for a proposed Common User Marine Servitude and Pipelines	Coega Development Corporation (CDC)	Environmental Consultant (Scoping Phase)

Renewable Power Generation Projects: Solar Energy Facilities

Project Name & Location	Client Name	Role
Combined EIA for the Betelgeuse PV Solar Projects 1, 2, 3 and 4; between Murraysburg and Victoria West, Western Cape Province.	Aurora Power Solutions (Pty) Ltd	Environmental, GIS and Public Participation Consultant (Scoping Phase)
EIA for the 75 MW Glen Thorne PV Solar Facility, near Bloemfontein, Free State Province.	SolaireDirect	Author of the draft Scoping Report (SR)

Renewable Power Generation Projects: Wind Energy Facilities

Project Name & Location	Client Name	Role
Combined EIA for the Ishwati Emoyeni Wind Energy Facility and associated Eskom Grid Connection Infrastructure, near Murraysburg, Western Cape Province.	Windlab Developments South Africa (Pty) Ltd (WDSA)	Environmental, GIS, and Public Participation Consultant (Scoping Phase)
EIA for the proposed Universal Wind Energy Project in the Coega IDZ, Eastern Cape Province.	Universal Wind	Environmental Consultant

Conventional Power Generation Projects (Coal)

Project Name & Location	Client Name	Role
H2 Energy Power Station and associated infrastructure near KwaMhlanga, Mpumalanga Province.	H2 Clean Energy (Pty) Ltd	Environmental and GIS Consultant
Mutsho Power Project and Associated Infrastructure on a site near Makhado (Louis Trichardt), Limpopo Province.	Mutsho Power (Pty) Ltd	Environmental and GIS Consultant

Mining Sector Projects

Project Name & Location	Client Name	Role
ESIA for a proposed Iron Ore Mine near Melmoth, Northern KwaZulu-Natal.	Jindal Mining (Pty) Ltd	Environmental Consultant (Scoping Phase)
ESIA for a proposed Iron Ore Processing Site near Melmoth, KwaZulu-Natal Province.	Jindal Processing (Pty) Ltd	Environmental Consultant (Scoping Phase)

Housing and Urban Projects

Project Name & Location	Client Name	Role
EMP for the Makhasaneni Rural Subsidised Housing Development, in Mthonjaneni (Ward 5), KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Mthonjaneni Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant
EMP for the Ntembisweni Rural Subsidised Housing Development in the Ntembisweni Traditional Authority Area near Greytown, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Umvoti Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant
EMP for the Sikhonyane Rural Subsidised Housing Development, in the Sikhonyane Traditional Authority area, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Mandeni Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant
EMP for the Umzumbe Cluster A Rural Subsidised Housing Development, near Umzumbe, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Umzumbe Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant

EMP for the Applebosch Rural Subsidised Housing Development near Ndwedwe, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Msunduzi Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant
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Basic Assessments

Infrastructure Development Projects (bridges, pipelines, roads, etc.)

Project Name & Location	Client Name	Role
BA for site clearing and site preparation activities on Lots 4 and 5 of Portion 3 of Erf 11478 in the South Dunes Precinct of the Port of Richards Bay, KwaZulu-Natal Province.	Vopak South Africa Developments (Pty) Ltd.	Environmental Consultant
BA for the proposed Hlabisa Bulk Water Supply Scheme, Hlabisa, KwaZulu-Natal Province.	Mhlathuze Water	Environmental, GIS and Public Participation Consultant
BA for the proposed construction of a Bulk Sewage Rising Main, City of uMhlathuze, KwaZulu-Natal Province.	City of uMhlathuze Local Municipality.	Environmental, GIS and Public Participation Consultant
BA for the proposed Rita Light Industrial Park Development, near Camperdown, KwaZulu-Natal Province.	Daisy Wheel Investments (Pty) Ltd	Environmental, GIS and Public Participation Consultant
BA for the development of a Light Industrial Park on Portion 10 of the Farm Balgowrie, Camperdown, KwaZulu-Natal.	Daisy Wheel Investments (Pty) Ltd	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Richards Bay, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station at Felixton, near Empangeni, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Ballito, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Howick, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Richmond, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station in Durban, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Kokstad, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant

BA for the construction of a MTN Telecommunication Mast and associated Base Station near Richmond, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Mkondeni, Pietermaritzburg, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station in Pietermaritzburg, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station in Bulwer, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Camperdown, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Underberg, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station in Cowies Hill, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station in Phoenix, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Kokstad, Eastern Cape Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Vulindlela, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MTN Telecommunication Mast and associated Base Station near Mpendle, KwaZulu-Natal Province.	BSO International on behalf of MTN	Environmental, GIS and Public Participation Consultant
BA for the construction of a MultiChoice Water Tower Transmission Installations and associated Base Stations in Isipingo, KwaZulu-Natal Province	BSO International on behalf of MultiChoice	Environmental, GIS and Public Participation Consultant
BA for the construction of a MultiChoice Water Tower Transmission Installations and associated Base Stations in Umlazi, KwaZulu-Natal Province	BSO International on behalf of MultiChoice	Environmental, GIS and Public Participation Consultant
BA for the construction of a MultiChoice Rooftop Transmission Installation and associated Base Station in Reservoir Hills, KwaZulu-Natal Province.	BSO International on behalf of MultiChoice	Environmental, GIS and Public Participation Consultant
BA for the construction of a MultiChoice Rooftop Transmission Installation and associated Base Station in Wentworth, KwaZulu-Natal Province.	BSO International on behalf of MultiChoice	Environmental, GIS and Public Participation Consultant
BA for the construction of a MultiChoice Rooftop Transmission Installation and associated Base Station in Queensburgh, KwaZulu-Natal Province.	BSO International on behalf of MultiChoice	Environmental, GIS and Public Participation Consultant

BA for the construction of a MultiChoice Rooftop Transmission Installation and associated Base Station at the University of KwaZulu-Natal (UKZN), KwaZulu-Natal Province.	BSO International on behalf of MultiChoice	Environmental, GIS and Public Participation Consultant
BA for the construction of a MultiChoice Rooftop Transmission Installation and associated Base Station in Amanzimtoti, KwaZulu-Natal Province.	BSO International on behalf of MultiChoice	Environmental, GIS and Public Participation Consultant
BA for the construction of an iBurst Telecommunication Mast and associated Base Station in Kloof, KwaZulu-Natal Province	BSO International on behalf of iBurst	Environmental, GIS and Public Participation Consultant

Renewable Power Generation Projects: Solar Energy Facilities

Project Name & Location	Client Name	Role
BA for the PV Power Project on Kennilworth Farm, Northern Cape.	Biotherm Energy	Author of the draft Basic Assessment Report (BAR)

Housing and Urban Projects

Project Name & Location	Client Name	Role
BA for the proposed Loch-Sloy Rural Subsidised Housing Development, near Estcourt, KwaZulu-Natal Province.	Imbabazane Local Municipality	Environmental, GIS and Public Participation Consultant
BA for the proposed "Living in THE PARK" Residential Development, near Albert Falls, KwaZulu-Natal Province.	J.H.K Developers	Environmental, GIS and Public Participation Consultant
BA for the proposed Residential Development on the Remainder of Erf 215, Prince's Grant, KwaZulu-Natal Province.	Princes Grant	Environmental, GIS and Public Participation Consultant
BA for the proposed Greenmeadow Lane Retirement Village, KwaZulu-Natal Province.	Rodney Blake Jolly on behalf of Georgies Avenue Investments (Pty) Ltd	Environmental, GIS and Public Participation Consultant

Environmental Permitting & WUL Applications

Housing and Urban Projects

Project Name & Location	Client Name	Role
Application for Planning Consent for the proposed Kwamavundla Rural Subsidised Housing Development in the Kwamavundla Traditional Authority area, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Hibiscus Coast Local Municipality, and the KwaZulu-Natal Department of Housing.	GIS Consultant and assistant Environmental Consultant
Application for Planning Consent for the proposed Ngolokodo Rural Subsidised Housing Development, near Nquthu KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Ubuhlebezwe Local Municipality, and the KwaZulu-Natal Department of Housing.	GIS Consultant and assistant Environmental Consultant

Application for Planning Consent for the proposed Mdletshe Traditional Authority Rural Subsidised Housing Development, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Hlabisa Local Municipality, and the KwaZulu-Natal Department of Housing.	GIS Consultant and assistant Environmental Consultant
Application for Planning Consent for the proposed Makhasaneni Rural Subsidised Housing Development, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Mthonjaneni Local Municipality, and the KwaZulu-Natal Department of Housing.	GIS Consultant and assistant Environmental Consultant
Application for Planning Consent for the proposed Njomelwane Rural Subsidised Housing Development, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Ntambanana Local Municipality, and the KwaZulu-Natal Department of Housing.	GIS Consultant and assistant Environmental Consultant
Application for Planning Consent for the proposed Umzumbe Cluster A Rural Subsidised Housing Development, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Umzumbe Local Municipality, and the KwaZulu-Natal Department of Housing.	GIS Consultant and assistant Environmental Consultant
Application for Planning Consent for the proposed Ntanzi Rural Subsidised Housing Development, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Nongoma Local Municipality, and the KwaZulu-Natal Department of Housing.	GIS Consultant and assistant Environmental Consultant
Application for Planning Consent for the proposed Abakwahlabisa Rural Subsidised Housing Development, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Hlabisa Local Municipality, and the KwaZulu-Natal Department of Housing.	GIS Consultant and assistant Environmental Consultant

Screening Studies

Infrastructure Development Projects (bridges, pipelines, roads, etc.)

Project Name & Location	Client Name	Role
ESS for the proposed Development of Pier 1 Phase 2 Container Terminal in the Port of Durban, KwaZulu-Natal Province.	Transnet Capital Projects (TCP).	Environmental Consultant and co-author

Renewable Power Generation Projects: Solar Energy Facilities

Project Name & Location	Client Name	Role
Environmental Site Screening Assessment For Solar PV Energy Facilities proposed at Salima, Lilongwe and Golomoti, Central Region, Malawi.	H1 Holdings (Pty) Ltd	Environmental and GIS Consultant

Renewable Power Generation Projects: Wind Energy Facilities

Project Name & Location	Client Name	Role
<i>Environmental Screening Study (ESS) of Sites being Investigated for Potential Wind Energy Projects, in the Northern Cape, Eastern Cape, Western Cape; and KwaZulu-Natal Provinces.</i>	<i>Confidential</i>	<i>Environmental and GIS Consultant</i>

Conventional Power Generation Projects (Coal)

Project Name & Location	Client Name	Role
<i>Environmental Site Screening Assessment for a new coal-fired power station near Makhado (Louis Trichardt), Limpopo Province.</i>	<i>Confidential</i>	<i>Environmental and GIS Consultant</i>

Housing and Urban Projects

Project Name & Location	Client Name	Role
<i>Preliminary Environmental Assessment for a Rural Subsidised Housing Development, in the Ntembisweni Traditional Authority area near Greytown, KwaZulu-Natal Province.</i>	<i>Stedone Developments and Bigen Africa on behalf of the Umvoti Local Municipality, and the KwaZulu-Natal Department of Housing.</i>	<i>Environmental and GIS Consultant</i>
<i>Preliminary Environmental Assessment for a Rural Subsidised Housing Development, in the Mkhwanazi Traditional Authority area, KwaZulu-Natal Province.</i>	<i>Stedone Developments and Bigen Africa on behalf of the City of uMhlathuze Local Municipality, and the KwaZulu-Natal Department of Housing.</i>	<i>Environmental and GIS Consultant</i>
<i>Preliminary Environmental Assessment for a Rural Subsidised Housing Development, at Makhasaneni in Ward 5 of the Mthonjaneni Local Municipality, KwaZulu-Natal Province.</i>	<i>Stedone Developments and Bigen Africa on behalf of the Mthonjaneni Local Municipality, and the KwaZulu-Natal Department of Housing.</i>	<i>Environmental and GIS Consultant</i>
<i>Preliminary Environmental Assessment for a Rural Subsidised Housing Development, at the Sikhonyane Traditional Authority area, KwaZulu-Natal Province.</i>	<i>Stedone Developments and Bigen Africa on behalf of the Mandeni Local Municipality, and the KwaZulu-Natal Department of Housing.</i>	<i>Environmental and GIS Consultant</i>
<i>Preliminary Environmental Assessment for a Rural Subsidised Housing Development, near Ndwedwe, KwaZulu-Natal Province.</i>	<i>Stedone Developments and Bigen Africa on behalf of the Msunduzi Local Municipality, and the KwaZulu-Natal Department of Housing.</i>	<i>Environmental and GIS Consultant</i>
<i>Preliminary Environmental Assessment for a Rural Subsidised Housing Development, at Nxamalala Traditional Authority area, KwaZulu-Natal Province.</i>	<i>Stedone Developments and Bigen Africa on behalf of the Impendle Local Municipality, and the KwaZulu-Natal Department of Housing.</i>	<i>Environmental and GIS Consultant</i>

Preliminary Environmental Assessment for a Rural Subsidised Housing Development, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant
Preliminary Environmental Assessment for a Rural Subsidised Housing Development, at KwaDolo Traditional Authority area, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Msinga Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant
Preliminary Environmental Assessment for a Rural Subsidised Housing Development, at Ndlangubo Traditional Authority area, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the uMlalazi Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant
Preliminary Environmental Assessment for a Rural Subsidised Housing Development, at the Embo Traditional Authority area, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Maphumulo Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant
Preliminary Environmental Assessment for a Rural Subsidised Housing Development, at Mthandeni Traditional Authority area, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Maphumulo Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant
Preliminary Environmental Assessment for the Highflats Slum Clearance Housing Project near Ixopo, KwaZulu-Natal Province.	Stedone Developments and Bigen Africa on behalf of the Ubuhlebezwe Local Municipality, and the KwaZulu-Natal Department of Housing.	Environmental and GIS Consultant

Public Sector Projects

Project Name & Location	Client Name	Role
Umzinyathi District Municipality's Strategic Environmental Assessment (July 2009).	Umzinyathi District Municipality	Assistant GIS Consultant

Due Diligence Reporting

Renewable Power Generation Projects: Wind Energy Facilities

Project Name & Location	Client Name	Role
Environmental and Social Due Diligence Report for the Roggeveld Wind Farm in the Northern and Western Cape Province.	Building Energy South Africa (Pty) Ltd	Environmental Consultant

Training**Infrastructure Development Projects (bridges, pipelines, roads, etc.)**

Project Name & Location	Client Name	Role
Capacity Building Workshop on Amended Environmental Impact Assessment Regulations and Associated Legislation, Durban, KwaZulu-Natal	Transnet	Assistant Environmental Consultant and Researcher

Social Impact Assessments**Renewable Power Generation Projects: Hydro Energy Facilities**

Project Name & Location	Client Name	Role
BA for the Kruisvallei Hydroelectric Power Generation Scheme, Free State Province	Zevobuzz (Pty) Ltd	Social Consultant

Public Sector Projects

Project Name & Location	Client Name	Role
Lake Management Plan for Lake Mzingazi, Richards Bay, KwaZulu-Natal Province	City of uMhlatuze	Social Consultant (Review and update of Social Assessment)



Dr. Neville Bews & Associates – Johannesburg, South Africa

EDUCATION

- *B.A. (Soc), University of South Africa, 1980*
- *B.A. (Soc) (Hons), University of South Africa, 1984*
- *The Henley Post Graduate Certificate in Management, Henley Management College, United Kingdom*
- *M.A. (Cum Laude), Rand Afrikaans University, 1999*
- *D. Litt. et Phil., Rand Afrikaans University, 2000*

Dr Neville Bews is a senior social scientist and human resource professional with 36 years' experience. He consults in the fields of Social Impact Assessments and research, and human resource management. He has worked on a number of large infrastructure, mining and water resource projects. He at times lectures at both the Universities of Pretoria and Johannesburg and is a Senior Fellow in the Centre for Sociological Research, Department of Sociology, University of Johannesburg.

EMPLOYMENT HISTORY

Dr Neville Bews & Associates, Johannesburg, South Africa

Social Impact Assessment consultant and part-time lecturer, 2001 – date.

Leads social impact assessments, provides strategic social management advice to clients, acts as reviewer and mentor to young social scientists.

S A Eagle Company Ltd, Johannesburg, South Africa

Employee Relations Manager, 1992 - 2001

Human Resource management and administration; industrial relations; human resource related research projects; designing and leading implementation of research strategies; disciplinary and grievance hearings; negotiating with unions; corporate social responsibility.

Status Management Services

Human Resources Consultant, 1986 – 1992

Management training; employee assistance programmes; industrial relations; recruitment; disciplinary and grievance hearings; negotiating with unions; job evaluation.

City of Johannesburg

Professional Officer - Human Resources, 1977 - 1986

Industrial relations; disciplinary and grievance hearings; negotiating with unions; recruitment, selection and placement; management training; job evaluation.

EXPERIENCE – EXAMPLES

Water resources and regional planning Social Impact Assessments

Department of Water Affairs and Forestry

South Africa

Social impact assessment for the Mokolo and Crocodile River (West) Water Augmentation Project for increased and assurance of water supply. Research socio-economic circumstances, data analysis, assessment, authored report.

The Aveng (Africa) Group Limited (Grinaker LTA)

South Africa

Assisting the construction company with the social management of the Mokolo and Crocodile River (West) Water Augmentation Project. Consult and mediate between contractors and affected parties advise on strategies to reduce tensions between contractors and the public.

Department of Water Affairs and Forestry

South Africa

Ncwabeni Off-Channel Storage Dam for security of water supply in Umzumbe, KwaZulu-Natal. Research socio-economic circumstances, data analysis, assessment, authored report.

Sedibeng District Municipality

South Africa

Social impact assessment for the Environmental Management Plan for the Sedibeng District, on behalf of Felehetsa Environmental (Pty) Ltd. Research socio-economic circumstances, data analysis, assessment, authored report.

Felehetsa Environmental (Pty) Ltd

South Africa

Social Impact Assessment for Waterfall Wedge housing and business development situated in Midrand Gauteng. Research socio-economic circumstances, data analysis, assessment, authored report.

NEMAI Consulting Environmental & Social Consultants

South Africa

Ncwabeni: Off-Channel Storage Dam, KwaZulu-Natal. Research socio-economic circumstances, data analysis, assessment, authored report.

Department of Water and Sanitation

South Africa

Mzimvubu Water Project Eastern Cape. Research socio-economic circumstances, data analysis, assessment, authored report.

Social Assessments for mining clients

Vale

Mozambique

Socio-economic impact assessment of proposed Moatize power plant, Tete. Research socio-economic circumstances, data analysis, assessment, authored report.

Exxaro Resources Limited **South Africa**
Social impact assessment for the social and labour plan for Leeuwpan Coal Mine, Delmas. Research socio-economic circumstances, data analysis, assessment, authored report.

Exxaro Resources Limited **South Africa**
Social impact assessment for the social and labour plan for Glen Douglas Dolomite Mine, Henley-on-Klip. Research socio-economic circumstances, data analysis, assessment, authored report.

Exxaro Resources Limited **South Africa**
Social impact assessment for the social and labour plan for Grootegeluk Open Cast Coal Mine, Lephallale. Research socio-economic circumstances, data analysis, assessment, authored report.

Exxaro Resources Limited **South Africa**
Social and labour plan for the Paardekraal Project, Belfast. Research socio-economic circumstances, data analysis, assessment, authored report.

Exxaro Resources Limited **South Africa**
Social impact assessment for the Paardekraal Belfast Project Belfast. Research socio-economic circumstances, data analysis, assessment, authored report.

Kumba Resources Ltd **South Africa**
Social Impact Assessments for the Sishen Iron Ore Mine in Kathu Northern Cape. Research socio-economic circumstances, data analysis, assessment, authored report.

Kumba Resources Ltd **South Africa**
Social Impact Assessments for the Sishen South Project in Postmasburg, Northern Cape. Research socio-economic circumstances, data analysis, assessment, authored report.

Kumba Resources Ltd **South Africa**
Social Impact Assessments for the Dingleton resettlement project at Sishen Iron Ore Mine Kathu, Northern Cape. Research socio-economic circumstances, data analysis, assessment, authored report.

Gold Fields **South Africa**
Social Impact Assessment for the Gold Fields West Wits Project. Research socio-economic circumstances, data analysis, assessment, authored report.

Anglo Coal **South Africa**
Review of social impact assessment for the proposed Waterberg Gas 37-spot coalbed methane (CBM) bulk yield test project.

Sekoko Mining

South Africa

Sekoko Wayland Iron Ore, Molemole Local Municipalities in Limpopo Province. Research socio-economic circumstances, data analysis, assessment, authored report.

Memor Mining (Pty) Ltd

South Africa

Langpan Chrome Mine, Thabazimbi, Limpopo. Research socio-economic circumstances, data analysis, assessment, authored report.

Prescali Environmental Consultants (Pty) Ltd

South Africa

Vlakpoort Open Cast Mine – Thabazimbi, Limpopo. Research socio-economic circumstances, data analysis, assessment, authored report.

Afrimat Ltd

South Africa

1. Marble Hall Lime Burning Project: Social Impact Assessment – Limpopo.
2. Glen Douglas Lime Burning Project: Social Impact Assessment - Henley-on Klip, Midvaal

Social assessments for regional and linear projects

Gautrans

South Africa

Social impact for the Gautrain Rapid Rail Link, Pretoria to Johannesburg and Kempton Park. Managed a team of 10 field workers, research socio-economic circumstances, data analysis, assessment, and co-authored report.

South African National Road Agency Limited

South Africa

Social Impact of tolling the Gauteng Freeway Improvement Project. Research socio-economic circumstances, data analysis, assessment, authored report.

South African National Road Agency Limited

South Africa

Social Impact of the N2 Wild Coast Toll Highway. Managed a team of three specialists. Research socio-economic circumstances, data analysis, assessment, co-authored report.

South African National Road Agency Limited

South Africa

SIA for the N3 Keversfontein to Warden (De Beers Pass Section). Research socio-economic circumstances, data analysis, assessment, authored report.

Transnet

South Africa

Social impact assessment for the Transnet New Multi-Product Pipeline Project (555 km) (Commercial Farmers). Research socio-economic circumstances, data analysis, assessment, authored report.

Eskom Holdings Limited

South Africa

Social Impact Assessment for the Ubertas 88/11kV Substation in Sandton, Johannesburg. Research socio-economic circumstances, data analysis, assessment, authored report.

Eskom Holdings Limited

South Africa

Nuclear 1 Power Plant. Assisted with the social impact assessment consulting to Arcus GIBB Engineering & Science. Peer review and adjusted the report and assisted at the public participation feedback meetings.

Eskom Holdings Limited, Transmission Division **South Africa**

Social impact assessment for Eskom Holdings Limited, Transmission Division's Neptune-Poseidon 400kV Power Line in the Eastern Cape. Research socio-economic circumstances, data analysis, assessment, authored report.

Eskom Holdings Limited, Transmission Division **South Africa**

Social Impact assessment for Eskom Holdings Limited, Transmission Division, Forskor-Mernsky 275kV±130km Powerline and Associated Substation Works in Limpopo Province. Research socio-economic circumstances, data analysis, assessment, authored report.

MGTD Environmental **South Africa**

Social impact assessment for a 150MW Photovoltaic Power Plant and Associated Infrastructure in Mpumalanga. Research socio-economic circumstances, data analysis, assessment, authored report.

MGTD Environmental **South Africa**

10MWp Photovoltaic Power Plant & Associated Infrastructure, North West Province. Research socio-economic circumstances, data analysis, assessment, authored report.

eThekwini Municipality **South Africa**

Social impact assessment for the proposed infilling of the Model Yacht Pond at Blue Lagoon, Stiebel Place, Durban. Research socio-economic circumstances, data analysis, assessment, authored report.

MGTD Environmental **South Africa**

ABC Prieska Solar Project; Proposed 75 MWp Photovoltaic Power Plant and its associated infrastructure on a portion of the remaining extent of ERF 1 Prieska, Northern Cape. Research socio-economic circumstances, data analysis, assessment, authored report.

MGTD Environmental **South Africa**

ABC Prieska Solar Project; Proposed 75 MWp Photovoltaic Power Plant and its associated infrastructure on a portion of the remaining extent of ERF 1 Prieska, Northern Cape;

Assessments for social projects and social research

Australia – Africa 2006 Sport Development Program **South Africa**

To establish and assess the impact of the Active Community Clubs Initiative on the communities of NU2 (in the township of Mdantsane)* and Tshabo (a rural village). Lead researcher social, data collection and analysis, assessment.

United Nations Office on Drugs and Crime **South Africa**

Evaluation of a Centre for Violence Against Women in Upington. Research socio-economic circumstances, data analysis, assessment, co-authored report.

University of Johannesburg

South Africa

Research into research outputs of academics working in the various departments of the university.
Research socio-economic circumstances, data analysis, assessment, authored report.

Human Resource and management training

Various national companies

South Africa

Developed and run various management courses such as, recruitment selection & placement; industrial relations / disciplinary hearings; team building workshops; multiculturalism workshop.

1986-2007

University of South Africa, Department of Industrial Psychology

South Africa

Developed the performance development study guide for industrial psychology 3.

2000

Authored Chapters in HR books

South Africa

In Slabbert J.A. de Villiers, A.S. & Parker A (eds.). Managing employment relations in South Africa.

Teamwork within the world-class organisation.

2005

In Muchinsky, P. M. Kriek, H. J. & Schreuder, A. M. G. Personnel Psychology 3rd Edition

Chapter 9 – Human resource planning.

Chapter 10 – The changing nature of work.

2005.

In Rossouw, G. J. and van Vuuren, L. Business Ethics - Made in Africa 4th Edition.

Chapter 11 – Building Trust with Ethics.

South African Management Development Institute (SAMDI) Democratic Republic of the Congo

Developed a course on Strategic Human Resource Planning for SAMDI and the Democratic Republic of the Congo as well as trainer's manuals for this course.

2006.

Competition Tribunal

South Africa

Developed a Performance Management System and Policy for the Competition Tribunal South Africa.

2006

PUBLICATIONS

Bews, N. & Martins, N. 2002. An evaluation of the facilitators of trustworthiness. SA Journal of Industrial Psychology. 28(4), 14-19.

Bews, N. Martins, N. & von der Ohe, H. 2002. Editorial. SA Journal of Industrial Psychology. 28(4), 1.

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Bews, N. 2001. Maintaining trust during organisational change. Management Today, (17) 2 36-39.

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Rossouw, D & Bews, N. 2001. Trust is on the decline in the workplace, yet it's vital for modern organisational success. People Dynamics. (18) 6 28-30.

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Bews N. 2005. Teamwork within the world-class organisation. In Slabbert J.A. de Villiers, A.S. & Parker A (eds.). *Managing employment relations in South Africa*. Durban : Butterworths.

Bews, N. F. 2005. Human resource planning. In Muchinsky, P. M. Kriek, H. J. & Schreuder, A. M. G. 2005. *Personnel Psychology 3rd Edition*. Cape Town; Oxford University Press.

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Bews, N. F. 2005. Chapter 9 & 13. In Muchinsky, P. M. Kriek, H. J. & Schreuder, A. M. G. 2005. *Instructor's Manual. Personnel Psychology 3rd Edition*. Cape Town; Oxford University Press.

Bews, N. F., Schreuder, A. M. G. & Vosloo, S. E. 2000. *Performance Development. Study guide for Industrial Psychology 3*. Pretoria: University of South Africa.

Uys, T. and Bews, N. 2003. "Not in my Backyard": Challenges in the Social Impact Assessment of the Gautrain. Department of Sociology Seminar, RAU. 23 May 2003.

Bews, N. 2002. The value of trust in the new economy. Industrial Relations Association of South Africa (Irasa). Morning seminar 21 August 2002.

Bews, N. 2002. The issue of trust considered. Knowledge Recourses seminar on Absenteeism. The Gordon Institute of Business. 27 August 2002.

Bews, N. & Uys, T. 2001. The impact of organisational trust on perceptions of trustworthiness. South African Sociological Association Conference. Pretoria.

Bews, N. 2001. Business Trust, Ethics & Leadership:- Made in Africa. International Management Today/Productivity Development Conference. Hosted by Productivity Development (Pty) Ltd & Management Today. Best Knowledge in Leadership Practice Conference 23-24 July 2001.

Bews, N. 2001. Charting new directions in leading organisational culture and climate change. Workplace Transformation and Organisational Renewal. Hosted by The Renaissance Network. November 2001.

Bews, N. 2000. Towards a model for trust. South African Sociological Association Conference. Saldanha.

Bews, N. 2003. 'Social Impact Assessments, theory and practice juxtaposed – Experience from a South African rapid rail project.' New Directions in Impact Assessment for Development: Methods and Practice Conference. University of Manchester, Manchester, England.

MEMBERSHIP OF PROFESSIONAL BODIES

Member of South African Affiliate of the International Association for Impact Assessment (IAIASa).

Membership Number: 2399

Registered on database for scientific peer review of iSimangaliso GEF project outputs

Lourens du Plessis

Professional GISc Practitioner



Personal Information:

- Date of Birth: 1969-11-13
- Marital Status: Married
- Nationality: South African
- Contact no: 082 922 9019
- Email: lourens@logis.co.za

Years of Industry Experience

- 28 years'

Countries of Experience

- South Africa; Lesotho; Swaziland; Mozambique; Botswana; Zimbabwe; Namibia; Angola; Guinea; Ghana; Uganda

Qualifications and Memberships

- BA (University of Pretoria) Geography and Anthropology (Majors), 1993
- Professional Geo-Information Sciences (GISc) Practitioner registered with the South African Geomatics Council (SAGC). Membership no. PGP0147
- Member: GISSA

Key Skills and Competencies

- Arc/Info and ArcGIS
- Arcview
- QGIS
- Postflight Terra 3D
- PlanetGIS
- Vistapro
- Various GIS support applications
- Microsoft (Word/Excel/Access)

Professional Overview

Lourens provides professional Geographical Information Systems (GIS) services to a wide range of clients that require the processing, analysis and presentation of geospatial data. His overarching function is the application of GIS in environmental management and planning, impact assessments and spatial modelling, but his services often extend to a much broader range of business sectors. These include the application of GIS in:

- Agriculture
- Bulk service providers and utilities
- The renewable energy sector
- Electricity generation and distribution
- Mining and exploration
- Urban and rural development planning
- Conservation and tourism
- Strategic integrated planning
- Environmental education and social awareness
- Engineering, transport and infrastructure development

Lourens has a multi-disciplinary approach to projects and therefore specialises in creating synergy between planning professionals and project specialists (regardless of the type of project) in order to provide uniform, quality spatial data products, solutions and services.

Experience and expertise

- Data sourcing and acquisition
- Data capture and processing
- Data evaluation, conversion and transfer
- Geodatabase development/implementation/maintenance
- System design and development
- Spatial analysis/modelling (visibility, slope, aspect, etc.)
- Digital terrain modeling
- Terrain evaluation and site screening
- Image processing and analysis
- Impact assessment and impact management
- Environmental management
- GIS-based decision support systems development
- Project management and report writing
- Map production, display, queries and reporting
- Environmental sciences expertise
- Process development
- Visual impact assessment
- GPS fieldwork and aerial surveys
- Drone data processing

Project Experience

General projects *(A brief description of some prominent and relevant projects)*

GIS mapping and database for Black Eagle habitats and flight patterns in the Karoo National Park

Environmental planning and development control schemes for the Drakensberg Babangibone, Cathkin Peak and Garden Castle development nodes

Goukou River (Stilbaai) Environmental Structure Plan

Conservation and open space proposals for the Umhlanga Forest

Grootvlei mine water pumping operation (Blesbokspruit sub-catchment)

GIS services for the Saldanha steel plant

ENPAT Provincial (1:250,000 scale GIS decision support systems) based on an inventory of environmental and socio-economic geographic data

- ENPAT Northern Province (Limpopo Province)
- ENPAT Mpumalanga
- ENPAT North-West

ENPAT Metropolitan (1:50,000 scale GIS decision support systems) containing environmental and socio-economic geographic data that were evaluated for conservation opportunities, development constraints and agricultural constraints

- ENPAT Gauteng
- ENPAT Cape Town
- ENPAT Durban Functional Region (DFR)
- ENPAT Bloemfontein/Botshabello
- ENPAT Port Elizabeth

ENPAT National (1:1,000,000 scale GIS decision support system) and ENPAT publication

Environmental Management Frameworks (EMF). Frameworks of spatially represented information connected to environmental management parameters designed to aid in the pro-active identification of potential conflict between development proposals and critical and/or sensitive environments

- EMF Northern Province (Limpopo Province)
- EMF Mpumalanga
- EMF North-West

Spatial Development Initiatives (SDI). The fast tracking of the EMF concept for priority SDI's

- Lubombo Corridor SDI
- Coega Industrial Development Zone (IDZ)
- Wild Coast SDI
- West Coast Investment Initiative

Sigma colliery: North-West strip operation

Development masterplan for the Tswaing Crater Museum

Conservation plan for the Rietvlei Nature Reserve

GIS services for the planning and management of the Chobe National Park (Botswana)

GIS services for an environmental overview of South Africa

Demarcation/delineation of regions in South Africa

Orange-Vaal (ORVAAL) transfer scheme - Caledon cascades scheme

ENPAT Provincial (1:250,000 scale GIS decision support systems) based on an inventory of environmental and socio-economic geographic data

- ENPAT Eastern Cape
- ENPAT Free State
- ENPAT Kwa-Zulu Natal

Environmental Management Frameworks (EMF). Frameworks of spatially represented information connected to environmental management parameters designed to aid in the pro-active identification of potential conflict between development proposals and critical and/or sensitive environments

- EMF Eastern Cape
- EMF Free State
- EMF Kwa-Zulu Natal

Hennops River EMF (environmental inventory and management proposals in Centurion)

The Important Bird Areas (IBA) of South Africa map and database

Centurion Metropolitan Substructure Environmental Management Framework (EMF)

Alexandra renewal project EMF

Carbon Sinks and Sequestration - Eastern Cape Wild Coast. Information maps for the "Carbon Sinks - A Rehabilitation Option for South Africa's Natural Environment" report

Prince Edward and Marion Islands. Maps for the World Heritage Site (WHS) bid document

Theewaterskloof and Genadendal - Integrated spatial data management system

Gauteng Communication Network Strategy (GAUCONS). Environmental zones for the control of the construction of telecommunication structures

Gauteng Industries Buffer Zones. The mapping of industrial and mining activities, the creation of buffer control zones and the development of a GIS-based decision support system for the Gauteng Province

Limpopo National Park (LNP) Mozambique. Base maps for fieldwork and planning

Schmidtsdrift Environmental Management Program Report (EMPR)

Loch Vaal Environmental Management Framework (EMF)

Rustenburg - Strategic Environmental Assessment (SEA). The creation of environmental control zones, a GIS-based decision support system and information poster

Faerie Glen Nature Reserve Strategic Environmental Assessment (SEA)

Willow Quarries - Environmental Impact Assessment (EIA). Modeling of mining expansion plan and the potential impact on Golden Mole habitats

Ekurhuleni Metropolitan Municipality (EMM) Environmental Management Framework (EMF)

Limpopo - State of the Environment Report (SoER)

Windhoek (Namibia) - Environmental Structure Plan (ESP)

Gauteng Supplementation and Implementation of EIA Regulations Project (EIA SIP)

Siyanda District Municipality Environmental Management Framework (EMF)

Olifants and Letaba River Catchments Environmental Management Framework (EMF)

Barberton Nature Reserve environmental sensitivity mapping and land use zoning plan

Regional Strategic Environmental Assessments (Regional Assessments)

Regional assessment for the Eskom Wind Energy Facility (Sere) in the Western Cape

Regional assessments for the Eskom Wind Integration Project (WIP)

- Area 1: West Coast (Saldanha to Garies)
- Area 2: Overberg Region
- Area 3: Beaufort West region
- Area 4: Eastern Cape (Tsitsikamma to Port Elizabeth)
- Area 5: Northern Cape (Hondeklipbaai to Port Nolloth)

Sandveld wind energy Regional Assessment

West Coast National Park (Saldanha area) Regional Assessment

Regional Assessment for the Theewaterskloof Municipal area

Brand-se-Baai (Exxaro) wind energy regional assessment

Overberg (BioTherm) wind energy regional assessments

- Area 1: Gordons Bay to Pearly Beach
- Area 2: Napier RA (Agulhas NP/Swellendal region)

Suurplaat/Sutherland (Investec Wind Energy Development) Regional Assessment

Waterberg (Limpopo) Concentrating Solar Power (CSP) Regional Assessment (Exxaro)

Western Cape Province Regional SEA for Wind Energy facility developments

ISS Global Mining Regional SEA for Power Station Developments in Mpumalanga Province

Northern Cape Province Regional SEA for Wind Energy facility developments

Etc. *(a comprehensive list of general projects can be provided upon request)*

Visual Impact Assessments (VIA), viewshed analyses and visual assessments

Some recent or current projects include:

- Coal strip mining in Zimbabwe viewshed analyses
- Viewshed analyses and sensitivity mapping for telecommunication masts in the northern provinces (Limpopo, Mpumalanga and North-West)
- Siemens 3rd license cellular communications infrastructure EIAs. Viewshed analyses and sensitivity mapping for over 4,000 telecommunication mast sites in all major metropolitan areas of South Africa.
- CSIR high mast viewshed analysis and sensitivity mapping
- Atlantis Open Cycle Gas Turbine power station VIA
- Kynoch Gypsum Tailings dam extension VIA
- N1 Western Bypass Shell service station VIA
- Coega regional hazardous waste processing facility VIA
- Robinson Deep landfill extension VIA
- Hazardous waste blending platform VIA
- Mercury-Ferrum-Garona transmission line integration VIA
- Matimba B (Medupi) coal-fired power station VIA
- Concentrating Solar Power (CSP) plant in Upington VIA
- Zeus to Mercury transmission line (comparative viewshed analyses)
- Mmamabula (Botswana) transmission line and power station viewshed analyses
- Petronet new multi-products pipeline VIA
- Wind energy facility (Sere) in the Western Cape province VIA
- Ankerlig power station conversion and transmission line VIA
- Gourikwa power station conversion and transmission line VIA
- Kyalami strengthening project VIA
- Steelpoort integration project VIA
- Medupi reservoir and telecommunication mast VIA
- VIA's for Basic Assessment Reports (wind monitoring masts)
 - Cookhouse, Hopefield, Amakhala, Caledon, Worcester, Tulbach, Overberg, Britannia Bay, Brand-se-Baai, Deep River, Happy Valley, River Bank, Uiekraal, Beaufort West, Laingsburg, Rhebokfontein, Suurplaat and West Coast
- Cookhouse wind energy facility VIA
- Hopefield wind energy facility VIA
- Mokopane Integration Project VIA
- Cradle of Humankind World Heritage Site (WHS) viewshed protection zone, visual character assessment and visual zonation plan
- Indwe wind energy facility VIA
- Amakhala wind energy facility VIA
- Boontjieskraal wind energy facility VIA
- Britannia Bay wind energy facility VIA
- Brand-se-Baai wind energy facility VIA
- Upington and Pofadder solar thermal facilities VIAs

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- Dorper wind energy facility VIA
 - Flagging Trees wind energy facility VIA
 - Rheboksfontein, Suurplaat and West Coast wind energy facilities VIAs
 - Riverbank wind energy facility VIA
 - Waterberg photovoltaic plant VIA
 - Eskom wind intergration projects VIAs
 - Welgedacht water care works VIA
 - Aberdeen wind energy facility
 - Aggeneis-Oranjemund power line intergration
 - Project Blue wind energy facility
 - Inca De Aar solar energy facility
 - Aced De Aar solar energy facility
 - Exxaro Lephale solar energy facility
 - Happy Valley wind energy facility
 - Hendrina power station ash dam extension
 - Hidden Valley wind energy facility
 - Kakamas photovoltaic plant
 - Karoo renewable energy facility
 - Ilanga (Karoskraal) solar thermal power plant
 - Keimoes photovoltaic plants (Sonnenberg, Ofir and Geelkop)
 - Kimberley photovoltaic solar plant
 - Kleinbegin photovoltaic plant
 - Kleinzee wind energy facility
 - Koingnaas wind energy facility
 - Oyster Bay wind energy facility
 - Ilanga Lethemba (Paardevelei) PV solar energy facility
 - Upington photovoltaic solar facility
 - Ramphela (Ritchie) PV solar energy facility
 - Ruukie (Mpumalanga) coal fired power station
 - Saldanha Steel wind energy facility
 - Spitskop wind energy facility
 - Tsitsikamma community wind energy facility
 - Uyekraal wind energy facility
 - Veldrift and Saldanha wind energy facilities
 - Vredendal photovoltaic solar energy facility
 - Wag'nBiekiespan solar energy facility
 - Walker Bay wind energy facility
 - Etc. *(a comprehensive list can be provided upon request)*

Professional History

4/2017: Professional GISc Practitioner (sole proprietor/self employed)

1/2016 – 3/2017: SMEC South Africa, Pretoria – Technical Specialist

11/1999 – 12/2015: MetroGIS (Pty) Ltd, Pretoria – Director

10/1997 – 10/1999: GISBS (GIS Business Solutions - Q Data Consulting) – Project Manager

4/1990 - 9/1997: GisLAB CC (GIS Laboratory - University of Pretoria) – Member / Project Manager

Courses & Conferences attended

1997 ESRI International User Conference – United States of America

Publications & Papers presented

Name: Gateway to Kruger Map and Guide

Authors: Andy Tinker Photography

Publisher: ATP Publishing

Date: 2010

Name: Kruger National Park Map and Photographic Guide

Authors: Andy Tinker Photography

Publisher: ATP Publishing

Date: 2007

Name: Lowveld and Kruger Guide

Authors: High Branching Team

Publisher: Jacana Media (Pty) Ltd

Date: 2004

Name: Heights to Homes to Oceans (H2O) Water Wise information poster

Authors: Rand Water

Publisher: Rand Water

Date: 2004

Name: Garden Route - Still Bay to Storms River (Discover the Magic)

Authors: Jacana

Publisher: Jacana Media (Pty) Ltd

Date: 2003

Name: KwaZulu-Natal - A celebration of biodiversity

Authors: Jacana

Publisher: Jacana Media (Pty) Ltd

Date: 2001

Name: Pilanesberg Official Map and Park Guide

Authors: North-West Parks & Tourism Board and Jacana

Publisher: Jacana Media (Pty) Ltd

Date: 2001

Name: ESRI Map Book (Volume 13)

Authors: Various

Publisher: Environmental Systems Research Institute (ESRI)

Date: 1998

Name: Environmental Potential Atlas for South Africa

Authors: W. van Riet, J. van Rensburg, P. Claassen, L. du Plessis and T. van Viegen

Publisher: J.L. van Schaik

Date: 1997

Award: Best South African Environmental Technical Paper
Awarded for: National Environmental Potential Atlas (ENPAT National)
Awarded by: Environmental Planning Professions Interdisciplinary Committee (EPPIC)
Date: 1995

Award: Map Gallery Most Analytical Competition - 3rd Place
Awarded for: Environmental Potential Atlas for South Africa
Awarded by: Environmental Systems Research Institute (ESRI)
Date: 1997 International ESRI User Conference

Award: Best Cartographic Map Gallery Competition - 3rd Place
Awarded for: Environmental Potential Atlas for South Africa (Publication)
Awarded by: Environmental Systems Research Institute (ESRI)
Date: 1998 International ESRI User Conference

Award: QDC Performance Award
Awarded for: ENPAT Development
Awarded by: Q Data Consulting
Date: 1998

Award: Best South African Environmental Technical Paper
Awarded for: Environmental Potential Atlas for South Africa (Publication)
Awarded by: Environmental Planning Professions Interdisciplinary Committee (EPPIC)
Date: 1998

Language Skills

Mother Tongue:	Afrikaans		
Languages	Speak	Read	Write
English	Good	Good	Good
Afrikaans	Good	Good	Good

AMORY LE ROUX-ARRIES, CIVIL ENGINEER

CAPE TOWN – TRANSPORT AND INFRASTRUCTURE

Ms. Amory Le Roux-Arries has approximately eight years of engineering experience in contract administration, business development (specifically in feasibility studies), tendering, compiling business proposals and overseeing business development in West Africa. She has gained experience in the private sectors and is familiar with contractual obligations and client requirements. She has gained practical experience on road construction and traffic engineering.



EDUCATION

- Current studies, MEng (Traffic and Transportation), University of Stellenbosch
- BEng (Civil), University of Stellenbosch, 2010

REGISTRATION/CERTIFICATIONS

- ECSA, Engineering Council of South Africa, Candidate Member No 201151245

AFFILIATIONS

- SAICE, South African Institution of Civil Engineers – Associate Member No 2008679

TRAINING

- 2014, Prokon Level 1, Prokon
- 2014, C201, Estimating and Valuations – CCS
- 2013, NEC Contract, Alusani
- 2013, Areva Nuclear Learning Tour, France
- 2013, AutoCAD, Autodesk
- 2012, Construction Estimating, Alusani
- 2012, Reinforced Concrete Design to SANS, SAICE
- 2012, Structural Steel Design Code to SANS, SAICE
- 2012, Finance for Engineers, Project and Technical Manager, Alusani
- 2012, MS Project
- 2012, RCC-M Training, Bureau Veritas
- 2011, Road to Registration for Candidate Engineers, Candidate Academy
- 2011, Killer Excel Dashboard Reports, Frontfoot
- 2011, Competition Law, Comprehensive: Compliance Online Course

NATIONALITY

South African

DATE OF BIRTH

19 February 1986

YEARS OF EXPERIENCE

7 Years

AMORY LE ROUX-ARRIES, CIVIL ENGINEER

CAPE TOWN – TRANSPORT AND INFRASTRUCTURE

COUNTRIES OF WORK EXPERIENCE

- South Africa

LANGUAGES

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Afrikaans	Excellent	Excellent	Excellent

PROFESSIONAL EXPERIENCE

2017-Current	Project: Client: Position: Description: Activities Performed: Project Value:	City of Cape Town Facilities Management Upgrades and refurbishments City of Cape Town Civil Engineer and Project Manager Upgrading and Refurbishments of various projects for the Facilities Department of the City of Cape Town Tender Evaluation, Project Management, Civil Design, Contract Administration, Site Supervision R 150 000 000.00
2016-2017	Project: Client: Position: Description: Activities Performed: Project Value:	R53 Road Upgrade SANRAL Assistant Engineer's Representative Upgrade of the R53 between Parys and Potchefstroom Tender Evaluation, Contract Administration, Site Supervision R 53 000 000.00
2015-2016	Project: Client: Position: Description: Activities Performed: Project Value:	The City Deep Kazerne Freight Hub Upgrade Programme SANRAL, JRA Assistant Engineer's Representative Widening of Rosherville Road and the Extension of Bonsmara Road to Heidelberg Road Tender Evaluation, Contract Administration, Site Supervision R 60 000 000.00
2015-2016	Project: Client: Position: Description: Activities Performed:	Traffic Impact Assessment Bombela Operating Company Traffic engineer Traffic Impact Assessment at Gautrain Hatfield Station Traffic Impact assessment at Gautrain Hatfield Station, traffic modelling, Network assessment, reports and presentations to BOC
2013-2014	Project: Client: Position: Description:	Aveng Africa Limited – Nuclear Division Kafue Development Civil Engineer- Business Development 89km road, school, clinic, two tolling booths

AMORY LE ROUX-ARRIES, CIVIL ENGINEER**CAPE TOWN – TRANSPORT AND INFRASTRUCTURE**

2012-2014	Project:	Aveng Africa Limited – Nuclear Division
	Position:	Civil Engineer
	Description:	Nuclear Constructability
	Activities Performed:	Overseeing business development in West Africa. Assisting in writing procedures. Doing business proposals. Estimation. Proposals of new businesses, tendering. Business cases for new business. Constructability analysis and estimations.
2011-2012	Project:	Aveng Grinaker-LTA
	Position:	Site Engineer
	Activities Performed:	Growth department and business intelligence: summaries of future projects and possible investment opportunities. Competitor analysis.
2008	Project:	Grinaker-LTA Nelson Mandela Bay Soccer Stadium
	Client:	Interbeton (Netherlands)
	Position:	Student Engineer – Vacation Training
	Activities Performed:	Verification of drawings. Liaison between technical manager and subcontractors. Inspection checks
2007	Project:	Grinaker-LTA (Port of Ngqura Project-Coega)
	Position:	Student Engineer – Vacation Training
	Description:	
	Activities Performed:	Assisting with bridge construction. Survey and levelling of abutments. Foundation Supervisor. Concrete quality inspections.
	Project Value:	R 150 000 000.00

WORK HISTORY

Dates	Company Name	Position
Aug 2014 to current	Knight Piésold Consulting, South Africa	Civil Engineer
Mar 2011 to Apr 2012	<i>Aveng Grinaker-LTA</i>	Site Engineer
Dec 2008 to Jan 2009	<i>Grinaker-LTA Nelson Mandela Bay Soccer Stadium</i>	Student Engineer – Vacation Training
Jun 2007 to Jul 2007	<i>Grinaker-LTA (Port of Ngqura Project-Coega)</i>	Student Engineer – Vacation Training

ANDREW CLEGHORN, SENIOR CIVIL ENGINEER

CAPE TOWN- TRANSPORT AND INFRASTRUCTURE

Andrew Cleghorn has 17 years of engineering experience. He started his career in the contracting industry as an ex-bursary student at LTA Civil Engineering, gaining valuable experience on the multi-billion rand Mozal Aluminium Smelter in Mozambique. In recent years, he concentrated on the design and maintenance of various roads and engineering infrastructure projects. He is currently the Manager of Roads and Civil Engineering Services Design division in Cape Town. Andrew graduated from the University of Stellenbosch in 2016 with a M.Eng specialising in Pavement Engineering.



EDUCATION

- B. Eng (Civil), University of Stellenbosch, South Africa, 1998
- M. Eng (Civil), University of Stellenbosch, South Africa, 2016

REGISTRATION/CERTIFICATIONS

- Engineering Council of South Africa (ECSA) Pr Eng 20030171, 2003

AFFILIATIONS

- South African Institution of Civil Engineers (SAICE)

TRAINING

- Various Short Courses, Masters in Engineering March 2016

NATIONALITY

- South African

DATE OF BIRTH

- 20 July 1976

YEARS OF EXPERIENCE

- 17 years

COUNTRIES OF WORK EXPERIENCE

South Africa, Mozambique, Malawi, Zambia, Namibia

LANGUAGES

	Speaking	Reading	Writing
English	Excellent	Average	Good
Afrikaans	Excellent	Average	Good

ANDREW CLEGHORN, SENIOR CIVIL ENGINEER

CAPE TOWN- TRANSPORT AND INFRASTRUCTURE

PROFESSIONAL EXPERIENCE

2017- Current	Project: Client: Contact: Position: Description: Activities Performed: Project Value:	N2 Wildcoast Highway, Section 20 from Miskaba River Bridge to the Mtentu River Bridge South African National Roads Agency Limited (SANRAL) Craig Mclachlan Project Leader, Lead Designer Design and Construction supervision of 18km of Greenfields portion of the N2 Project Leader and Design Specialist R 1 bn
2016-2017	Project: Client: Contact: Position: Description: Activities Performed: Project Value:	N2 Umtentweni South African National Roads Agency Limited (SANRAL) Hugh Brooks Pavement Engineer Road Rehabilitation and Improvements Pavement Engineering R 1 bn (Construction)
2011-2016	Project: Client: Contact: Position: Description: Activities Performed: Project Value:	N2 Upgrades Myddleton near Caledon South African National Roads Agency Limited (SANRAL) Renaldo Lorio Project Leader and Lead Designer Road Rehabilitation and Improvements Project Management and Lead Designer, Pavement Engineering R 40 000 000.00 (Construction)
2009-2016	Project: Client: Contact: Position: Description: Activities Performed: Project Value:	R61 Draairiver Rehabilitation South African National Roads Agency Limited (SANRAL) Steven Robertson Project Leader and Lead Designer Road Rehabilitation and Improvements Project Management and Lead Designer, Pavement Engineering R 100 000 000.00 (Estimate)
2011-2016	Project: Client: Contact: Position: Description: Activities Performed: Project Value:	Cape Town Northern Areas Road Rehabilitation City of Cape Town Mark Ernsten Project Leader and Lead Designer Road Rehabilitation and Improvements Project Management and Lead Designer, Pavement Engineering R 110 000 000.00 (Construction cost)
2011-2012	Project: Client:	Phillipi Plaza Shopping Complex Inteland Properties

ANDREW CLEGHORN, SENIOR CIVIL ENGINEER

CAPE TOWN- TRANSPORT AND INFRASTRUCTURE

Contact: Eugene Clark
Position: Project Leader and Lead Designer
Description: Parking and roads to new shopping complex
Project Value: R 12 000 000.00 (Construction)

2010-2012 **Project:** **N10 Upgrades and Rehabilitation near Hanover**
Client: South African National Roads Agency Limited (SANRAL)
Contact: Emile Du Preez
Position: Assistant Project Leader and Lead Designer
Description: Road Rehabilitation
Activities Performed: Assistant Project Management and Lead Designer, Pavement Engineering
Project Value: R 105 000 000.00 (Estimate)

2008-2011 **Project:** **Bredasdorp Main Road Rehabilitation**
Client: Cape Agulhus Municipality
Contact: John Daniels
Position: Project Leader and Lead Designer
Description: Road Rehabilitation and Improvements
Activities Performed: Project Management and Lead Designer, Pavement Engineering

2007-2018 **Project:** **Muizenberg Main Road Phase 1 2 3**
Client: City of Cape Town
Contact: Paul Booth, Mark Doubell
Position: Lead Designer
Description: Road Rehabilitation and Civil Engineering Services
Activities Performed: Lead Designer
Project Value: R 600 000 000.00 (Construction)

2007-2009 **Project:** **Greyton: Upgrade of Infrastructure**
Client: Theewaterskloof Municipality
Contact: Nigel Kayser
Position: Project Leader and Lead Designer
Description: Upgrades of various infrastructure
Activities Performed: Project Management and Lead Designer
Project Value: R 12 000 000.00

2001-2008 **Project:** **Robben Island: Upgrade of Infrastructure**
Client: National Department of Public Works (NDPW)
Contact: Daan Veldtman
Position: Project Leader and Lead Designer
Description: Upgrades of various infrastructure
Activities Performed: Project Management and Lead Designer
Project Value: Various totalling to R40 000 000.00 (Construction)

ANDREW CLEGHORN, SENIOR CIVIL ENGINEER

CAPE TOWN- TRANSPORT AND INFRASTRUCTURE

WORK HISTORY

Dates	Company Name	Position
2009-Date	Knight Piésold Consulting, South Africa	Senior Engineer/Director
2001-2009	Kayad Consulting Engineers	Senior Engineer/Director
2000	ASCH Consulting Engineers	Resident Engineer
1991 - 1997	Water and Gas Department, Johannesburg South Africa	Chief Engineer (Planning & Design)
1981 - 1991	City Engineer's Department, Johannesburg South Africa	Chief Engineer/Chief Design Engineer/Senior Engineer/Engineer

SONET GERBER, SENIOR CIVIL TECHNOLOGIST

CAPE TOWN-TRANSPORT AND INFRASTRUCTURE

Sonet Gerber has 15 years of engineering experience. After completing her in service training at Ninham Shand Consulting Engineers in Port Elizabeth, she started her career abroad working at the London Borough of Newham where she was employed at the Highways Department in 2003 and gaining valuable experience working on various Road Safety Schemes. In recent years, she concentrated on the design and maintenance of various roads and engineering infrastructure projects. She is currently a Civil Technologist in the Roads and Civil Engineering Services Design division in Cape Town.



EDUCATION

- 2008, BTech-Civil Construction Management
- 2005, National Diploma, Civil Engineering

REGISTRATION/CERTIFICATIONS

- Engineering Council of South Africa (ECSA), Professional Engineering Technologist 201470085

AFFILIATIONS

- South African Institute for Civil Engineers (SAICE)

NATIONALITY

South African

DATE OF BIRTH

21 December 1977

YEARS OF EXPERIENCE

14 Years

COUNTRIES OF WORK EXPERIENCE

South Africa, United Kingdom-England

LANGUAGES

	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Afrikaans	Excellent	Excellent	Excellent

SONET GERBER, SENIOR CIVIL TECHNOLOGIST

CAPE TOWN-TRANSPORT AND INFRASTRUCTURE

PROFESSIONAL EXPERIENCE

2017-2018	Project: Client: Contact: Position: Description: Activities Performed: Project Value:	N12-100-2017-2F Resurfacing of N12 from Riverton to Windsorton SANRAL Friedl van der Merwe-021 957 4600 Senior Civil Technologist Resurfacing of N12 Assistant Contracts Engineer, included Visual Assessments R 40 000 000.00 (Construction)
2017-2018	Project: Client: Contact: Position: Description: Activities Performed: Project Value:	N12-100-2017-1F Resurfacing of N12 from Kimberley to Riverton SANRAL Petronella Theron-021 957 4600 Senior Civil Technologist Resurfacing of N12 Assistant Contracts Engineer, included Visual Assessments R 40 000 000.00 (Construction)
2017-2018	Project: Client: Contact: Position: Description: Activities Performed: Project Value:	N12-090-2017-4F Resurfacing of N12 from Voetpaddrift to Kimberley SANRAL Petronella Theron -021 957 4600 Senior Civil Technologist Resurfacing of N12 Assistant Contracts Engineer, included Visual Assessments R 40 000 000.00 (Construction)
2017-Current	Project: Client: Contact: Position: Description: Assigned Tasks: Duration: Value of Project:	City Wide NMT – Cape Town Eastern region Phase 3 City of Cape Town Elias Tukushe / Brendon Johnson-021 400 1111 Senior Design Technologist Implementation of non-motorized transport facilities within Eastern region Master Planning and design for 3 sites, tender documentation for 3 sites, Assistant Resident Engineer for 4 sites, Contracts Engineer for 3 sites, included Visual Assessments 3 years R 80 000 000.00 (Construction)
2017 - Current	Project: Client: Contact: Position: Description: Assigned Tasks: Duration: Value of Project:	Aan De Wijnlanden Phase 2 and Phase 5 Greenfield Developers Danie Esterhuizen-083 6011 882 Senior Civil Technologist Housing Development Services Design, Documentation, Assistant Resident Engineer, Contracts Engineer 2 years R 20 000 000.00 per Phase (Construction)

SONET GERBER, SENIOR CIVIL TECHNOLOGIST**CAPE TOWN-TRANSPORT AND INFRASTRUCTURE**

2016 - 2017	Project: City Wide NMT – Cape Town Eastern region Phase 2 Client: City of Cape Town Contact: Elias Tukushe / Brendon Johnson-021 400 1111 Position: Senior Design Technologist Description: Implementation of non-motorized transport facilities within Eastern region Assigned Tasks: Master Planning and design for 4 sites, tender documentation for 4 sites, Resident Engineer for 4 sites, project management for 4 sites, measurement and payments for 4 sites, included Visual Assessments. Duration: 3 years Value of Project: R 80 000 000.00 (Construction)
2016-2018	Project: Wellington Industrial Area Upgrade Client: Drakenstein Municipality Contact: Anetha Shortly 021 807 4835/ Louis Schlechter 021 807 6236 Position: Senior Civil Technologist Description: Conducting specialist studies and obtaining development rights for the Wellington Industrial Park Assigned Tasks: Appoint and project manage team of 7 sub consultants as well as civil engineering input required for zoning application Duration: 2 years Value of Project: R 2 229 000.00 (Total combined consultants team)
2015 - 2016	Project: Aan De Wijnlanden Phase 1 Client: Greenfield Developers Contact: Danie Esterhuizen-083 6011 882 Position: Senior Civil Technologist Description: Housing Development Assigned Tasks: Tender documentation, Assistant Resident Engineer and project management Duration: 1 years Value of Project: R 23 000 000.00 (Construction)
2013 - 2016	Project: City Wide NMT – Cape Town Eastern region Client: City of Cape Town Contact: Elias Tukushe / Brendon Johnson-021 400 1111 Position: Senior Design Technologist Description: Implementation of non-motorized transport facilities in 4 regions Assigned Tasks: Drawing and design for 4 sites, tender documentation for 4 sites, Resident Engineer for 4 sites, project management for 4 sites, measurement and payments for 4 sites, included Visual Assessments. Duration: 3 years Value of Project: R 65 000 000.00 (Construction)
2011 - 2012	Project: Rondebosch Common Non Motorised Transport Client: City of Cape Town Contact: Elias Tukushe- 021 400 3583 Position: Senior Design Technologist

SONET GERBER, SENIOR CIVIL TECHNOLOGIST**CAPE TOWN-TRANSPORT AND INFRASTRUCTURE**

	Description:	Implementation of non-motorized transport facilities
	Assigned Tasks:	Drawing, design, tender documentation, resident engineer, project manager and measurement and payment, included Visual Assessments
	Duration:	2 years
	Value of Project:	R 5 000 000.00 (Construction)
2011 - 2012	Project:	City Wide NMT – Cape Town Central region
	Client:	City of Cape Town
	Contact:	Elias Tukashe-021 400 3583
	Position:	Senior Design Technologist
	Description:	Implementation of non motorized transport facilities in 3 regions
	Assigned Tasks:	Drawing and design for 4 sites, tender documentation for 4 sites, Resident Engineer for 4 sites, project management for 4 sites, measurement and payments for 4 sites, included Visual Assessments.
	Duration:	2 years
	Value of Project:	R 15 000 000.00 (Construction)
2011	Project:	Pick 'n Pay Midpoint – Hout Bay
	Client:	Cape Coast Properties
	Contact:	Stanley Dorman-021 790 2345
	Position:	Senior Design Technologist
	Description:	Design and construction supervision of roads and services
	Assigned Tasks:	Site development plan, services design
	Duration:	6 months
2010	Project:	DCD Sewer – Cape Town Harbour
	Client:	DCD
	Contact:	Bill Fleur
	Position:	Senior Civil Technologist
	Description:	Upgrade of sewer reticulation
	Assigned Tasks:	Design and drawing, tender documentation, site supervision
	Value of Project:	R 500 000.00 (Construction)
2010	Project:	Groote Schuur
	Client:	Department of Public Works
	Contact:	Robin Hoogwerf
	Position:	Civil Technologist
	Description:	Design of irrigation, roads, storm water and sewer
	Assigned Tasks:	Design, drafting, report, draft estimates
	Value of Project:	R 76 000 000.00 (Construction)
2008 - 2011	Project:	Quality Public Spaces – Cape Town Region 3
	Client:	City of Cape Town
	Contact:	Osman Damon-021 400 1111
	Position:	Design Technologist
	Description:	Upgrade of 5 public spaces for upliftment of the community

SONET GERBER, SENIOR CIVIL TECHNOLOGIST**CAPE TOWN-TRANSPORT AND INFRASTRUCTURE**

	Assigned Tasks:	Drawing and design for 5 sites, tender documentation for 5 sites, project management for 5 sites, assistance to Resident Engineer for 5 sites, measurement and payment for 5 sites.
	Value of Project:	R 50 000 000.00 (Construction)
2008	Project:	Kraaifontein Storm water Master Plan - Kraaifontein
	Client:	City of Cape Town
	Contact:	Johann Massyn- 021 400 1111/021 550 1045
	Position:	Design Technologist
	Description:	Storm water as built information, proposed upgrade and management plan
	Assigned Tasks:	Site Investigations, gather as built information, compile report on proposed upgrade of storm water system
	Duration	6 months
	Value of Project:	R 6,5 000 000.00 (Construction)
2007	Project:	N1/N2/R300 Routine Route Maintenance
	Client:	SANRAL
	Contact:	Friedl van der Merwe-021 957 4600
	Position:	Assistant Route Manager
	Description:	Routine route maintenance
	Assigned Tasks:	Visual inspections, identifying, marking out and logging. Quantities, site supervision, measurements and payment.
	Duration	6 months
	Value of Project:	R 130 000 000.00 (Construction)
2007	Project:	Riverside Housing Development - Newlands
	Client:	Monarc Developments
	Contact:	Trevor Drabbe-021 671 5048
	Position:	Design Technician
	Description:	Design of roads and services for housing complex
	Assigned Tasks:	<ul style="list-style-type: none"> • Design of roads and services • Assist with tender documentation • Site supervision
	Duration	6 months
	Value of Project:	R 2 000 000.00 (Construction)
2005 - 2006	Project:	Fishermans World Shopping Complex – Hout Bay
	Client:	Cape Coast Properties
	Contact:	Stanley Dorman-021 790 2345
	Position:	Technician
	Description:	Design and construction supervision of roads and services
	Assigned Tasks:	Design and drawing of roads and bulk services, site supervision
	Duration:	18 months
	Value of Project:	R 30 000 000.00 (Construction)
2005	Project:	Estoril and La Palma Housing Complexes, Mossel Bay
	Client:	Greenfield Projects
	Contact:	Danie Esterhuizen-083 6011 882
	Position:	Technician

SONET GERBER, SENIOR CIVIL TECHNOLOGIST

CAPE TOWN-TRANSPORT AND INFRASTRUCTURE

Description: Design and construction supervision of roads and services for both developments

Assigned Tasks: Drawing and design of roads and bulk services for both developments

Duration: 6 months

Value of Project: R 5 000 000.00 (Construction)

2004

Project: **Adam Tas Intersection Upgrade- Stellenbosch**

Client: City of Cape Town

Contact: Piet van Blerk- ICE Consultants

Position: Technician

Description: Design and construction supervision

Assigned Tasks:

- Geometrics design assist,
- drawings and estimates

Duration: 1 year

2003

Project: **Road safety Schemes - Newham**

Client: London Borough of Newham

Contact: Martin Sachs

Position: Technician

Description: Highways Department: Upgrade, maintenance and implementation of road safety schemes to promote traffic calming to promote non-motorised transport in the borough

Assigned Tasks: Design of road traffic calming measures and stormwater that would be affected, cost estimates, visual inspections, project management

Duration: 1 year

WORK HISTORY

Dates	Company Name	Position
2009-Date	Knight Piésold Consulting, South Africa	Civil Technologist
2004-2008	Kayad Consulting Engineers	Design Technician
2004	Ice Group (Pty) Ltd	Technician
2003	London Borough of Newham	Technician