

Curriculum vitae: Ms DL ERASMUS

Name : ERASMUS, DIANE LUCIE
 Date of Birth : 20 October 1965
 Profession/Specialisation : Environmental Practitioner
 Years with Firm : 6
 Nationality : South African
 Years experience : 24

Key qualifications

Diane Erasmus has been active in the field of environmental management for eighteen years and has obtained experience as a specialist consultant in undertaking environmental processes for both small and medium to large-scale developments. This includes a wide range of projects, from communication structures, housing and resort applications to pipelines and industrial developments. She has undertaken environmental impact assessments in a number of Southern African countries, namely South Africa, Namibia and Malawi. Diane also obtained experience in writing and implementing Environmental Management Plans (EMPs) for the construction and operational phases of developments.

Undertaking Environmental Impact Assessments (EIAs) has involved the development of a number of skills, including the ability to analyse the environment in a holistic manner, while evaluating options and trade-offs. It has entailed undertaking scoping and stakeholder participation; assessment of impacts and evaluation of their potential significance; as well as recommending mitigation measures, management and monitoring of impacts; and managing, coordinating and integrating the findings of an interdisciplinary team.

Her personal responsibilities on projects have included compiling proposals, undertaking project and financial management of projects, managing large and diverse specialist teams, client interaction, integrating specialist findings and compiling reports.

She ran her own consulting business for a four-year period. She currently manages the George office of the Aurecon environmental team. Her responsibilities include direct management of a team of six staff, as well as input into the management of the greater Aurecon Cape Town environmental team. This includes interviewing and appointing new staff members, chairing office meetings and dealing with staff performance management and other daily staff issues.

Employment record

02/2007 - Date	Aurecon, Associate/Principal Environmental Practitioner
2004 - 2007	Doug Jeffery Environmental Consultants, Cape Town, Environmental Practitioner
1999 - 2004	Consulting as Diane Erasmus Environmental Services (DEES), Cape Town
1998 - 1999	EnviroAfrica, Cape Town, Associate
1996 -1998	Enviro-Consult, Cape Town, Partner
1993 - 1996	Botany Department, Stellenbosch University, Contract Researcher
1989 - 1991	Forestry Faculty, Stellenbosch University, Junior Researcher
1989	UCT, in Fresh Water Unit, Research Assistant

Management experience

2012 - Date	Management of the Aurecon George environmental department.
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Experience record

Pre-Feasibility study (PFS) and screening for fatal flaws for the increase in capacity for the Kouga Dam (Eastern Cape Province, South Africa) 10/2012 - 03/2013. *Environmental Coordinator.* A pre-feasibility study was undertaken to investigate potential raising of the Kouga Dam in the Baviaanskloof World Heritage Site. The feasibility study has identified potential environmental and social risks associated with the various options considered. Responsible for coordination of environmental input into the overall study. Involved for 0.5 person-months. (Department of Water Affairs (DWA)).

Social and Environmental Impact Assessments (SEIA) process for the proposed mining of the Z20 uranium deposit (Namibia) 2012. *Reviewer.* Aurecon and SLR Environmental Consulting were appointed to manage the Social and Environmental Impact Assessments (SEIA) process for the proposed mining of the Z20 uranium deposit. This entailed undertaking a baseline description and assessment of impacts and the development of an Environmental Management Plan (EMP), as well as public participation. Responsible for the internal review of the scoping report. Involved for 0.2 person-months. (Rössing Uranium).

Upgrade to the Environmental and Socio-Economic Impact Assessment (ESEIA) for the infrastructure upgrading in Etosha National Park (Namibia) 2011 - 2012. *Project Manager.* Aurecon was appointed to update the ESIA provide the lead consultancy services for the Environmental and Social Impact Assessment (ESIA) for proposed upgrading of infrastructure at the Ombika Gate in the Etosha National Park. This entailed undertaking a baseline description and Environmental Impact Assessment (EIA) study and the development of an Environmental Management Plan (EMP), as well as public participation for an additional site for the village. Responsible for the management of the environmental process; management of specialists; client interaction; financial management of the project; public participation; and writing of reports. Involved for 2 person-months. (Millennium Challenge Account (MCA)).

Environmental and Socio-Economic Impact Assessment (ESEIA) for a fuel storage facility in the Etosha National Park (Namibia) 2011 - 2012. *Project Manager.* The project involved an Environmental and Socio-Economic Impact Assessment (ESEIA) to assess the impact of a fuel storage facility at Okaukuejo in the Etosha National Park. This included a baseline description and environmental impact assessment study and the development of an Environmental Management Plan (EMP), as well as public participation. Responsible for the management of the environmental process; financial management of the budget; client interaction; and writing of reports. Involved for 1 person-month. (Millennium Challenge Account (MCA)).

Environmental and Socio-Economic Impact Assessment (ESEIA) for the proposed coal-fired power station at Arandis (Namibia) 2011 - 2012. *Project Manager.* The project entailed an Environmental and Socio-Economic Impact Assessment (ESEIA) for a proposed coal-fired power station at Arandis. The ESEIA included a site screening and selection process, a scoping and environmental impact assessment study and the development of an Environmental Management Plan (EMP). Responsible for the management of the environmental process; financial management of the budget; project co-ordination; and management of a team of 11 sub-consultants. Involved for 8.6 person-months. (Namibian Power Corporation (NamPower)).

North Corridor Development Project: railway line in Malawi (Malawi) 12/2010. *Package Manager.* The project involved the management of the public participation aspect of the Environmental Impact Assessment (EIA) to investigate the development of railway infrastructure to transport coal from the Moatize mine in Mozambique to the Port of Nacala in Mozambique, through Southern Malawi. The Public Participation Process (PPP) for this project involved a thorough approach, including a number of public and stakeholder meetings at national, district and local level to ensure the engagement of the affected parties in the process. Responsible for managing the environmental process; management of specialists; client interaction regarding technical aspects; public participation; and writing of the reports. Involved for 7.6 person-months. (Vale).

Environmental and Socio-Economic Impact Assessment (ESEIA) for the infrastructure upgrading in Etosha National Park (Etosha, Namibia) 2010 - 2011. *Project Manager.* Aurecon was appointed to provide the the lead consultancy services for the Environmental and Socio-Economic Impact Assessment (ESEIA) for proposed upgrading of infrastructure within two zones of the Etosha National Park. This included the identification of the preferred sites for development, a socio-economic census of the park residents, using a Multi-Criteria Decision Analysis (MCDA) model, a baseline description and Environmental Impact Assessment (EIA) study and the development of an Environmental Management Plan (EMP), as well as public participation. Responsible for the environmental process, including the financial management of the budget, project coordination and the management of a team of six sub-consultants. Involved for 6.7 person-months. (Millennium Challenge Account (MCA)).

Health, Safety, Environment and Quality (HSEQ) brochure for Rössing Uranium's expansion project (Namibia) 2010 - 2011. *Team Member.* The project involved the compilation of a succinct report describing the Rössing Uranium Health, Safety, Environmental and Quality (HSEQ) management system (HSEQ brochure). The report will serve as an annexure to various Environmental and Social Impact Assessments (ESIAs), and Environmental and Social Management Plans (ESMPs) currently underway. The aim is to provide the authorities and other readers with an adequate understanding of the system and the various management policies, programmes and procedures already in use at the mine. Responsible for providing technical input and assisting with the compilation of the HSEQ brochure. Involved for 1.4 person-months. (Rössing Uranium).

Technical feasibility study to investigate future expansion of the Lüderitz Port (Namibia) 2010. *Environmental coordinator.* A technical feasibility study was undertaken to investigate future expansion of the Lüderitz Port as a key step to the expansion of Namport's national operations. The feasibility study has identified a possible development scenario for the port. Responsible for coordination of environmental input into the overall study, including management of marine and social specialists. Involved for 1.2 person-months. (The Namibian Ports Company (Pty) Ltd (Namport)).

Environmental and Socio-Economic Impact Assessment (ESEIA) for the proposed coal-fired power station at Walvis Bay (Namibia) 2008 - 2009. *Project Manager.* Aurecon was appointed by the Namibian Power Corporation (NamPower) to provide the lead consultancy services for the Environmental and Socio-Economic Impact Assessment (ESEIA) for the proposed coal-fired power station at Walvis Bay, including the identification of environmental boundaries for the proposal, a site screening and selection process, a scoping and Environmental Impact Assessment (EIA) study and the development of an Environmental Management Plan (EMP). Responsible for the environmental process, including the financial management of the budget, project coordination and the management of a team of 12 sub-consultants. Involved for 6.5 person-months. (Namibian Power Corporation (NamPower)).

Floating Liquefied Natural Gas (LNG) facility in the Mossel Bay area (Western Cape Province, South Africa) 2008. *Public Participation Process (PPP) Manager.* The project involved the management of the public participation aspect of the Environmental Impact Assessment (EIA), as appointed by PetroSA to investigate the development of infrastructure for the importation of Liquefied Natural Gas (LNG) in Vleesbaai, west of Mossel Bay, in order to augment the supply of gas to its existing Gas-to-Liquid (GTL) facility located in the vicinity of Mossel Bay. Responsible for managing the public consultation process related to the EIA. Involved for 1 person-month. (PetroSA).

Paratus emergency generation facility in Walvis Bay (Walvis Bay, Namibia) 2008. *Lead Consultant.* The project entailed managing the environmental process in relation to a proposed 50MW heavy fuel oil emergency electricity generation facility located in the industrial port area. Responsible for the environmental process, including the financial management of the budget, project coordination, and the management of a team of sub-consultants. Involved for 0.5 person-months. (Namibian Power Corporation (NamPower)).

Assessment of alternative alignments for the railway line in Malawi (Malawi) 2008. *Team Member.* The project involved the assessment of the environmental aspects of four alternative alignments for railway infrastructure to transport coal from the Moatize Mine in Mozambique to the Port of Nacala, through Southern Malawi. A Multi-Criteria Decision Analysis (MCDA) was undertaken of the four alternatives to consider the best solution from a variety of perspectives. Responsible for technical input; managing the input from the environmental team; and writing of reports. Involved for 2 person-months. (Vale).

Garden Route Environmental Management Framework (EMF) (Western Cape Province, South Africa) 2008. *Environmental Engineer.* Aurecon was appointed to contribute to the hydrology and infrastructure information layers and provision of local liaison support for the development of the Garden Route Environmental Management Framework (EMF), focusing on the Kaaimans River to Noetzie study area on the Garden Route in the Southern Cape. Responsible for providing input into the process. Involved for 1.2 person-months. (Earth Inc./Department of Environmental Affairs and Tourism (DEAT)).

Review of applications to develop under the Environmental Conservation Act (Act 73 of 1989) (ECA) (Eastern Cape Province, South Africa) 2007. *Team Member.* The project involved the provision of an independent review of a range of development applications. Responsible for acting as Independent Reviewer. Involved for 6 person-months. (Eastern Cape Provincial Government).

Review of the biodiversity components of municipal Spatial Development Frameworks (SDFs) in the Cape Action for People and the Environment (C.A.P.E.) domain (Western Cape Province, South Africa) 2007. *Project Manager.* The project involved the provision of an overview of the requirements for biodiversity in Spatial Development Frameworks (SDFs), and an assessment of the current status of biodiversity in these SDFs. Responsible for undertaking the review of numerous SDFs, and the compilation of a feedback report. Involved for 3 person-months. (South African National Biodiversity Institute (SANBI)).

Upgrading of the Knysna Wastewater Treatment Works (WWTW) (Western Cape Province, South Africa) 2007. *Project Manager.* The project entailed undertaking a scoping and an Environmental Impact Assessment (EIA) process in terms of National Environmental Management Act (NEMA). Responsible for management of the environmental process; project coordination; management of a team of six sub-consultants; client interaction; financial management of the project; and writing of reports. Involved for 4 person-months. (Knysna Local Municipality).

Coal-fired power station and associated infrastructure in the Witbank area (Mpumalanga Province, South Africa) 2007. *Team Member.* The project entailed assisting in dealing with the appeal process on the positive authorisation for the 5 400MW base-load power plant and associated infrastructure. Responsible for assisting with the Environmental Impact Assessment (EIA) appeal process. Involved for 0.5 person-months. (Eskom).

Environmental Management Plan (EMP) for the Glen Housing development, Camps Bay, Cape Town (Western Cape Province, South Africa) 2006. *Project Manager.* The project involved the compilation of the Environmental Management Plan (EMP) for the construction phase for this housing development. Responsible for managing the EMP process; and training for construction staff. Involved for 1 person-month. (Private developer).

Mixed use development, Klapmuts (Western Cape Province, South Africa) 2006. *Project Manager.* The project involved undertaking the scoping stage of the Environmental Impact Assessment (EIA) process for a mixed density township development, Klapmuts Housing Estate, in the Western Cape. Responsible for management of the EIA process; management of a team of sub-consultants; client interaction; financial management; and writing of reports. Involved for 2 person-months. (Simondium Development Trust).

Residential development, Romansbaai Beach and Country Estate, Gansbaai (Western Cape Province, South Africa) 2006. *Project Manager.* The project entailed undertaking an Environmental Impact Assessment (EIA) for this residential development in a sensitive environment. The EIA involved the identification of development opportunities and constraints, management of a large team of specialists and extensive public participation. Responsible for managing the EIA process; managing a team of sub-consultants; interaction with clients; financial management of the project; and writing of reports. Involved for 4.5 person-months. (Pinnacle Point Developments).

Cape Point Wine Estate, Noordhoek (Western Cape Province, South Africa) 2006. *Project Manager.* The project undertook an Environmental Impact Assessment (EIA) for the development of a restaurant and hotel development, with a housing component for a property in the heart of Noordhoek. Responsible for management of the EIA process; management of a team of sub-consultants; client interaction; financial management of the project; and writing of reports. Involved for 4 person-months. (Private developer).

Residential development, Montagu Country Estate, Montagu (Western Cape Province, South Africa) 2006. The project undertook an Environmental Impact Assessment (EIA) for the residential development around an existing golf course. Responsible for the management of the environmental process; project coordination; management of a team of sub-consultants; client interaction; financial management of the project; and writing of reports. Involved for 3 person-months. (Private developer).

Proposed communications mast, Newlands, Cape Town (Western Cape Province, South Africa) 2006. *Project Manager.* The project involved the compilation of a scoping checklist for the proposed mast for upgraded communications for the electrical supply system for the City of Cape Town. Responsible for management of the EIA process; client interaction; financial management; and writing of reports. Involved for 1.5 person-months. (City of Cape Town).

Environmental Management Plan (EMP): Sunnydale housing development, Sunnydale, South Peninsula (Western Cape Province, South Africa) 2006. *Project Manager.* The project entailed the compilation of the Environmental Management Plan (EMP) for the construction phase for this housing development. Responsible for managing the EMP process and providing training for the construction staff. Involved for 1.5 person-months. (Private developer).

Environmental Management Plan (EMP) for the Heritage Park development, Somerset West (Western Cape Province, South Africa) 2005. *Project Manager.* The project involved the compilation of the Environmental Management Plan (EMP) for the construction phase for this housing development. Responsible for managing the EMP process and providing training for the construction staff. Involved for 0.5 person-months. (Private developer).

Environmental Management Plan (EMP) for Heron Banks Golf Course Development, Sasolberg (Free State Province, South Africa) 2005. *Project Manager.* The project involved the compilation of the Environmental Management Plan (EMP) for the operational phase of this golf course and housing development on the banks of the Vaal River. Responsible for managing the EMP process. Involved for 0.75 person-months. (Private developer).

Redevelopment of the Heartlands site for AECL Limited, Somerset West (Western Cape Province, South Africa) 2005. *Public Participation Process (PPP) Manager.* The project involved undertaking the Public Participation Process (PPP) for the Heritage Impact Assessment (HIA) process for the project. Responsible for managing the PPP. Involved for 0.5 person-months. (Melanie Attwell Heritage Consultants).

Change in land use for housing, Mfuleni (Western Cape Province, South Africa) 2005. *Project Manager.* The project involved the compilation of a scoping checklist for the proposed development of low cost housing in Cape Town. Responsible for managing the Environmental Management Plan (EMP) process; client interaction and writing of reports. Involved for 0.5 person-months. (City of Cape Town).

Residential development, Parow, Cape Town (Western Cape Province, South Africa) 2004. *Project Manager.* The project involved the compilation of a scoping checklist for the change in land use of a small piece of open space in the centre of an existing residential area. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 0.75 person-months. (Private landowner).

Skuifraam repeater station, Franschhoek (Western Cape Province, South Africa) 2004. *Project Manager.* The project involved the compilation of a scoping checklist for a repeater site to allow for enhanced radio communications during the construction phase of the Berg River Dam. Responsible for managing the Environmental Impact Assessment (EIA) process; client interaction and writing of reports. Involved for 0.5 person-months. (Telkom).

Township development, Heritage Park, Somerset West (Western Cape Province, South Africa) 2004. *Project Manager.* The project involved undertaking an Environmental Impact Assessment (EIA) process for the development of this residential and commercial township development. Responsible for managing the EIA process; client interaction and writing of reports. Involved for 1.5 person-months. (Somerset Trust Business Park).

Environmental Management Plan (EMP) for Abelone Farm, Hawston (Western Cape Province, South Africa) 2004. *Project Manager.* The project entailed the compilation of the Environmental Management Plan (EMP) for the construction phase for this development. Responsible for managing the EMP process. Involved for 0.75 person-months. (Private developer).

Upgrading of the Excelsior Hotel, Swiss Farm, Franschhoek (Western Cape Province, South Africa) 2004. *Project Manager.* The project entailed the compilation of a scoping checklist for upgrade to the existing facilities of the hotel. Responsible for managing the Environmental Impact Assessment (EIA) process; client interaction and writing of reports. Involved for 1 person-month. (Private developer).

Change in land use, Kommetjie (Western Cape Province, South Africa) 2004. *Project Manager.* The project entailed the compilation a scoping checklist for the change in land use to a small piece of land on the urban edge. Responsible for managing the Environmental Impact Assessment (EIA) process; including client interaction and writing of reports. Involved for 1 person-month. (Private landowner).

Residential development, Onrus (Western Cape Province, South Africa) 2004. *Project Manager.* The project involved the compilation of a scoping checklist for the change in land use to a small piece of land on the urban edge. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 0.75 person-months. (Private landowner).

Upgrade to the City of Cape Radio Trunking Network for Emergency Services, Cape Town (Western Cape Province, South Africa) 2003 - 2004. *Project Manager.* The project involved undertaking the scoping process for 13 sites as part of the upgrade to the City of Cape radio trunking network for emergency services. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 6 person-months. (City of Cape Town).

Upgrade to Village Drums and Pails facility in Phillippi (Western Cape Province, South Africa) 2003. *Project Manager.* The project involved undertaking the scoping process upgrade to facilities for drum reconditioning. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 1 person-month. (Village Drums and Pails).

Environmental Management Plan (EMP) for Hillside Farm, Kommetjie (Western Cape Province, South Africa) 2003. *Project Manager.* The project involved the compilation of the Environmental Management Plan (EMP). Responsible for managing the EMP process and providing training for the construction staff. Involved for 1 person-month. (DC & Associates).

Environmental Management Plan (EMP) for Farm Groot Paternoster No. 1014, Groot Paternoster Punt (Western Cape Province, South Africa) 2003. *Project Manager.* The project involved the compilation and overseeing of the implementation of the Environmental Management Plan (EMP) for the construction phase for this development. Responsible for managing the EMP process and training of construction staff. Involved for 1 person-month. (Private developer).

Radio network for the train system in the Karoo (Western Cape Province, South Africa) 2002 - 2004. *Project Manager.* The project involved the undertaking of the screening process and scoping checklists for 15 sites throughout the Karoo, as part of the upgrade to the radio network system for trains. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 6 person-months. (Transtel).

Development of a cellular communications network for Cell C, Cape Town (Western Cape Province, South Africa) 2002 - 2003. *Project Manager.* The project undertook the screening process and scoping checklists for 31 cellular communications base stations. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 4 person-months. (Siemens).

Environmental Management Plan (EMP) for farm dams, De Dam, Oudtshoorn (Western Cape Province, South Africa) 2002. *Project Manager.* The project involved the compilation of the Environmental Management Plan (EMP) for the construction phase for the dam construction. Responsible for managing the EMP process. Involved for 1 person-month. (Private landowner).

Change in land use, Panache Country Lodge, Erf 7754, Hout Bay (Western Cape Province, South Africa) 2002. *Project Manager.* The project involved the compilation of a screening report and a scoping checklist for the change in land use to allow for resort facilities. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 0.5 person-months. (Private landowner).

Change in land use for the establishment of a church: remainder of Farm 766, Phillippi (Western Cape Province, South Africa) 2002. *Project Manager.* The project involved undertaking the screening report and scoping checklist for the change in land use for the establishment of a church. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 0.5 person-months. (Ebenezer Baptist Church).

Environmental Management Plan (EMP): water supply pipeline, Moorreesberg (Western Cape Province, South Africa) 2002. *Project Manager.* The project involved the compilation and overseeing of the implementation of the Environmental Management Plan (EMP) for the construction phase for this development. Responsible for managing the EMP process, including construction staff training. Involved for 3 person-months. (MVD).

Environmental Management Plan (EMP) for Celestewood development in Sunnydale, South Peninsula (Western Cape Province, South Africa) 2002. *Project Manager.* The project involved the compilation and overseeing of the implementation of the Environmental Management Plan (EMP) for the construction phase for this housing development. Responsible for managing the EMP process, including construction staff training. Involved for 1 person-month. (Private developer).

Radio trunking sites for Telkom communications system, Sutherland (Western Cape Province, South Africa) 2002. *Project Manager.* The project entailed undertaking the screening process and scoping reports for 27 sites for an upgraded communications system in this isolated area. This project was selected by Telkom as part of the Best Practice Document (BPD) presented at the World Summit for Sustainable Development (WSSD) in Johannesburg in 2002. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 6 person-months. (Telkom).

Change in land use, Portion 3 of Pardekloof Farm No 475, Caledon (Western Cape Province, South Africa) 2002. *Project Manager.* The project entailed the compilation of a screening report and scoping checklist for a change in land use of sensitive mountain fynbos for resort development. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 1 person-month. (Private landowner).

Residential development, Sunnydale, Cape Town (Western Cape Province, South Africa) 2002. *Project Manager.* The project involved the compilation of a scoping checklist for the change in land use of an agricultural area for residential development. Responsible for managing the Environmental Impact Assessment (EIA) process, including client interaction and writing of reports. Involved for 0.5 person-months. (DC & Associates).

Upgrade to the Stony Point area, Betty's Bay (Western Cape Province, South Africa) 2001. *Project Manager.* The project entailed undertaking a scoping exercise for the upgrade to the area. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 2 person-months. (Hangklip-Kleinmond Municipality).

Environmental Management Plan (EMP) for the City of Cape Town Radio Trunking System (Western Cape Province, South Africa) 2001. *Project Manager.* The project involved the compilation and overseeing of the implementation of the Environmental Management Plan (EMP) for the construction phase for the construction phase of 14 sites. Responsible for managing the EMP process and training the construction staff. Involved for 1 person-month. (City of Cape Town).

Residential development, Portion 12 of Farm 214, Brackenfell (Western Cape Province, South Africa) 2001. *Project Manager.* The project undertook a scoping exercise for the residential development proposed for the area. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 1 person-month. (Terraplan Associates).

Residential development, Portion 25 of Cape Farm 951, Sunnydale, Cape Town (Western Cape Province, South Africa) 2001. *Project Manager.* The project entailed the compilation of a scoping checklist for the change in land use of an agricultural area for residential development. Responsible for managing the Environmental Impact Assessment (EIA) process; client interaction; and report writing. Involved for 0.5 person-months. (DC & Associates).

Water supply pipeline, Moorreesberg (Western Cape Province, South Africa) 2001. *Project Manager.* The project involved undertaking the scoping process for the water supply system to the agricultural area. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 1.5 person-months. (MVD).

Construction and upgrade of farm dams, De Dam Farm, Oudtshoorn (Western Cape Province, South Africa) 2001. *Project Manager.* The project entailed undertaking the screening process and scoping checklist for the construction of one farm dam and the upgrading of another. Responsible for managing the Environmental Impact Assessment (EIA) process; including client interaction and writing of reports. Involved for 1 person-month. (Private landowner).

Development of a cellular communications network for Motorola, Cape Town (Western Cape Province, South Africa) 2000 - 2001. *Project Manager.* This project, as part of the bid to become the third cellular network provider in South Africa, involved the undertaking of the screening process for blanket exemptions for 135 cellular communications base stations sites throughout Cape Town. Responsible for the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 4 person-months. (Motorola).

MTN cellular communication structures: application for exemption, Cape Town (Western Cape Province, South Africa) 2000. *Project Manager.* The project involved undertaking the screening process for blanket exemptions for 12 sites for MTN. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 5 person-months. (MTN).

Development of a cellular communications network for Lucent Technologies, Cape Town (Western Cape Province, South Africa) 2000. *Project Manager.* This project, as part of the bid to become the third cellular network provider in South Africa, involved the undertaking of the screening process for blanket exemptions for 45 cellular communications base stations sites throughout Cape Town. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 5 person-months. (Lucent Technologies).

Faunal assessment for the development at Silverstroom, Atlantis (Western Cape Province, South Africa) 1999. *Project Manager.* The project entailed undertaking a specialist faunal study as part of the Environmental Impact Assessment (EIA) process. Responsible for providing specialist input. Involved for 0.5 person-months. (Knight Hall & Hendry).

Environmental Management Plan (EMP) for the Sixteen Mile Beach Housing Development, Yzerfontein (Western Cape Province, South Africa) 1999. *Project Manager.* The project involved the compilation of the Environmental Management Plan (EMP) for the operational phase of this housing development. Responsible for managing the EMP process. Involved for 1 person-month. (Private developer).

MTN cellular communications base stations: Environmental Management System (EMS) (South Africa) 1999. *Project Manager.* The project was concerned with controls for the construction periods - guidelines for MTN. Responsible for managing the Environmental Impact Assessment (EIA) process. Involved for 1 person-month. (MTN).

Residential development, Jantjiesfontein, Berg River (Western Cape Province, South Africa) 1999. *Project Manager.* The project involved undertaking the environmental evaluation and report for exemption for the housing development. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 0.5 person-months. (Rumboll & Verster).

Low cost housing development, Saron (Western Cape Province, South Africa) 1999. *Project Manager.* The project entailed undertaking the environmental evaluation and report for exemption for the low cost housing development. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 0.5 person-months. (Rumboll & Verster).

Industrial development, Klipheuwel (Western Cape Province, South Africa) 1999. *Project Manager.* The project involved undertaking an environmental evaluation and report for exemption for an industrial development. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 0.75 person-months. (Private developer).

Crematorium, Somerset West (Western Cape Province, South Africa) 1999. *Project Manager.* The project entailed undertaking the environmental evaluation and application report for a crematorium in Helderberg. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 0.5 person-months. (Excem).

Cellular communication structures for MTN (Western Cape Province, South Africa) 1998 - 2005. The project involved undertaking the environmental process for 65 cellular communications base stations throughout the Western Cape. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 5 person-months. (MTN).

Faunal assessment for the housing development at Uitkamp, Durbanville (Western Cape Province, South Africa) 1998. *Specialist.* The project involved undertaking a specialist faunal study as part of the Environmental Impact Assessment (EIA) process. Responsible for giving specialist input. Involved for 0.75 person-months. (Doug Jeffery Environmental Consultants).

Environmental Management Plan (EMP) for Jacobuskraal Housing Development, Yzerfontein (Western Cape Province, South Africa) 1998. *Project Manager.* The project entailed the compilation of the Environmental Management Plan (EMP) for the operational phase of this housing development. Responsible for managing the EMP process. Involved for 1 person-month. (Private developer).

Review of applications to develop under the Environmental Conservation Act (Act 73 of 1989) (Western Cape Province, South Africa) 1998 - 2000. *Reviewer.* The project involved the provision of an independent review of a range of development applications. Responsible for the review applications. Involved for 2 person-months. (Provincial Government of the Western Cape (PGWC)).

Faunal assessment for a housing development on Pappegaaiberg, Stellenbosch (Western Cape Province, South Africa) 1998. *Project Manager.* The project entailed undertaking the specialist faunal study as part of the Environmental Impact Assessment (EIA) process. Responsible for giving specialist input. Involved for 0.6 person-months. (SRK Consulting).

Residential development, Muizenberg East, Cape Town (Western Cape Province, South Africa) 1997. *Project Manager.* The project involved undertaking the environmental evaluation for a housing development. Responsible for managing the Environmental Impact Assessment (EIA) process, client interaction and report writing. Involved for 0.75 person-months. (Ogden Entertainment).

Faunal assessment for the Paradyskloof Golf Estate, Stellenbosch (Western Cape Province, South Africa) 1997. *Specialist.* The project entailed undertaking specialist faunal study as part of the Environmental Impact Assessment (EIA) process. Responsible for giving specialist input. Involved for 0.75 person-months. (SRK Consulting).

Assessment of the preservation of biotic diversity in forestry plantations (South Africa) 1997. *Project Manager.* The project entailed the assessment of the contribution of the forestry industry to the preservation of biodiversity in South Africa. Responsible for managing the environmental input. Involved for 2 person-months. (Timber Growers Association).

Faunal assessment for the Sparreboos development, Knysna (Western Cape Province, South Africa) 1996. *Specialist.* The project involved undertaking a specialist faunal study as part of the Environmental Impact Assessment (EIA) process. Responsible for giving specialist input. Involved for 1 person-month. (SRK Consulting).

Education

1993 : MSc in Nature Conservation, University of Stellenbosch, South Africa
 1988 : BSc Honours in Nature Conservation, University of Stellenbosch, South Africa
 1987 : BSc in Botany and Zoology, University of Cape Town, South Africa

Career enhancing courses

2013 : Level 1 SUSOP training, -
 2012 : Conflict resolution, -
 2011 : Sustainability Assessments, International Association for Impact Assessment (South Africa),
 2009 : Mutual Gains Approach to Sustainability, -
 2008 : Cumulative Impact Assessment, International Association for Impact Assessment (Perth)

Professional affiliations

Environmental Practitioner, Environmental Assessment Practitioners Association of South Africa (EAPASA)
 Member, International Association of Impact Assessment (IAIA)

Languages

	Reading	Writing	Speaking
English	Excellent	Excellent	Excellent
Afrikaans	Fair	Poor	Fair

Research projects

Erasmus DL (2002). "Baboon damage in pine plantations in the Western Cape". Unpublished MA dissertation, University of Stellenbosch.

Croxford DL (1988). "Home range patterns of genets in the Jonkershoek Nature Reserve". Unpublished BSc Hons thesis, University of Stellenbosch. 1988.

Publications

Erasmus DL, and Retief F, 2008. "The Contribution of the International Association for Impact Assessments (South Africa) (IAIASa) to the Evolution of Environmental Assessment Debates in South Africa". Presented at the Department of Environmental Affairs and Tourism's (DEAT's) conference: Ten Years of Environmental Impact Assessments in South Africa, 24 - 25 November 2008.

Erasmus DL, Boucher C, Marais C and McDonald D, 1993 and 1996. "Data Catalogue of All Research Projects Undertaken in the Fynbos Biome". National Botanical Institute (NBI) and the Foundation for Research Development (FRD), Volumes 1 & 11.

Referees

Company

Doug Jeffery Environmental
Assessments
ERM

Contact Person

Doug Jeffery

Brett Lawson

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Curriculum vitae: Mr SP CLARK

Name : **CLARK, SIMON PETER**
 Date of Birth : 08 February 1978
 Profession/Specialisation : Environmental Impact Assessments
 Years with Firm : 3
 Nationality : South African
 Years experience : 3

Key qualifications

Mr Clark is currently employed as an Environmental Practitioner at Aurecon's Cape Town Office. His main tasks are related to environmental projects within South Africa and Southern African countries.

Mr Clark obtained a Bachelor's Degree in Environmental Management from the University of South Africa in 2010 and is currently completing his Honours Degree. His specific expertise is in Environmental Impact Assessments and Management Programs with a focus on renewable energy projects. Mr Clark has relevant experience legislation, processes and management of environmental projects gained while working as a Project co-ordinator. He currently works in an integrated multidisciplinary team, where he has developed additional experience in leadership, project management and provides technical support, to a wide range of environmental projects.

Mr Clark uses remote sensed imaging and geological information systems software.

Employment record

2011 - Date Aurecon, Cape Town, Environmental consultant
 2006 - 2010 Meta Acoustic Developments, Environmental Engineer/Project Leader and Designer/Consultant
 2002 - 2006 RSnow consulting, Sales and Marketing Manager
 1998 - 2001 TPG, Sales Manager

Management experience

2001-2010 Sales and Marketing Manager

Experience record

Environmental Impact Assessment (EIA) for the upgrading of Piketberg Stormwater infrastructure (Western Cape Province, South Africa) 2012 - Date. *Project Member.* Piketberg Stormwater Upgrade and Rehabilitation Project, Western Cape. Report compilation, key stakeholders engagement, specialists, coordination, and undertaking the Public Participation Process (PPP). Involved for 8 person-months. (Bergriver Municipality).

Environmental Impact Assessment (EIA) for the construction of Transmission Lines (Western Cape Province, South Africa) 2012 - Date. *Project Member.* Mulilo proposes to construct two 132kV overhead power lines in order to connect two-Wind Energy Facilities (WEF), to be developed to the west and east of De Aar in the Northern Cape, to the national grid. Report compilation, key stakeholders engagement, specialists, coordination, and undertaking the Public Participation Process (PPP). Involved for 7 person-months. (Mulilo Renewable Energy (Pty) Ltd).

Environmental Impact Assessment (EIA) for the construction of the Wind and Solar Farm (Western Cape Province, South Africa) 2012 - Date. *Project Member.* Mainstream proposes to construct a 750 MW wind energy facility and a 250 MW solar photovoltaic energy facility on farms near Springbok in the Northern Cape. Report compilation, key stakeholders engagement, specialists, coordination, and undertaking the Public Participation Process (PPP). Involved for 12 person-months. (South Africa Mainstream Renewable Power Developments (Pty) Ltd).

Spoil site identification for the Nacala Rail corridor (Nacala, Mozambique) 09/2012 - 10/2012. *Project Member.* Identification of suitable sites for excess spoil from an environmental and socio-economical perspective. Key stakeholders engagement, GPS logging of sites, report compilation. Involved for 15

person-months. (VALE).

Environmental Impact Assessment (EIA) for the construction of the Wind Farm (Western Cape Province, South Africa) 2011 - Date. *Project Member.* IPD Power proposes to construct a wind energy facility which would potentially consist of in excess of 150 wind turbines, to generate approximately 438 Megawatts (MW) of renewable energy on five farms, near Vredenburg in the Saldanha Bay Municipal Area in the Western Cape. Responsible for report compilation, corresponding with key stakeholders and specialists, coordinating the specialist part of the project team, and undertaking the Public Participation Process (PPP). Involved for 28 person-months. (IPD Power (Pty) Ltd).

Environmental Impact Assessment (EIA) for the construction of the Wind Farm (Western Cape Province, South Africa) 2011 - Date. *Project Member.* Mulilo proposes to construct two 155-360 MW wind energy facilities on the eastern plateau approximately 20 km east of De Aar, Northern Cape. Report compilation, key stakeholders engagement, specialists, coordination, and undertaking the Public Participation Process (PPP). Involved for 19 person-months. (Mulilo Renewable Energy (Pty) Ltd).

Environmental Impact Assessment (EIA) for the construction of the Wind Farm (Western Cape Province, South Africa) 2011 - Date. *Project Member.* IPD Power proposes to construct 173 wind turbines with a combined maximum output of 519 MW and the total size of the project area (seven farms) under consideration is approximately 11 600 ha near Veldrif in the Bergrivier Bay Municipal Area in the Western Cape. Report compilation, key stakeholders engagement, specialists, coordination, and undertaking the Public Participation Process (PPP). Involved for 28 person-months. (IPD Power (Pty) Ltd).

Environmental Impact Assessment (EIA) for the Sherwood Poultry farm expansion (Western Cape Province, South Africa) 2010 - Date. *Project Member.* Sherwood Poultry Farm expansion, Western Cape. Report compilation, key stakeholders engagement, specialists, coordination, and undertaking the Public Participation Process (PPP). Involved for 16 person-months. (Eikenhoff Farms).

Environmental Impact Assessment (EIA) for the Sherwood Poultry farm expansion (Western Cape Province, South Africa) 2010 - Date. *Project Member.* Provincial Government Proposed Borrow Pits for supply of materials for re-gravelling and maintenance of district municipalities in the Western Cape. Report compilation, key stakeholders engagement, specialists, coordination, and undertaking the Public Participation Process (PPP). Involved for 5 person-months. (Western Cape, Department Of Transport And Public Works).

Environmental Impact Assessment (EIA) for Working for Wetlands (Western Cape Province, South Africa) 2010 - Date. *Project Member.* Working for Wetlands Rehabilitation Programme. Report compilation, key stakeholders engagement, and undertaking the Public Participation Process (PPP). Involved for 26 person-months. (South African National Biodiversity Institute, South Africa).

Environmental Impact Assessment (EIA) for the construction of the Wind Farm (Western Cape Province, South Africa) 2010 - 01/2013. *Project Member.* iNca proposes to construct a wind energy facility to generate approximately 30 Megawatts (MW), near Gouda in the Western Cape. Report compilation, key stakeholders engagement, specialists, coordination, and undertaking the Public Participation Process (PPP). Involved for 8 person-months. (iNca Gouda Wind (Pty) Ltd).

Education

2011 : Honours Environmental Management, University of South Africa (UNISA)
 2010 : BA Environmental Management, University of South Africa (UNISA)

Career enhancing courses

2013 : -, SUSOP Sustainability Operation

Professional affiliations

Committee, IAIA SA

Languages

English
Afrikaans

Reading
Excellent
Good

Writing
Excellent
Fair

Speaking
Excellent
Fair

Curriculum vitae: Mr CW NORMAN

Name : **NORMAN, CHARLES WILLIAM**
 Date of Birth : 14 May 1963
 Profession/Specialisation : Environmental assessments
 Years with Firm : 8
 Nationality : South African
 Years experience : 26

Key qualifications

Charles is a principal environmental practitioner with close to three decades of experience in environmental services. His strengths in technical proficiency and strategic thinking, along with his international environmental experience, place him in a strong position to advise environmental impact assessment (EIA) teams on the integration of technical pragmatism and due environmental processes. His extensive review experience has placed him in a key role mentoring environmental assessment practitioners within Aurecon and coordinating the advisory and delivery functions of projects.

He was the assistant project leader and technical coordinator for Vale's Moatize mine expansion and Nacala corridor EIAs, where he managed a team of up to 80 practitioners, specialists and technical advisors. He has travelled extensively in rural Africa and was based in Maputo during the implementation of the aforementioned projects.

He has carried out a variety of environmental assessments for a range of public and private sector projects locally and internationally, predominantly related to mining, infrastructure and manufacturing. He also provides advice to in-house engineering teams and oversees the appointment and management of external EIA consultants.

In addition, he has had extensive experience in environmental management, including soil and plant mapping, EIA, environmental auditing, and has lectured at the NMMU for the Departments of Forestry, Nature Conservation and Agriculture. He spent a number of years with the Department of Environmental Affairs and Development Planning reviewing and evaluating environmental impact assessments and appeals, also advising the competent authority and the Minister on law enforcement and environmental management matters.

Charles is in the process of completing his Masters' Degree in Environmental Law at the Nelson Mandela Metropolitan University (NMMU) in South Africa. He also holds a BTech degree in Forestry from the Port Elizabeth Technikon in South Africa.

Employment record

12/2006 - Date	Aurecon, Senior Environmental Practitioner/Principal
2004 - 2006	Provincial Department of Environment Affairs and Development Planning, Principal Environmental Officer
1997 - 2002	"Droom Boom - ruff stick stuff", Proprietor
1995 - 2005	Port Elizabeth Techikon, George Campus, Part-time Lecturer, Course Administrator and Consultant
1992 - 2004	Southern Cape Environmental Services, Proprietor and Project Manager
1988 - 1991	South African Forestry Research Institute

Experience record

Environmental management plans (EMPs) for coal bed methane prospecting activities (Mozambique) 07/2012 - 02/2012. *Project Member.* Aurecon was appointed by Rio Tinto to compile the environmental management plan (EMP) for the coal bed methane (CBM) prospecting activities in each of the lease areas, ensuring the necessary licencing of the activities. Responsible for project management, coordination of information and team inputs. Involved for 0.25 person-months. (Rio Tinto Coal Mozambique).

Exploratory drilling environmental management plan (EMP) (Mozambique) 01/2012 - 15/2012. *Project Leader.* The project entailed the compilation of an environmental management plan (EMP) for exploratory drilling operations for coal prospecting in Moatize. Responsible for client liaison, project management,

coordination of team members and review of final products. Involved for 0.22 person-months. (Coal India Africana Limitada (CIAL)).

Independent review of environmental impact assessment (EIA) for report (KwaZulu-Natal Province, South Africa) 11/2011 - 12/2011. *Consulting Team Member.* The purpose of the project was to review the EIA process undertaken by Knight Piesold for a bulk water supply pipeline in KwaZulu-Natal. Responsible for the review of impact assessment methodology. Involved for 0.2 person-months. (Knight Piesold).

Feasibility study for a Zuma Energy project (Itobe, Nigeria) 10/2011 - 01/2012. *Project Leader.* Aurecon prepared a bankable feasibility study using a gap analysis of all existing documents and work already done by Zuma Energy. The study included a review of the environmental and social issues to determine adequacy and compliance to the Nigerian Statutory requirements (local environmental and social impact assessment), to the World Bank's standard Equator Principles, and to a level suitable for financial closure. Responsible for the review of final report against World Bank standards and Equator Principles. Involved for 0.21 person-months. (Zuma Energy Nigeria Limited).

Upgrading of Distillery Road in Wellington (Western Cape Province, South Africa) 04/2011 - 03/2013. *Project Manager.* The project entailed a basic assessment EIA for the proposed upgrading of Distillery Road in Wellington, including a heritage assessment. Responsible for project management, client and authority liaison, coordination of specialist input and review of final reports. Involved for 0.8 person-months. (Drakenstein Municipality).

Operational environmental management plan (EMP) for Shoprite Checkers (Western Cape Province, South Africa) 03/2011 - 06/2011. *Task Leader.* The project included the compilation of an operational EMP to meet the local Municipality requirements for their new shopping centre at Sandown Road in Cape Town. Responsible for project management, client and authority liaison, EMP report compilation. Involved for 0.2 person-months. (Shoprite Checkers).

Independent review of environmental impact assessment (EIA) applications (Western Cape Province, South Africa) 03/2011 - 12/2013. *Task Leader.* The purpose of the project was to review contentious EIA applications in terms of the National Environmental Management Act (Act 107 of 1998) to support authority decision making. Responsible for project management, client liaison, advisory role to team members and review and coordination of final products. Involved for 1.42 person-months. (Department of Environmental Affairs and Development Planning).

AfriSam Cement factory, quarries and associated infrastructure at Saldanha Bay (Western Cape Province, South Africa) 02/2011 - 08/2012. *Project Leader.* Appointed to conduct an environmental impact assessment (EIA) for the establishment of a cement factory, transport corridor, limestone quarries and associated infrastructure in Saldanha Bay to facilitate environmental, waste, and atmospheric emissions licence approvals from the requisite authorities. Responsible for project management, client and authority liaison, coordination of technical information and specialists inputs, management of public processes, EIA and EMP report compilation. Involved for 7.56 person-months. (AfriSam).

Bitou environmental management framework (Western Cape Province, South Africa) 02/2011 - 12/2011. *Task leader.* The project entailed the compilation of a combined environmental management framework and area based plan for Plettenberg Bay and surrounds to guide the implementation of a Neighbourhood Development Programme Grant funded by National Treasury. Responsible for project management, coordination of specialist input, client and authority liaison and management of public processes. Involved for 0.35 person-months. (Bitou Local Municipality (BLM)).

Emergency desalination plant for Mossel Bay: National Environmental Management Act S24G (NEMA) (Western Cape Province, South Africa) 05/2010 - 01/2011. *Environmental Assessment Practitioner.* The Mossel Bay Local Municipality appointed Aurecon to undertake an environmental impact assessment (EIA), which is required by Act 107 of 1998 of the National Environmental Management Act (NEMA), to assess the potential impacts related to the construction and operation of a 15MI/day emergency desalination plant in the Voorbaai area. Aurecon was responsible for consultation with the authorities throughout the environmental impact assessment (EIA) to confirm that all potential issues were identified; for the compilation of a report that provided a detailed description of the potential impacts associated with the development, and the findings; an evaluation of the potential impacts; and recommendations regarding mitigation and the way forward. Responsible for project management, review of environmental impact assessment (EIA) and environmental management plan (EMP) reports. Involved for 0.25 person-months. (Mossel Bay Local Municipality).

Etosha National Park infrastructure upgrade (Oshikoto, Namibia) 04/2010 - 11/2010. *Consulting Team Member.* The purpose of the project was to provide lead consultancy services for the upgrade to the environmental and socio-economic impact assessment (ESEIA) for the proposed upgrading of infrastructure at the Ombika Gate in the Etosha National Park. Responsible for the review of specialist reports and final reporting. Involved for 0.64 person-months. (Millennium Challenge Account).

Environmental screening for the pre-feasibility study on the Great Lakes Railway (Regional) 03/2010 - 12/2011. *Consulting Team Member.* The project entailed an investigation of the potential environmental impacts associated with a high level pre-feasibility investigation of railway alignments from Zambia to Southern Sudan. Responsible for authority consultation, site inspection and review of proposed rail alignments, report on environmental constraints. Involved for 0.74 person-months. (Common Market for Eastern and Southern Africa (COMESA)).

Environmental impact assessment (EIA) for the Nacala Rail Corridor (Regional) 03/2010 - 05/2011. *Project Member.* The project entailed the completion of four environmental impact assessments (EIAs) for the upgrading of existing and the construction of new railway sections along the Nacala Corridor from the Moatize Coal Mine in Tête Province, Mozambique, through Malawi, to the Port of Nacala-a-Velha, and a new coal handling terminal. Aurecon undertook separate EIAs for each of the proposed components and was also appointed to facilitate the requisite environmental authorisations from MICOA. Responsible for client and specialist liaison, coordination of technical information, review of final reporting. Involved for 5.55 person-months. (Vale Moçambique Limitada).

Environmental impact assessment (EIA) for the Moatize Coal Mine expansion (Tete Province, Mozambique) 03/2010 - 01/2011. *Assistant Project Leader.* The project dealt with the completion of an environmental impact assessment (EIA) for the expansion of the existing Moatize Coal Mine in the Tête province in Mozambique. Aurecon was appointed to facilitate the requisite environmental authorisations for the expansion of the mine at Moatize. Responsible for client and specialist liaison, coordination of technical information, review of final reporting. Involved for 1.39 person-months. (Vale Moçambique Limitada).

Water augmentation study for the Bitou Municipality (Western Cape Province, South Africa) 10/2009 - 12/2011. *Environmental Scientist.* The proposed Wadrif 1E Dam scheme was for the augmentation of the bulk water supply to the Plettenberg Bay area. The water augmentation study for the Bitou Municipality in 2003 recommended that a section of the existing diversion pipeline from the Keurbooms River be upgraded (Phase A); that the remainder of the new pipeline be constructed (Phase B); and that a 3 million cubic metre off-channel dam be built (Phase C). Aurecon's project scope focused on the Wadrif 1E off-channel dam. The project included a basic assessment process for an emergency pipeline and the remainder of the pipeline in terms of the relevant environmental legislation. Responsible for the management of specialist EIA consultant and review of all reports. Involved for 4.46 person-months. (Bitou Local Municipality).

Social and Environmental Impact Assessment (SEIA) for the Rössing Uranium Mine Expansion Project (Erongo Region, Namibia) 09/2009 - 08/2012. *Project Member.* Rio Tinto Rössing Uranium Limited (RUL), intended to expand its operations to increase production and extend the life of the mine in order to derive the benefit of a general increase in uranium prices on the international market. The expansion project components were divided into two phases for the purposes of Aurecon's services, which entailed undertaking the Social and Environmental Impact Assessment (SEIA) of the proposed mine expansion. Aurecon's objective was to assess the environmental impacts brought about by the proposed activities, propose measures to minimise detrimental, or enhance positive, impacts, and then to present the findings to the Namibian authorities (and to the public) to consider the residual environmental consequences and issue their decision on the acceptability thereof. Responsible for providing support to the team appointed to facilitate the required environmental authorisations for the expansion of Rössing Uranium Mine, including the review of specialist reports. Responsible for the review of legislative requirements and specialist reports. Involved for 0.92 person-months. (Rössing Uranium Mine).

Design, tender compilation and contract supervision for the upgrading of the Outeniqua effluent pump station and pipeline (Western Cape Province, South Africa) 09/2009 - 08/2010. *Project Member.* This project comprised the design, tender compilation and contract supervision for the upgrading of the Outeniqua effluent pump station and pipeline. Aurecon was appointed to carry out the design, tender compilation and contract supervision. The upgrade included the addition of more aerators to the bioreactor, a Dissolved Air Flotation (DAF) unit and a sludge digester. Responsible for managing an application for amendment to an existing authorisation and facilitate public process. Involved for 0.31 person-months. (George Local Municipality).

Screening of rail alignment options (Malawi and Mozambique) 09/2009 - 09/2010. *Consulting Team*

Member. The project entailed a high level screening of rail alignment options from Mozambique through Southern Malawi, which included site inspection of various options and liaison with senior Government officials. Responsible for authority liaison, site inspection, determination of environmental constraints and screening of rail alignment options. Involved for 1.79 person-months. (Vale).

Decommissioning of board manufacturing plant in George (Western Cape Province, South Africa) 07/2009 - 06/2011. *Project Manager.* Aurecon was appointed to prepare an environmental management plan (EMP) for the decommissioning of their board manufacturing and veneering plant in George. Responsible for project management, client and authority liaison, review of final EMP report. Involved for 0.43 person-months. (Sonae Novobord).

Independent review of environmental impact assessment (EIA) applications for the Department of Environmental Affairs and Development Planning (Western Cape Province, South Africa) 04/2009 - 05/2010. *Project Leader.* The project entailed the review of environmental impact assessment (EIA) applications and appeals to assist the competent authority with the processing of backlog applications in terms of the Environment Conservation Act (Act 73 of 1989) and the National Environmental Management Act (Act 107 of 1998). Responsible for project management, client liaison, staff advisory role, review of all final submissions. Involved for 0.74 person-months. (Department of Environmental Affairs and Development Planning).

Upgrade of Hartenbos wastewater treatment works (WWTW) (Western Cape Province, South Africa) 04/2009 - 07/2009. *Project Leader.* Aurecon was appointed to facilitate the requisite environmental process to upgrade the wastewater treatment works (WWTW) at Hartenbos. Responsible for project management, client and authority liaison, review of final reports. Involved for 0.15 person-months. (Mossel Bay Municipality).

Environmental management plan (EMP) for Garden Route Casino (Western Cape Province, South Africa) 12/2008 - 04/2010. *Project Leader.* Aurecon was appointed to update the environmental management plan (EMP) to accommodate various proposed upgrades to the Casino and associated facilities. Responsible for project management, client and authority liaison, review of final report. Involved for 0.21 person-months. (Garden Route Casino (Pty) Ltd).

Pipeline for reclamation of water from Beaufort West wastewater treatment works (WWTW) (Western Cape Province, South Africa) 10/2008 - 07/2009. *Project Manager.* The purpose of the project was to facilitate the requisite environmental processes for the implementation of a wastewater reclamation plant for Beaufort West Municipality, inclusive of a waste licence and environmental authorisation. Responsible for project management, client and authority liaison, management of specialists and public processes, compilation of final reports. Involved for 1.25 person-months. (Water and Wastewater Engineering).

Upgrade of creosote treatment facility at Albertinia (Western Cape Province, South Africa) 05/2008 - 02/2010. *Project Leader.* The purpose of the project was to facilitate the upgrading of an unlicensed timber treatment works, including the formulation of EMPs, at Albertinia, Western Cape. Responsible for project management, client and authority liaison, coordination of specialist input, impact assessment, advising client's legal representatives. Involved for 3.0 person-months. (Outeniqua Pale).

Alien vegetation eradication and rehabilitation, Fancourt Estate, George (Western Cape Province, South Africa) 2008. *Project Manager.* The project entailed the formulation of an alien vegetation eradication and rehabilitation plan for the Fancourt landholding on the Malgas River. Responsible for project management, client liaison and report compilation. (Fancourt Golf and Country Estate).

Review of the biodiversity components of municipal spatial development frameworks in the C.A.P.E. domain (Western Cape Province, South Africa) 2008. *Consulting Team Member.* The aim of the project was to provide an overview of the requirements for biodiversity in spatial development frameworks (SDF), and an assessment of the current status of biodiversity in these SDFs. Responsible for the review of SDFs and final reports. (South African National Biodiversity Institute (SANBI)).

Decommissioning of creosote treatment facility at Tergniet (Western Cape Province, South Africa) 06/2007 - 04/2010. *Project Manager.* Aurecon was appointed to facilitate the relocation of Outeniqua Pale's timber treatment works, including a waste licence for the decommissioning of a site contaminated with hazardous waste and the drafting of an environment and health impact assessment on instruction from the environment management inspectorate (EMI). Responsible for project management, client and authority liaison, advising legal representatives, managing public process, compilation of final EIA, HIA and EMP reports. Involved for 0.54 person-months. (Outeniqua Pale).

Application for an atmospheric emissions licence in Albertinia (Western Cape Province, South Africa) 03/2007 - 11/2011. *Task Leader.* Appointed to facilitate an application for an atmospheric emissions licence in terms of NEM: Air Quality Act for the operation of a creosote treatment facility in Albertinia. Responsible for project management, client and authority liaison, coordination of specialist inputs and final report compilation. Involved for 0.7 person-months. (South Cape Poles).

Upgrading of Merweville wastewater treatment works (Western Cape Province, South Africa) 02/2007 - 06/2011. *Project Manager.* The project entailed the facilitation of the required environmental authorisation and waste licence for the upgrading of the wastewater treatment works in Merweville. Responsible for project management, review of final reports. Involved for 0.29 person-months. (Beaufort West Municipality).

Independent review of environmental impact assessment (EIA) applications for the Department of Economic Development, Environment and Tourism (Eastern Cape Province, South Africa) 02/2007 - 07/2010. *Project Manager.* Review of environmental impact assessment (EIA) applications to assist with the processing of backlog applications in terms of the Environment Conservation Act (Act 73 of 1989) (Cacadu Region). Responsible for project management, liaison with authorities and applicants, advising authorities on fatal flaws and policy conflicts, drafting Environmental Authorisations, training of authority staff. Involved for 9 person-months. (Department of Environmental Affairs and Tourism).

Additional units at the Open Cycle Gas Turbine Plant at Mossel Bay (Western Cape Province, South Africa) 2007. *Consulting Team Member.* The project entailed the management of a comprehensive and multi-disciplinary environmental impact assessment (EIA) process for three additional gas turbine units at the peaking generation power plant at Mossel Bay. Responsible for project management assistance, liaison with specialists, report review. Involved for 1.5 person-months. (Eskom).

Assessment of impacts from creosote treatment works at Tergniet (Western Cape Province, South Africa) 2007. *Project Manager.* Appointed to draft an environmental and health impact report in response to instructions received from the Department of Environmental Affairs and Tourism's environmental management inspectorate (EMI). (Outeniqua Pale).

George mobility strategy: Inter-urban bus terminus investigation (Western Cape Province, South Africa) 12/2004 - Date. *Consulting Team Member.* The purpose of the project was to establish a rapid transit network and an inter-urban bus terminus for George Municipality on behalf of the Provincial Government of the Western Cape (PGWC). Responsible for the advisory role on environmental constraints for implementation of public transport initiative. Involved for 0.2 person-months. (Provincial Government Western Cape).

Upgrade of water treatment works and associated infrastructure, Sedgfield (Western Cape Province, South Africa) 12/2004 - 06/2010. *Project Manager.* The purpose of the project was to undertake an environmental impact assessment to facilitate moving the Sedgfield water treatment works out of a floodplain. Responsible for managing the basic assessment reporting procedure for the moving of the water treatment works out of a flood area. Also responsible for project management, client liaison, identification and assessment of impacts. Involved for 0.75 person-months. (Knysna Local Municipality).

Assessment of plantation plans, George (Western Cape Province, South Africa) 2004. *Consultant.* The project entailed the evaluation of Woodfield Farm's existing management plans and make recommendations for optimising forestry operations. Involved for 0.5 person-months. (Woodfield Farm).

Review of environmental impact assessment (EIA) applications and appeals (South Africa) 2004 - 2006. *Principal Environmental Officer.* The project entailed reviewing environmental impact assessment (EIA) applications and appeals and drafting of environmental authorisations. Responsible for reviewing EIA Applications, advisory role to competent authority and the drafting of environmental authorisations. Involved for 40.0 person-months. (Provincial Department of Environmental Affairs and Development Planning).

Plantation environmental auditing (South Africa) 2003. *Consultant.* The project entailed the auditing of Van Rheenen Plantations for compliance with Forestry Stewardship Council (FSC) requirements. Involved for 0.1 person-months. (Natal Co-operative Timbers (NCT)).

Planning course for catchment management diploma, Port Elizabeth Technikon, George (Western Cape Province, South Africa) 2002 - 2004. *Lecturer.* The project entailed assisting the Working for Water Programme to compile and present a course in catchment management planning. Involved for 3.0 person-months. (Port Elizabeth Technikon).

Alien vegetation mapping (South Africa) 2001 - 2003. *Consulting Team Member.* Appointed to map and quantify alien vegetation status in Barrydale, Botvlei, Kamanassi and Karatara catchments. Involved for 15.0 person-months. (EnviroGIS).

Western Cape forestry land use study (Western Cape Province, South Africa) 2001. *Project Manager.* Appointed and commissioned by Department of International Development (DFID) as project leader and co-author to conduct a study on the Western Cape land forestry land use. (Department of Water Affairs and Forestry (DWAFF)).

Cedara College and Owen Sitole College, KwaZulu-Natal (South Africa) 1998 - 2002. *Lecturer.* Appointed to compile and present the forestry course. (PE Technikon and Department of Agriculture, KwaZulu-Natal).

Course presentation, Port Elizabeth Technikon, George (Western Cape Province, South Africa) 1995 - 2005. *Lecturer.* Appointed to present courses in forestry, agriculture and conservation, including forest management, environmental management, silviculture, forest economics and mensuration. (Port Elizabeth Technikon).

Proprietor of Southern Cape Environmental Services (South Africa) 1992 - 2004. *Consultant.* The project entailed the compilation of a number of environmental management plans (EMPs) and environmental assessments and evaluations for a variety of developments in the Southern Cape, mapping soils of various Southern Cape forestry plantations and indigenous forests for CSIR, SAFCOL, DWAFF and private companies, for productivity and planning purposes, and the sampling of river water for analysis by Stellenbosch University: Department of Soil Science. Responsible for financial management, project management, report compilation and client liaison.

Mapping of soils for forest planning, Department of Water Affairs and Forestry (DWAFF), Southern Cape (South Africa) 1988 - 1992. *Consulting Team Member.* As part of function within the employ of the CSIR, mapped extensive soil bodies within the Southern Cape catchments for productivity evaluation and species choice.

Education

2010 - : Masters of Philosophy: Environmental Law, Nelson Mandela Metropolitan University
Date (NMMU), South Africa
1999 : BTech (Forestry), Port Elizabeth Technikon, Saasveld George, South Africa
1989 : NDip (Forestry), Port Elizabeth Technikon, Saasveld George, South Africa

Career enhancing courses

0 : Geography I, UNISA
0 : Linear Programming I, UNISA
0 : Bosch Model for Wetland Delineation, CSIR, Pretoria, South Africa
0 : Sustainable Coastal Livelihoods, IDL Group
0 : Introduction to ArcGIS 9 (Modules I & II), GISCOE
0 : Environmental Law for Environmental Managers, North-West University (NWU), South Africa
0 : Conflict Resolution, Centre for Conflict Resolution (CCR), Cape Town, South Africa
0 : Advanced Project Management, CSIR, Pretoria, South Africa
0 : Project Management, CSIR, Pretoria, South Africa
0 : Entrepreneurship, Innovation and Creative Thinking, CSIR, Pretoria, South Africa

Languages

	Reading	Writing	Speaking
English	Excellent	Excellent	Excellent
Afrikaans	Good	Good	Good

Honours and awards

Salon International de l'Artisanat de Ouagadougou, Burkina Faso: finalist 2000

Publications

Norman CW, 2001. "Western Cape Forestry Land Use Study". Project Leader and Co-author, commissioned by DFID for DWAF.

Norman CW, Schafer GN, 1991. "Southern Cape Land Type Manual". Assisted with the compilation, CSIR Report FOR 22.

Norman CW, 1991. "Rural Reconstruction: Assessment and Recommendations in the Herschel District, Transkei". Co-author, CSIR Report FOR 1148.

Referees

Company	Contact Person	Telephone nr.
Afrisam (South Africa) (Pty) Ltd	Claudene Moorgas	+27 (0)11 767 7231 / +27 (0)83 703 5658
South Cape Poles	Elvin Roelofse	+27 (0)28 735 1391 / +27 (0)84 501 5838