

Annexure A
EAP declaration and CVs

**APPENDIX 1
DECLARATION OF THE EAP**

I, Charles Norman, declare that –

- I act as the independent environmental assessment practitioner in this application;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I will take into account, to the extent possible, the matters listed in Regulation 13 of the Regulations when preparing the application and any report relating to the application;
- I undertake to disclose to the applicant and the Competent Authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the Competent Authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the Competent Authority, unless access to that information is protected by law, in which case it will be indicated that such information exists and will be provided to the Competent Authority;
- I will perform all obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I am aware of what constitutes an offence in terms of Regulation 48 and that a person convicted of an offence in terms of Regulation 48(1) is liable to the penalties as contemplated in Section 49B of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Regulations;



Signature of the environmental assessment practitioner

Aurecon South Africa (Pty) Ltd

Name of company:

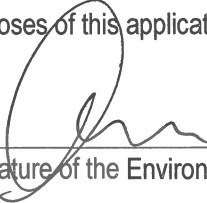
Date

9/9/2019

Date

UNDERTAKING UNDER OATH/ AFFIRMATION

I, Charles Norman, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.



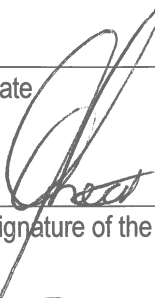
Signature of the Environmental Assessment Practitioner

Aurecon South Africa (Pty) Ltd

Name of Company

Date 9/9/2019

Date



Signature of the Commissioner of Oaths

2019/09/09

Date

.....
JOUBERT THEART
COMMISSIONER OF OATHS
PROJECT MANAGER
AURECON SOUTH AFRICA (PTY) LTD
SUITE 201, SECOND FLOOR, BLOEMHOF BUILDING
65 YORK STREET, GEORGE 6530
REF.: 9/1/8/2 GEORGE



Charles Norman

Environmental Specialist

Qualifications

MPhil: Environmental Law

BTech Forestry

NDip Forestry

Member, International Association for Impact Assessment South Africa (IAIASa)

Specialisation

Environmental assessments

Years in industry

30

Charles is a principal environmental practitioner with three decades' experience in environmental services. His 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 in Mozambique and Malawi, where he managed a team of up to 80 practitioners, specialists and technical advisors.

He has worked extensively in rural Africa on a variety of environmental assessments and environmental planning assignments for a range of local and internationally funded public and private sector projects. His experience is predominantly related to mining, energy, large infrastructure and manufacturing projects in Southern and East Africa as well as Australia. He also provides advice to in-house engineering teams and oversees the appointment and management of external EIA consultants when required.

In addition, he has extensive experience in various aspects of environmental management, including soil and plant mapping, EIAs, environmental auditing and reviews. He spent a number of years with the Department of Environmental Affairs and Development Planning (DEA&DP), during which time he was responsible for reviewing and evaluating EIAs and appeals as well as advising the competent authority and the minister on law enforcement and environmental management matters.

Charles holds a Master of Philosophy degree in Environmental Law from the University of Cape Town in South Africa. He also obtained a Bachelor of Technology in Forestry from the Port Elizabeth Technikon (now Nelson Mandela Metropolitan University) in 1999.

Experience

Closure and Rehabilitation of Kerosene Vale Ash Repository (KVAR) Stage 2 (New South Wales, Australia) 06/2018 – 07/2018. Phase leader.

Aurecon was appointed by EnergyAustralia which owns and operates Kerosene Vale Ash Repository (KVAR) Stage 2 to undertake an Environmental Assessment to support an application under the former Section 75W of the Environmental Planning and Assessment Act 1979 (EP&A Act) to modify PA 07_0005 to allow for the proposed closure and rehabilitation of KVAR Stage 2. This would occur as part of the rehabilitation of the wider Wallerawang Ash Repository. Responsible for the coordination of Noise and Vibration, Visual, Traffic and Air Quality desktop studies. Involved for 0.5 person-months. (EnergyAustralia).



Lonsdale Sewer Augmentation Project. (Melbourne, Victoria, Australia) 07/2018 – 09/2018. Phase Leader.

City West Water (CWW) engaged Aurecon to undertake a planning approvals assessment for Stage 2A of a four stage CBD sewer augmentation project (the Project). The Project includes the design and construction of a new outlet sewer along Lonsdale Street, between Spencer Street and Elizabeth Street. Responsible for the Environmental Risk Assessment. Involved for 0.25 person-months. (City West Water).

Mossel Bay Upgrading of Informal Settlements Programme (UISP). (Western Cape Province, South Africa) 01/2017 – 07/2018. Phase Leader.

The Mossel Bay Municipality appointed Aurecon to provide project management services for informal settlement upgrading in the Local Municipality via the UISP, as a follow on to the National Upgrading Support Programme (NUSP). Aurecon's scope of works included the project planning, procurement of requisite planning and environmental permissions and implementation oversight for 22 settlements. Responsible as phase leader for the Environmental Impact Assessment component, included managing specialist input and facilitating Environmental Authorisations. Involved for 1.5 person-months. (Mossel Bay Municipality).

Aga Khan Hospital Kampala, Kampala, Uganda, Aga Khan University Hospital (AKUH), 09/2016 - 06/2020, Reviewer

Aga Khan University Hospital (AKUH) intends to develop a 600-bed hospital on a 60 acre site at the junction of Jinja and New Port Bell Rd in Nakawa, Kampala. The initial phase of the project known as the "Launch Phase" will be developed on a 7 – 10 acre portion of the site and will consist of a 50-bed hospital with an estimated 14 300 m² gross building area. In terms of the scope of works, the launch phase will consist of acute bed units; intensive care units; high-dependency units; surgical suites; imaging suites; cardiac catheterization ("cath") laboratory; as well as labour and delivery suites. Aurecon will be providing full engineering services including geotechnical; civil; structural; wet services; fire safety and protection; mechanical; electrical; electronic (ICT, fire detection, audio visual and security) and acoustics; environmentally sustainable design (ESD) monitoring and management, provision of cost estimates and BOQs. Responsible for review of project reporting and liaison with sub-consultants.

Environmental impact assessment for Penhill greenfields development project, Western Cape Province, South Africa, Provincial Government of the Western Cape (PGWC): Department of Human Settlements, 12/2016 - 06/2018, Project Leader

The Department of Human Settlements is establishing a housing development to cater for approximately 8 000 units as part of the Southern Corridor initiative to upgrade informal settlements within the City of Cape Town. Aurecon was appointed to undertake an environmental impact assessment (EIA) for this greenfields housing development. Responsible as project leader.

Design of Mizingani seawall and promenade, Phase IIA, Zanzibar City, Zanzibar, Tanzania Ministry of Finance, 12/2013 - 05/2018, Environmental Control Officer (ECO)

The Revolutionary Government of Zanzibar (RGoZ), through its Zanzibar Urban Services Project (ZUSP), appointed Aurecon to lead a consortium of six consultancy companies for the design of the 340 m-long vertical seawall, with a 5 m-wide sea reclamation, along Mizingani Road. Based on design work completed under the Aga Khan Trust for Culture's (AKTC's) technical support, Aurecon's scope of work included detailed design of the seawall and promenade; the preparation of construction drawings, specifications, contract packages and tender documents; building condition assessment and review of the environmental and social management plan (ESMP). Responsible for auditing the site to ensure adequate implementation of environmental controls.



Upgrading of DR1609 and portion of DR01625, Western Cape Province, South Africa, Provincial Government of the Western Cape (PGWC): Department of Transport and Public Works, 12/2005 - 12/2017, Environmental Specialist

Aurecon was appointed to undertake design and authorisation services for the upgrading of the DR1609 and a portion of DR01625 in Rondevlei, Western Cape, which is adjacent to the Garden Route National Park and crosses within a Ramsar protected wetland. The scope of works included the preparation of an environmental impact assessment (EIA). Responsible as project leader for the EIA component, including leading the compilation of the EIA and coordinating specialist inputs.

Mossel Bay NUSP participatory based planning support, Western Cape Province, South Africa, Department of Human Settlement (DHS), 08/2015 - 11/2017, Environmental Specialist

The National Department of Human Settlements appointed Aurecon to provide participatory based planning support for informal settlement upgrading in Mossel Bay Local Municipality via the National Upgrading Support Programme (NUSP). Aurecon's scope of works included the production of an assignment implementation plan, upgrading plans and sustainable livelihoods programmes for 18 settlements, community capacity building programme, and a skills transfer report. Responsible as project leader for the screening of environmental constraints and preparation of applicability checklists for the competent environmental authority.

Upgrading of Plettenberg Bay Airport, Western Cape Province, South Africa, Bitou Local Municipality, 09/2016 - 06/2017, Environmental Specialist

Bitou Municipality intends to upgrade the Plettenberg Bay Airport in the Western Cape Province, including adding additional infrastructure and hangars to comply with Civil Aviation Authority (CAA) regulations. Responsible for compilation of an environmental constraints analysis.

Proposed hydropower station and associated infrastructure at Riemvasmaak, Northern Cape Province, South Africa, Riemvasmaak Hydro Electric Power (Pty) Ltd, 02/2012 - 06/2017, Technical Advisor

Aurecon was appointed to provide the lead consultancy services for the environmental impact assessment (EIA) for the proposed 25 MW hydropower station at Riemvasmaak on the Orange River, adjacent to the Augrabies National Park. Responsible for providing advice on legal procedure and technical project aspects.

Perdekraal East Wind Farm environmental and social due diligence (ESDD), Western Cape Province, South Africa, African Infrastructure Investment Managers (AIIM), 11/2016 - 04/2017, Project Leader

In order to consider providing funding for the development of the Perdekraal East Wind Farm, the client required the undertaking of an environmental and social due diligence (ESDD) study, including an environmental and social action plan (ESAP), to ensure that environmental authorisations in place were compliant with the requirements of the IFC. Responsible for the compilation of the ESDD and ESAP and coordination of specialist inputs.

Curepipe Point wind farm assessment, Mauritius, Southern Energy Holdings, 05/2016 - 06/2016, Environmental Specialist

Aurecon was appointed to undertake a fatal flaw review of a 29 MW wind energy development near the town of Curepipe in Mauritius. Responsible for the review of an environmental impact assessment (EIA) study as well as the identification and evaluation of environmental risks.

Environmental and social impact assessment (ESIA) for the Makambako Wind Farm, Njombe Region, Tanzania, Windlab Limited, 11/2015 - 03/2017, Project Leader

Windlab Tanzania SPV 1 Limited (Windlab) want to construct a wind farm and associated infrastructure, including a transmission line (project referred to as the Miombo Hewani Wind Farm) with a generation capacity of between 100 MW and 300 MW north of Makambako in the Njombe Region, Tanzania. Aurecon



was appointed to undertake the requisite environmental process on behalf of Windlab as required in terms of the Environmental Management Act (Act 20 of 2004) (EMA). Responsible for leading the team of specialists and sub-consultants to develop an IFC compliant ESIA.

Working for Wetlands Plan 2014 - 2017, National, South Africa, South African National Biodiversity Institute (SANBI), 06/2013 - 09/2016, Environmental Advisor

Aurecon was appointed in 2010 for a three year cycle for the design, planning, environmental, project and risk management of the South African Government's Working for Wetlands Programme, which is a nationally run initiative by the South African National Biodiversity Institute (SANBI). The programme's objective is to rehabilitate damaged wetlands and to protect wetlands throughout South Africa, with an emphasis on complying with the with an emphasis on complying with the principles of the expanded public works programme (EPWP) through employing only local small, medium and micro enterprises (SMMEs). Responsible for a review and giving advice on legal process requirements.

Environmental impact assessment (EIA) for the Mtwara super base, Mtwara Region, Tanzania, Schlumberger Seaco Inc, 01/2015 - 06/2016, Project Leader

Schlumberger wished to construct a super base within the Export Processing Zone (EPZ) in Mtwara to serve all land and offshore operations in the region. Aurecon was appointed to undertake the environmental impact assessment (EIA). Responsible for client liaison and coordination of sub-consultants as well as review.

Kinangop Wind Farm Phase 1A status review and risk assessment, Nakuru, Kenya, Kinangop Wind Park, 11/2015 - 03/2016, Environmental Specialist

Following termination of the engineering, procurement and construction (EPC) contract, Aurecon was appointed to assess the project status and risks associated with remobilising the Kinangop Wind Farm project. Responsible for environmental review.

Pre-feasibility study for Rukwa coal-to-power project, Mbeya, Tanzania, Rukwa Development Company, 11/2014 - 09/2015, Team Member

Aurecon was engaged by Kibo Mining to carry out a pre-feasibility study for a coal-fired power station to be located adjacent to an opencast coal mine in the Rukwa region of Tanzania. The study included preliminary environmental assessments of the power station and the mine, power evacuation assessment, power station design and modelling of various configurations, reporting and technical input to the project financial model. Responsible for contributing to the drafting of an environmental and social prefeasibility study.

Project information memoranda (PIM) for Mtwara Port and the Mtwara/Mikindani municipal master plan, Mtwara Region, Tanzania, Development Bank of Southern Africa (DBSA), 08/2014 - 09/2015, Environmental Process Advisor

The project entailed the development of project information memoranda (PIM) for Mtwara Port, which entailed a review of the Mtwara Port feasibility study of 2012 and other related material that would assist in the preparation of a bankable PIM. The project also involved the development of the Mtwara/Mikindani detailed municipal land use master plan to collect baseline spatial data that can assist in understanding the growth projections for the city and proposing suitable physical and social infrastructure and land uses to accommodate the growth. Responsible for liaising with the authority, coordination of sub-consultants and review.

Environmental impact assessment (EIA) for the construction of the AfriSam cement factory, Western Cape Province, South Africa, AfriSam South Africa (Pty) Ltd, 02/2011 - 09/2015, Project Leader

AfriSam was looking to enter the Western Cape market, and consequently decided to fund the construction of a cement factory and associated infrastructure. Aurecon was appointed to undertake an environmental impact assessment (EIA) process for the cement plant, mine and associated infrastructure located on Farm 1139 in the Saldanha industrial area. Services involved undertaking and managing the EIA process, traffic



impact study (TIS), surface water investigation and social impact assessment (SIA). Responsible for project management, client and authority liaison, coordination of technical information and specialists inputs, management of public processes, EIA and compilation of an environmental management plan (EMP) report.

Environmental screening of a potential wind energy site, Tanzania, Windlab Limited, 02/2015 - 04/2015, Project Leader/Technical Coordinator

Aurecon was appointed to determine the feasibility of establishing a wind energy facility (WEF) in Tanzania. As part of evaluation Aurecon was appointed to undertake a comparative environmental constraints analysis, including the biophysical, social and heritage aspects of the identified sites. Responsible for the identification and assessment of environmental constraints.

Western Cape road materials supply strategy, Western Cape Province, South Africa, Provincial Government of the Western Cape (PGWC): Department of Transport and Public Works (DTPW), 06/2008 - 03/2015, Principal Environmental Practitioner

Increasing pressures from tightened environmental legislation have resulted in lengthy waiting periods (about 18 months) for identifying required material sources. The wait is also caused by investigation phases, getting approval from the Mineral Resources and Petroleum Development Act (DMR), the Department of Environmental Affairs and Development Planning (DEADP), the National Environmental Management Act (NEMA) and the Land Use Planning Ordinance (LUPO). Aurecon was responsible for prospecting suitable road making materials, sampling, testing, and identifying technically suitable sources to be used for both identified projects and as strategic pits, as well as for getting all the required approvals. Responsible for planning of authorisation processes and review of submissions. Also responsible for liaison with authorities and partner consultants.

Upgrading of Distillery Road in Wellington, Western Cape Province, South Africa, Drakenstein Local Municipality, 10/2013 - 02/2015, Project Manager

The project entailed a basic environmental impact 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.

George mobility strategy for the improvement of public transport, Western Cape Province, South Africa, Provincial Government of the Western Cape (PGWC): Department of Transport and Public Works (DTPW), 09/2003 - 02/2015, Consulting Team Member

This broad based mobility strategy project, which is centred on the improvement of public transport in the George municipal area, is one of many national interventions to upgrade public transport in South Africa. The objective is the transformation of the existing bus and minibus taxi industry into a single entity contracted to the local authority to provide scheduled, subsidised public transport services. Work has included detailed operational design and costing; contract development as well as planning for the upgrading of road and other infrastructure, including a bus stop, a temporary bus depot, and an inter-urban bus station. The project has also comprised a considerable amount of engagement with the local bus and minibus industry representatives as well as broad based public consultation. Responsible for the advisory role on environmental constraints for implementation of public transport initiative.

Feasibility study for the Knysna-Bitou water supply scheme, Western Cape Province, South Africa, Eden District Municipality, 01/2013 - 12/2014, Project Member

The project involved the identification of the water resource and bulk water requirements of the local municipalities of Knysna and Bitou for the next 20 years and exploring the technical and economic viability of integrating the bulk water supply systems serving the towns of Knysna and Plettenberg Bay. Responsible for the identification and evaluation of environmental constraints for the screening of options exercise.



Environmental constraints analysis of potential wind energy sites near Aberdeen, Eastern Cape Province, South Africa, Juwi Renewable Energies (Pty) Ltd, 06/2013 - 08/2014, Project Leader/Technical Coordinator

The client wished to determine the feasibility of establishing a wind energy facility at Aberdeen in the Eastern Cape. As part of evaluation Aurecon was appointed to undertake a comparative environmental constraints analysis, including the biophysical, social and heritage aspects of the identified sites. Responsible for contributing to identification and assessment of environmental constraints. Also responsible for constraints identification and evaluation as well as a review.

Water augmentation study for the Bitou Local Municipality, Western Cape Province, South Africa, Bitou Local Municipality, 10/2009 - 03/2014, Environmental Scientist

The Wadrif 1E Dam scheme was for the augmentation of the bulk water supply to the Plettenberg Bay area. Aurecon's project scope focused on the Wadrif 1E off-channel dam and included a basic assessment process for an emergency pipeline and the remainder of the pipeline in terms of the relevant environmental legislation. An application for a licence to store was made in terms of the National Water Act, 1997 (NWA) and a forestry permit application for a drilling site investigation for the Wadrif 1E Dam site and for dam construction. Responsible for the management of specialist environmental impact assessment (EIA) consultant and review of all reports.

Independent review of environmental impact assessment (EIA) applications, Western Cape Province, South Africa, Department of Environmental Affairs and Development Planning (DEA&DP), 03/2011 - 12/2013, Task Leader

The purpose of the project was to review contentious environmental impact assessment (EIA) applications in terms of the National Environmental Management Act 107 of 1998 (NEMA) to support authority decision making. Responsible for project management, client liaison, advisory role to team members and review and coordination of final products.

Pilot catchment management plan: Kyoga water management zone, Kampala, Uganda, The World Bank, 12/2012 - 12/2013, Co-author of report

Aurecon was appointed to prepare a pilot catchment management plan (CMP) for the Awoja Catchment. Major social and environmental issues within the catchment area were identified early in the process as critical informants to catchment management planning so these can be integrated into the planning process at an early stage. The rapid strategic environmental assessment (RSEA) focussed on identifying the issues and conditions in the catchment related to water and natural resources that are likely to be a major influence and that might represent important risks, as linked to potential water resource development options. Responsible for contributing to the coordination of and reporting on implementation options.

Update to rapid strategic environmental assessment (RSEA): development of a pilot catchment management plan (CMP), Kampala and Mbale, Uganda, Ministry of Water and Environment (Uganda), 12/2012 - 11/2013, Project Member

This water management and development project (WMDP) for Uganda comprised the development of a pilot catchment management plan (CMP) in the Kyoga water management zone (WMZ). The CMP outlines the changes required and the benefits of these changes towards ensuring sustainable development and the equitable distribution of the resulting benefits. The integrated water resources management-based (IWRM-based) CMP provides an integrated strategy for the sustainable water resource management in the pilot Kyoga WMZ catchment. Responsible for the coordination of and reporting on implementation options.



Operational environmental management plan (EMP) for Shoprite Checkers, Western Cape Province, South Africa, Shoprite Checkers, 04/2010 - 07/2013, Task Leader

The project included the compilation of an operational environmental management plan (EMP) to meet the local municipality's requirements for the new shopping centre at Sandown Road in Cape Town. Responsible for project management, client and authority liaison and the compilation of EMP report.

Environmental impact assessment (EIA) for the Riemvasmaak Hydropower Station, Northern Cape Province, South Africa, Mulilo Renewable Energy (Pty) Ltd (MRE), 12/2011 - 06/2013, Technical Advisor

Aurecon was appointed to submit a proposal to undertake an environmental impact assessment (EIA) for the construction of a hydropower station on the Riemvasmaak Farm north of Augrabies Falls National Park. Services provided included legislation and policy review, strategic review, public consultation, EIA coordination and facilitation and various specialist disciplines. Responsible for providing advice on the legal procedure and technical project aspects.

Exploratory drilling environmental management plan (EMP), Tete Province, Mozambique, Coal India Africana Limitada (CIAL), 02/2012 - 04/2013, 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.

Environmental management plans (EMPs) for coal bed methane prospecting activities, Tete Province, Mozambique, Rio Tinto Coal Mozambique (RTCM), 07/2012 - 02/2013, 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 licensing of the activities. Responsible for project management, coordination of information and team inputs.

Social and environmental impact assessment (SEIA) for the Rössing Uranium Mine expansion project, Erongo Region, Namibia, Rössing Uranium Mine, 09/2009 - 08/2012, Project Member

Rössing Uranium wanted to obtain environmental authorisations for the expansion of the mine to increase production and extend the life of the mine. Aurecon undertook a social and environmental impact assessment (SEIA) to determine the environmental impacts brought about by the proposed activities, proposed measures to minimise detrimental impacts or enhance positive impacts and presented the findings to the Namibian authorities. The SEIA included two primary product deliverables, namely the environmental scoping report (ESR) and the subsequent SEIA report. Responsible for providing support to the team appointed to facilitate the required environmental authorisations for the expansion of the Rössing Uranium Mine, including the review of legislative requirements and specialist reports.

Bankable feasibility study (BFS) for a Zuma Energy project, Kogi State, Nigeria, Zuma Energy Nigeria Limited, 10/2011 - 01/2012, Project Leader

Zuma Energy Nigeria Ltd was planning to construct and operate a 1 200 MW coal-fired power station along the Niger River. Aurecon prepared a bankable feasibility study (BFS) 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 by conducting an environmental and social impact assessment (ESIA) to determine adequacy and compliance to the Nigerian Statutory requirements and the World Bank's standard Equator Principles (EPs) and to a level suitable for financial closure. Responsible for the review of final report against World Bank standards and EPs.



Independent review of environmental impact assessment (EIA) for report, KwaZulu-Natal Province, South Africa, Knight Piésold, 11/2011 - 12/2011, Consulting Team Member

The purpose of the project was to review the environmental impact assessment (EIA) process undertaken by Knight Piésold for a bulk water supply pipeline in KwaZulu-Natal. Responsible for the review of impact assessment methodology.

Pre-feasibility study on the Great Lakes Railway, Burundi, Rwanda, Tanzania, Uganda and Zambia, Common Market for Eastern and Southern Africa (COMESA), 03/2010 - 12/2011, Consulting Team Member

The project entailed a pre-feasibility study to improve port, inland waterway and rail inter-connectivity in the Great Lakes Region (Lake Kivu, Lake Edward, Lake Tanganyika, Lake Victoria and Lake Albert) based on several transportation constraints experienced. The primary objective was reduced transportation costs for the provision of rail links to connect existing rail networks with each other, and the development of the inland water transport services across lakes within the region. The work included a pre-feasibility study that consisted of resource mapping, traffic forecasts, alignment surveys, engineering cost estimates, an environmental impact assessment (EIA), institutional review, financing mechanisms review and economic evaluation and feasibility study. Responsible for authority consultation, site inspection and review of proposed rail alignments and reporting on environmental constraints.

Application for an atmospheric emissions licence (AEL) in Albertinia, Western Cape Province, South Africa, South Cape Poles, 03/2007 - 11/2011, Task Leader

The project entailed facilitating an application for an atmospheric emissions licence (AEL) in terms of the National Environment Management (NEM): Air Quality Act (No 39 of 2004) 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.

Environmental impact assessment (EIA) for the Moatize Coal Mine expansion, Tete Province, Mozambique, Vale Moçambique Limitada, 03/2010 - 09/2011, Assistant Project Leader

The aim of the project was to expand operations at Moatize Coal Mine due to the favourable global market for coal. Aurecon was appointed to undertake separate environmental impact assessments (EIAs) for each of the proposed components of the project. The particular work plan addressed EIA Package 1, which was for the proposed expansion of the mine at Moatize and related infrastructure. Responsible for client and specialist liaison, coordination of technical information and review of final reporting.

Environmental impact assessment (EIA) for the Nacala Rail Corridor, Malawi and Mozambique, Vale Moçambique Limitada, 03/2010 - 09/2011, 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 Mozambique, through Malawi, to the Port of Nacala, and a new coal handling terminal. This particular work plan addressed Packages 2 to 5, which were for the components of the Nacala Logistics Corridor. Responsible for client and specialist liaison, coordination of technical information and review of final reporting.

Decommissioning of the Sonae Novobord board manufacturing plant in George, Western Cape Province, South Africa, Sonae Novobord, 07/2009 - 07/2011, Project Leader/Manager

Aurecon was appointed to prepare an environmental management plan (EMP) for the decommissioning of Sonae Novobord's board manufacturing and veneering plant in George. Responsible for project management, client and authority liaison and review of the final EMP report.



Upgrading of Merweville wastewater treatment works (WWTW), Western Cape Province, South Africa, Beaufort West Local Municipality, 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 (WWTW) in Merweville. Responsible for project management, review of final reports.

Emergency desalination plant for Mossel Bay, Western Cape Province, South Africa, Mossel Bay Local Municipality, 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 15Ml/day emergency desalination plant in the Voorbaai area. Aurecon was responsible for consultation with the authorities throughout the 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 EIA and environmental management plan (EMP) reports.

Environmental impact assessment (EIA) for infrastructure upgrades at the Etosha National Park, Oshikoto Region, Namibia, Millennium Challenge Account (MCA), 04/2010 - 11/2010, Consulting Team Member

The project entailed the completion of two environmental impact assessments (EIAs), including environmental management plans (EMPs), for the construction of staff housing and management centres at the Ombika and Galton gates as well as the Okaukuejo and Otjovasandu villages in the Etosha National Park. The aim was to improve the quality of infrastructure to attract senior management to the park to ensure that the park retains its status as a premier tourist destination. Responsible for the review of specialist reports and final reporting.

Pre-feasibility (FEL 2) social and environmental screening of rail corridor alternatives through Malawi, Southern Region, Malawi, Vale Moçambique Limitada, 09/2009 - 09/2010, Principal Environmental Practitioner

The project involved a pre-feasibility (FEL 2) level investigation into alternative routes for the proposed railway alignment section between Moatize in Mozambique and the Nkaya Junction in Malawi. Aurecon prepared the social and environmental screening report, which provided a background to the methodology for environmental (social and biophysical) screening. A high-level impact study and comparative assessment of alternative alignments were undertaken to determine the most environmentally responsible and sustainable options. Responsible for gathering field data and contribution to the screening report.

Independent review of environmental impact assessment (EIA) applications for the Department of Economic Development, Environment and Tourism, Eastern Cape Province, South Africa, Department of Economic Development, Environmental Affairs and Tourism, 02/2007 - 07/2010, Project Manager

The project entailed the 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 and training authority staff.

Relocation of the Sedgfield water treatment works (WTW) and associated infrastructure, Western Cape Province, South Africa, Knysna Local Municipality, 12/2004 - 06/2010, Project Manager

The purpose of the project was to undertake an environmental impact assessment (EIA) to facilitate the relocation of the Sedgfield water treatment works (WTW) out of a floodplain. Responsible for managing the



basic assessment reporting procedure for the relocation. Also responsible for project management, client liaison and the identification and assessment of impacts.

Independent review of environmental impact assessment (EIA) applications for the Department of Environmental Affairs and Development Planning (DEA&DP), Western Cape Province, South Africa, Department of Environmental Affairs and Development Planning (DEA&DP), 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 107 of 1998 (NEMA). Responsible for project management, client liaison, staff advisory and review of all final submissions.

Decommissioning of creosote treatment facility at Tergniet, Western Cape Province, South Africa, Outeniqua Pale (Pty) Ltd, 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 environmental and health impact assessment (EHIA) on instruction from the Environmental Management Inspectorate (EMI). Responsible for project management, client and authority liaison, advising legal representatives, managing public process and the compilation of the final EHIA and environmental management plan (EMP) reports.

Environmental management plan (EMP) for Garden Route Casino, Western Cape Province, South Africa, Garden Route Casino (Pty) Ltd, 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 and review of the final report.

Upgrading of creosote treatment facility at Albertinia, Western Cape Province, South Africa, Outeniqua Pale (Pty) Ltd, 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 environmental management plans (EMPs), at Albertinia, Western Cape. Responsible for project management, client and authority liaison, coordination of specialist input, impact assessment and, advising the client's legal representatives.

Upgrading of the Outeniqua effluent pump station and pipeline, Western Cape Province, South Africa, George Local Municipality, 09/2009 - 08/2010, Project Member

The growth of the residential sectors in George necessitated the upgrading of the existing regional wastewater treatment works (WWTW). Aurecon was appointed for the design, tender compilation and contract supervision for the upgrading of the plant from a capacity of 9.3 Ml/day to 15 Ml/day. 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 facilitating the public process.

Upgrading of Hartenbos wastewater treatment works (WWTW), Western Cape Province, South Africa, Mossel Bay Local Municipality, 04/2009 - 07/2009, Project Leader

Aurecon was appointed to facilitate the requisite environmental process for the upgrading of the wastewater treatment works (WWTW) in Hartenbos. Responsible for project management, client and authority liaison and review of the final reports.



Environmental processes for the Beaufort West wastewater reclamation plant, Western Cape Province, South Africa, Water & Wastewater Engineering, 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 and the compilation of final reports.

Alien vegetation eradication and rehabilitation, Fancourt Estate, George, Western Cape Province, South Africa, Fancourt Golf and Country Estate, 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.

Review of the biodiversity components of municipal spatial development frameworks (SDFs) in the C.A.P.E. domain, Western Cape Province, South Africa, South African National Biodiversity Institute (SANBI), 2008, Consulting Team Member

The aim of the project was to provide 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 the review of SDFs and final reports.

Additional units at the open cycle gas turbine (OCGT) plant in Mossel Bay, Western Cape Province, South Africa, Eskom, 01/2005 - 01/2006, 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 in Mossel Bay. Responsible for project management assistance, liaison with specialists and report review.

Review of environmental impact assessment (EIA) applications and appeals, South Africa, Provincial Department of Environmental Affairs and Development Planning (DEA&DP), 2004 - 2006, Principal Environmental Officer

The project entailed reviewing environmental impact assessment (EIA) applications and appeals and drafting environmental authorisations. Responsible for reviewing EIA applications, advisory role to competent authority and the drafting of environmental authorisations.

Assessment of plantation plans, George, Western Cape Province, South Africa, Woodfield Farm, 2004, Consultant

The project entailed the evaluation of Woodfield Farm's existing management plans and making recommendations for optimising forestry operations.

Proprietor of Southern Cape environmental services, Western Cape Province, 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. This included the mapping of soils of various Southern Cape forestry plantations and indigenous forests for the Council for Scientific and Industrial Research (CSIR), South African Forestry Company Ltd (SAFCOL), the Department of Water and Sanitation (DWS) and private companies, for productivity and planning purposes as well as 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.

Plantation environmental auditing, Western Cape Province, South Africa, NCT Forestry Co-operative Limited (NCT), 2003, Consultant

The project entailed the auditing of Van Reenen plantations for compliance with Forestry Stewardship Council (FSC) requirements. Responsible for environmental auditing.



Invasive vegetation mapping, Western Cape Province, South Africa, EnviroGIS, 2001 - 2003, Consulting Team Member

Appointed to map and quantify invasive vegetation status in the Barrydale, Botvlei, Kamanassi and Karatara catchments.

Western Cape forestry land use study, Western Cape Province, South Africa, Department of Water and Sanitation (DWS), 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.

Mapping of soils for forest planning, Western Cape Province, South Africa, Department of Water and Sanitation (DWS), 1988 - 1992, Consulting Team Member

As part of a function while employed at the Council for Scientific and Industrial Research (CSIR), mapped extensive soil bodies within the Southern Cape catchments for productivity evaluation and species choice. Responsible for mapping soil bodies.

Curriculum vitae: Mr S NTSENGWANE

Name : **NTSENGWANE, SIMAMKELE**
Date of Birth : 13 August 1993
Profession/Specialisation : Geomorphology, Environmental and Water science
Years with Firm : 4
Nationality : South African
Years experience : 5

Key qualifications

Simamkele is currently employed as a senior environmental consultant at Aurecon. He specialises in environmental authorisation and permitting processes, natural resource management and environmental planning and feasibility related advisory services in South Africa and elsewhere in Africa. He has over three years' experience in consulting as an environmental consultant and environmental control officer (ECO) in this team.

He has a broad range of experience in the field of environmental management both in relation to report writing, advisory services and site work. He has been mostly involved in the field of wetland rehabilitation and water resource management and his technical experience includes environmental input in various Renewable energy projects, the Working for Wetlands rehabilitation programme and the preparation of Stormwater infrastructure maintenance management plans, water resource management, natural resource management, geomorphology and on-site environmental supervision and control monitoring.

Simamkele Holds a Bachelor of Science (Honours) in Environmental Geography from the Nelson Mandela Metropolitan University (NMMU), South Africa, obtained in 2014 and a Bachelor of Geography from the University of Johannesburg (UJ) obtained in 2013. In addition, Simamkele is a member of the International Association for Impact Assessment South Africa (IAIASa), Southern African Association of Geomorphologists (SAAG) and the Water Institute of South Africa (WISA).

Employment record

| | |
|-------------------|---|
| 07/2018 - Date | Aurecon, Senior Environmental Consultant |
| 04/2017 - 07/2018 | Aurecon, Environmental Consultant |
| 07/2016 - 03/2017 | Aurecon, Environmental Intern |
| 06/2014 - 02/2015 | NMCC Constructions, Graduate Environmentalist |

Experience record

Upgrading of Zandvliet wastewater treatment works (WWTW) (Western Cape Province, South Africa) 03/2014 - 06/2024. *Environmental Control Officer.* Aurecon was appointed to analyse/plan and design equipment and infrastructure for the capacity extension and refurbishment of Zandvliet wastewater treatment works (WWTW). The refurbishment includes the Maccassar pump station, and the Black-Mac screening station and pipeline. Aurecon was responsible for the documentation and procurement, and contract administration and construction supervision. The capacity of the existing works was extended through the construction of a new membrane bioreactor (MBR) plant, primary settling tanks (PSTs) and sludge dewatering facilities. The existing two 27 Ml/d conventional activated sludge (AS) plants and the 18 Ml/d MBR plant were refurbished with new mechanical equipment. A new administration building was constructed to house an upgraded supervisory control and data acquisition (SCADA) system. Responsible for conducting environmental audits to ensure compliance with the environmental management plans (EMPs) during the construction phase of the project. Involved for 0.1 person-months. (City of Cape Town).

Transaction advisory services for the Angola Namibia (ANNA) Transmission Interconnector Project (Angola and Namibia) 03/2017 - 03/2020. *Environmental Control Officer.* The project involves the provision of transaction advisory services for the Angola Namibia (ANNA) Transmission Interconnector Project feasibility study, which is a multi-disciplinary study to support an investment decision to build the interconnector. The study is being performed in three phases, with interim decision points to proceed to the next phase or not. Phase 1 entails a pre-feasibility study, including concept development; Phase 2 entails feasibility to project information memorandum (PIM) and Phase 3 entails PIM to engineering, procurement and construction (EPC) and financial close-out. A fourth phase focussing on training and knowledge transfer to the Southern African Power Pool (SAPP) and two utility sponsors, the Namibian Power Corporation

(NamPower) and the Rede Nacional de Transporte de Electricidade (RNT) in Angola, is also included. Responsible for the preparation of the legislative chapter of the environmental and social impact assessment (ESIA). Involved for 0.25 person-months. (Southern African Power Pool (SAPP)).

Materials supply strategy for gravel roads (Western Cape Province, South Africa) 02/2015 - 02/2020. *Environmental Consultant/Environmental Control Officer.* Aurecon has been appointed to assist with the material supply and planning, design and control aspects for the maintenance of gravel roads in the Central Karoo and Eden District Municipalities. Services include engineering geology, environmental studies, materials source identification and project management. The contract primarily entails locating and proving suitable material sources for the re-gravelling of 300 km and maintenance activities of 45 000 km of all gravel roads in the two identified district municipalities. Member of the environmental team tasked with assisting in the initial screening of all potential material sources, determining suitable alternative borrow pit locations and selecting preferred options, applying for mineral rights in terms of the Minerals and Petroleum Resources Development Act, Act No. 28 of 2002 (MPRDA) and submitting these to the Department of Mineral Resources (DMR). Duties include compiling the draft basic assessment report (BAR) and environmental management programmes (EMPRs) to be included in term tenders for contracting work. Also involved in the Review of Environmental Control Officer reports. Involved for 0.5 person-months. (Provincial Government of the Western Cape (PGWC): Department of Transport and Public Works (DTPW)).

Needs Camp bulk water supply scheme, Phase 5 (Eastern Cape Province, South Africa) 12/2008 - 12/2019. *Environmental Control Officer (ECO).* Aurecon has been appointed for the design of the water supply scheme and environmental monitoring for the fifth phase of the Needs Camp project. This includes the design and project management of the Mdantsane/Bufferstrip pipeline/bulk water supply to the Needs Camp, as well as the Ncera system and Ward 18 bulk water supply. Responsible for conducting environmental audits to ensure compliance with the environmental management plans (EMPs) during the construction phase of the project. Involved for 0.75 person-months. (Buffalo City Metropolitan Municipality (BCMM)).

Parys cemetery expansions (Western Cape Province, South Africa) 04/2019 - 12/2019. *Environmental Consultant.* Aurecon was appointed for the provision of professional engineering and advisory services for the proposed expansion of the Parys cemetery, Paarl. Responsible for environmental input in the feasibility study to select the best possible option for the cemetery expansion. Also responsible for the amendment application to the existing environmental authorisation. Involved for 0.11 person-months. (Drakenstein Local Municipality).

Environmental impact assessment (EIA) for the Impofu wind farms and grid connection (Eastern Cape Province, South Africa) 08/2017 - 10/2019. *Environmental Consultant.* The project entails developing up to three wind farms on an identified site as part of the proposed Impofu Wind Energy Facility (WEF), as well as an approximately 120 km, 132 kV grid connection, including substations between the site and Port Elizabeth. Services include preparing a screening and gap analysis report for the proposed wind farms and grid connection, as well as undertaking a multi-criteria decision making (MCDM) model workshop. Environmental impact assessments (EIAs) will be undertaken for each of the proposed wind farms and a basic assessment report (BAR) will be undertaken for the grid connection and associated infrastructure to connect the wind farms to one of two existing substations in the Nelson Mandela Bay municipal area. Responsible for assisting the lead environmental practitioner with the scoping report write-up and integration of specialist studies into the scoping report as well as for the compilation of three non-technical summaries for the scoping reports. Involved for 2 person-months. (Red Cap Energy (Pty) Ltd (Red Cap)).

Langerug 20 MI Reservoir and Transhex water supply pipeline (Western Cape Province, South Africa) 08/2016 - 06/2019. *Environmental Control Officer.* This project entailed the design of 7.1 km of DN 500 ductile iron pipeline towards the future Transhex development as well as a 20 MI dome roof post-tensioned reservoir in the Worcester area. The project also included the upgrading of the Langerug Booster Pump Station to ensure it has sufficient capacity for the future demand of the Langerug Booster Zone. Aurecon designed a new 20 MI reservoir that can be utilised in conjunction with the existing 12 MI reservoir to supply the existing Langerug supply zone. Responsible for conducting environmental audits to ensure compliance with the environmental management plans (EMPs) during the construction phase of the project. Involved for 0.1 person-months. (Breede Valley Local Municipality).

Stormwater maintenance management plans (MMPs) for the City of Cape Town (Western Cape Province, South Africa) 06/2016 - 06/2019. *Environmental Consultant/Technical Lead.* Aurecon has been appointed to provide professional services for the preparation of stormwater maintenance management plans (MMPs) for surface and below ground infrastructure across the City of Cape Town. The aim is to ensure due environmental diligence and compliance with the environmental authorisation of the city's

stormwater maintenance programme and are to be used as a guide for operational stormwater activities, including vegetation management, erosion control, sediment management, channel enclosure, litter and debris removal as well as the construction, maintenance and expansion of minor stormwater infrastructure, maintenance of attenuation infrastructure and recreational access. Responsible for providing environmental input during the report writing of the MMPs, project management and review of the MMP in accordance with NEMA regulations, environmental screening of proposed maintenance measures against legislative requirements and environmental constraints and project management. Involved for 1.75 person-months. (City of Cape Town).

Working for Wetlands environmental planning and compliance (South Africa) 11/2016 - 06/2019. *Environmental Scientist.* Aurecon, in association with GroundTruth, was appointed to undertake planning and approval processes for the Working for Wetlands Programme for the period 2017 to 2019. The programme is mandated to rehabilitate damaged wetlands and to protect pristine wetlands, with an emphasis on complying with the principles of the Expanded Public Works Programme (EPWP) through employing only local small, medium and micro enterprises (SMMEs). Responsible for the public participation process (PPP) and coordinating consistency between all nine provincial projects. Also responsible for compiling basic assessment reports, rehabilitation plans, application forms and amendment application forms. The role also entails liaison between the entire team, including environmental assessment practitioners (in other offices) engineers, wetland ecologists, provincial assistant directors (client representatives) and implementers. Involved for 7.6 person-months. (Department of Environmental Affairs (DEA)).

National Upgrading Support Programme (NUSP) for the Sarah Baartman District Municipality (Eastern Cape Province, South Africa) 03/2016 - 03/2019. *Social Facilitator.* The National Upgrading Support Programme (NUSP) was designed to support the Department of Human Settlement (DHS) in implementing the Upgrading Informal Settlements Programme (UISP) with the objective of eventually upgrading all informal settlements in the country. This project involved undertaking an assessment and categorising the informal settlements of the Sarah Baartman District Municipality, in accordance with the NUSP. This involves developing an upgrading strategy and programme for the informal settlements in Sarah Baartman municipal area and formulating the upgrading/layout plans and sustainable livelihood frameworks for informal settlements in the region. Responsible for facilitating stakeholder engagement to ensure that community awareness is facilitated properly. Involved for 0.25 person-months. (Department of Human Settlement (DHS)).

Fire mitigation and stormwater management for the City of Cape Town (Western Cape Province, South Africa) 03/2016 - 03/2019. *Environmental Consultant.* Aurecon has been appointed to provide professional services to assist the City of Cape Town with fire mitigation measures and management and with the consolidation of the stormwater management function. This involves assessing recent fires from a stormwater risk mitigation perspective; proposing mitigation measures to urgently implement short-term and medium- to long-term interventions; assisting with construction/implementation supervision for mitigation measures for current fires; site visits; assumptions and reporting. The project also involves conceptual design for upgrading the stormwater network in Simon's Town and design options for the enclosure of the Blomvlei canal. Responsible for compiling a high-level desktop environmental sensitivity screening assessment to determine the applicability of the environmental impact assessment (EIA) regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) associated with the proposed refurbishment of the Manenberg stormwater canals. Involved for 0.25 person-months. (City of Cape Town).

Design and construction of sewer and water reticulation in Ntabankulu (Eastern Cape Province, South Africa) 07/2010 - 12/2018. *Environmental Control Officer (ECO).* Aurecon was appointed for the design and construction supervision for sewer reticulation and a 1.2 Ml wastewater treatment works (WWTW) in the town of Ntabankulu. The aim was to address the challenges faced by the Alfred Nzo District Municipality (ANDM) due to dilapidated sanitation infrastructure and water shortages in the town as well as to cater for future demand. Responsible for conducting environmental audits to ensure compliance with environmental management plans (EMPs) during the construction phase of the project. Involved for 0.75 person-months. (Alfred Nzo District Municipality (ANDM)).

Table Mountain Group (TMG) Aquifer exploratory phase (Western Cape Province, South Africa) 12/2015 - 12/2018. *Environmental Consultant/ Environmental Control Officer (ECO).* Aurecon has been appointed for the project management and conceptual infrastructure planning for the exploratory phase extension of the Table Mountain Group (TMG) Aquifer feasibility study and pilot project. The aquifer can provide large bulk water supply for local municipalities and irrigation water for agriculture in the Western and Eastern Cape. Aurecon's scope includes managing the exploration of groundwater in the aquifer system in order to establish the potential of the aquifer as a long-term water resource for the Western Cape.

Responsible for assisting the senior environmental scientist with compiling checklist applications for the Department of Environmental Affairs and Development Planning to assess the need for environmental authorisation as well as assisting with the compilation of a site specific environmental management plan (EMP) for each of the six proposed borehole sites. Also responsible as the environmental control officer (ECO) to ensure that the mitigation measures included in the EMP are met during the drilling process. Involved for 0.5 person-months. (City of Cape Town).

Rehabilitation and replacement of water and sewer networks in Cape Town (Western Cape Province, South Africa) 05/2013 - 12/2018. *Environmental Consultant.* Aurecon has been appointed to undertake water and sewer pipe rehabilitation and replacement projects in Cape Town. This included a 200 mm diameter sewer pipeline of approximately 700 m in Nyanga. Responsible for compiling a high-level desktop environmental sensitivity screening using the South African National Biodiversity Institute's (SANBI's) biodiversity geographic information system (GIS) online data. The aim of the study is to determine if the proposed works associated with the Nyanga sewage pipeline will affect any environmentally sensitive areas. (City of Cape Town Metropolitan Municipality).

Environmental impact assessment (EIA) for Penhill greenfields development project (Western Cape Province, South Africa) 12/2016 - 12/2018. *Environmental Practitioner.* The Department of Human Settlements is establishing a housing development of approximately 8 000 units as part of the Southern Corridor Integrated Human Settlement Programme to upgrade informal settlements in Cape Town. Aurecon has been appointed to undertake an environmental impact assessment (EIA) for the Penhill greenfields housing development. Responsible for the pre-application report write-up, the report write-up as well as the integration of specialist studies into the scoping report, environmental impact assessment (EIA) and managing the public participation process (PPP). Also responsible for coordination of the water use license application (WULA) process as well as review of technical documents for submission to Department of Water Affairs. Involved for 5.5 person-months. (Provincial Government of the Western Cape (PGWC): Department of Human Settlements).

Engineering services for the Idutywa East water supply scheme (Eastern Cape Province, South Africa) 03/2012 - 10/2018. *Environmental Control Officer (ECO).* Aurecon was appointed for the consulting engineering, social facilitation and environmental services for the construction of rural water supply in Idutywa. The Idutywa East Water Supply Scheme forms part of a regional scheme, which includes the Mbashe North, Bende, Mgwali South and Mgwali North schemes. Aurecon carried out the preliminary and detailed design, tender design, management of the instructional system development (ISD) component, environmental impact assessment (EIA) application, environmental control officer (ECO) services, construction monitoring and commissioning. Responsible for conducting environmental audits to ensure compliance with its environmental management plans (EMPs) during the construction phase of the project. Involved for 0.5 person-months. (Amathole District Municipality (ADM)).

Basic assessment (BA) for the Loeriesfontein Wind Energy Facility (WEF) and transmission (Northern Cape Province, South Africa) 09/2015 - 04/2018. *Environmental Consultant.* The project involved the construction of four wind energy facilities (WEFs) and associated infrastructure near Loeriesfontein. The WEFs were constructed in four phases, each of which had a maximum generation capacity of 140 to 240 MW with a combined generation capacity of approximately 560 to 960 MW. Aurecon was appointed to undertake the requisite environmental process as required in terms of the National Environmental Management Act: Act No. 107 of 1998 (NEMA), as amended on behalf of the proponent, Business Venture Investments No. 1788 (Pty) Ltd (BVI). Responsible for compiling four specific applications for environmental authorisation (EA). Involved for 0.75 person-months. (Business Venture Investments No. 1788 (Pty) Ltd (BVI)).

Environmental impact assessment (EIA) for proposed extension of ashing facilities at Kriel Power Station (Mpumalanga Province, South Africa) 08/2016 - 12/2017. *Environmental Consultant.* Aurecon has been appointed to undertake an environmental impact assessment (EIA) for the proposed extension of an ash dam facility at the Kriel Power Station. The EIA was postponed after the scoping phase was completed in 2011 due to further geotechnical investigation being required for the preferred site. In 2016, Aurecon's appointment was amended to allow for a new EIA process to be undertaken in terms of the latest environmental legislation. Responsible for compiling the need and desirability section of the scoping report, social impact assessment (SIA) and public participation. Also responsible for assisting the senior environmental practitioner in scoping report write-up and integration of specialist studies in to the scoping report, as well as managing the public participation process (PPP). Involved for 0.75 person-months. (Eskom).

Hotazel Solar Park (Northern Cape Province, South Africa) 05/2016 - 10/2017. *Environmental*

Consultant. The project entailed the development of a 200 MW photovoltaic (PV) solar facility including a utility scale battery storage facility. Aurecon was appointed to conduct a transport study in order to confirm access routes and access points for the proposed solar development. Responsible for assisting the senior environmental impact assessment practitioner in report write-up of the scoping report. Involved for 0.25 person-months. (juwi Renewable Energies (Pty) Ltd).

Proposed wind energy facility (WEF) near Copperton (Northern Cape Province, South Africa) 10/2015 - 10/2016. *Environmental Consultant.* The applicant, Copperton Wind Farm (Pty) Ltd, has been authorised to construct a 140 MW wind energy facility (WEF) on the Farm Struisbult (Portions 4 (a portion of Portion 2) and 7 (a portion of Portion 5) of Farm No. 103 and Portion 5 of Farm No. 104) and the relocation of an existing airstrip to Portions 1 and 2 of the Farm Smouspan (Farm No. 105), near Copperton. Aurecon undertook an environmental impact assessment (EIA) for the proposed development, which concluded on 15 August 2012 upon issue of the environmental authorisation (EA) by the Department of Environmental Affairs (DEA). The process involved the assessment of environmental impacts that were documented in the Final Environmental Impact Assessment Report (EIAR) dated March 2012 (Aurecon, 2012). Responsibilities included preparing and updating the amendment report (AMM7). (Copperton Wind Farm (Pty) Ltd).

Working for Wetlands (WfW) rehabilitation programme 2014-2017 (National, South Africa) 06/2013 - 09/2016. *Environmental Consultant.* Aurecon was appointed in 2013 for a three-year cycle for the design, planning, environmental, project and risk management of the South African government's Working for Wetlands (WfW) programme, which is a nationally run initiative by the South African National Biodiversity Institute (SANBI). The programme's objective is to rehabilitate damaged wetlands and to protect wetlands in all nine provinces of South Africa, with an emphasis on complying with the principles of the expanded public works programme (EPWP) through employing only local small, medium and micro enterprises (SMMEs). Responsible for the compilation of high quality basic assessment reports (BARs), rehabilitation plans and environmental management programmes (EMPrs) as well as managing the public participation process (PPP). Involved for 0.75 person-months. (South African National Biodiversity Institute (SANBI)).

Design and supervision for the Ngqusi potable water supply project (Eastern Cape Province, South Africa) 01/2008 - 12/2014. *Environmental Control Officer.* Aurecon was appointed for the design and supervision of all construction works for the Ngqusi potable water supply project. The project entailed the construction of approximately 135 km of gravity lines and nine reservoirs to provide water to the residents by means of 475 stand taps. Aurecon also provided technical assistance and project coordination. An estimated 2 000 households benefited from the implementation of this project. Responsible for conducting environmental audits to ensure compliance with the environmental management plans (EMPs) during the construction phase of the project. Also responsible for initiating environmental awareness training to promote adherence to the EMP. Involved for 0.5 person-months. (Amathole District Municipality (ADM)).

Education

- 2014 : BSc (Hons) Environmental Geography, Nelson Mandela Metropolitan University (NMMU), South Africa
 2013 : BA Geography, University of Johannesburg (UJ), South Africa

Professional affiliations

- Full Member, International Association for Impact Assessment South Africa (IAIASa)
 Full Member, Southern African Association of Geomorphologists (SAAG)

Languages

| | Reading | Writing | Speaking |
|-----------|----------------|----------------|-----------------|
| Afrikaans | Poor | None | Poor |
| English | Excellent | Excellent | Good |
| Sesotho | Poor | Poor | Fair |
| Xhosa | Excellent | Excellent | Excellent |
| Zulu | Good | Good | Good |

Research projects

Ntsengwane S, 2014. "Environmental and Social Impacts of Fuelwood Energy Consumption in a Rural Village: Using Nkanji Village, Eastern Cape, as a Case Study". BSc Honours Thesis at Nelson Mandela Metropolitan University (NMMU).