

#### Qualifications

MPhil (Environmental Management)

NDip (Forestry)

BTech (Forestry)

#### Professional registrations

Registered Environmental Assessment Practitioner (EAP), Environmental Assessment Practitioners Association of South Africa (EAPASA) (EAPASA Reg No 2021/4095).

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

#### Specialisation

Project Leader/Senior Environmental Practitioner

# 18

years in industry

## Patrick Killick

### Environmental Practitioner



Patrick is based in Zutari's George office as a senior environmental practitioner and project leader with significant on-site experience in the supervision, hands-on management and monitoring of construction-related environmental impacts and occupational health and safety associated with the construction of dams, roads, pipelines, underground works, weirs, and residential villages whilst employed on the Berg Water Project.

Patrick entered the environmental field via construction phase environmental management on the Berg River Project, where his duties included the supervision and hands-on environmental management, site remediation, monitoring of construction-related environmental impacts and occupational health and safety. This experience was gained on a range of interrelated projects including dams, roads, pipelines, underground works, weirs, and residential villages, which includes four years of experience in a full-time environmental management officer role near Franschhoek, Western Cape. As a result, he is well-versed in the site management systems, processes and the practicalities of environmental site management. His duties as a practical environmental manager also included converting guidelines and policy into practice and procedure.

Patrick's impact assessment experience arose from a variety of projects and industries whilst undertaking various environmental impact studies and other regulatory and planning processes for various developments within South Africa, Angola, Mozambique, Tanzania and Namibia. His project experience runs deeper in the areas of municipal bulk water supply and wastewater treatment infrastructure, waste management facilities (including H:h landfill class), bulk thermal power generation (gas, HFO and coal), utility-scale renewable energy projects (wind and solar), seawater desalination (SWRO) including associated marine, estuarine and coastal issues, open pit mining (coal and uranium) and associated mining infrastructure. With a keen interest in the technical aspects of the job, Patrick enjoys exposure to each new industry and understanding the technologies, processes and environmental challenges associated with each.

Patrick also plays a role in the management and development of proposals for various prospects pursued throughout the African continent and contributes to the maintenance of several business planning databases in this regard. He also provides support and guidance to other environmental project leaders on project management-related matters.

Patrick obtained a Master's degree in Environmental Management in 2005 from the University of the Free State (UFS) and is a member of the International Association for Impact Assessment South Africa (IAIASa) and a Registered Environmental Assessment Practitioner (EAP) with the Environmental Assessment Practitioners Association of South Africa (EAPASA), EAPASA Reg No 2021/4095.

## Experience

### **Namies and Wolf Wind farm environmental authorisation (EA) amendments, South Africa, juwi Renewable Energies (Pty) Ltd, 07/2017 - 08/2022, Project Leader**

The project entailed the second part of the environmental authorisation (EA) amendment process to increase the size of the wind turbines that can be deployed on the Namies and Wolf Wind energy facilities. Responsible as Team Lead and EAP for all aspects of the project and overseeing the compilation of EA amendment application, associated amendment report and associated public participation process.

### **Environmental and social impact assessment (ESIA) and resettlement action plan (RAP) for the Zambeze Coal Mine, Tete, Mozambique, International Coal Ventures Private Limited (ICVL), 11/2015 - 12/2021, Project Manager**

Zutari was appointed to develop the environmental and social studies that will enable the licensing of the Zambeze Coal Project. The aim of the project is to provide the client with a sound assessment of the potential impacts of the proposed Zambeze mine development and to demonstrate proposed mitigation or enhancement measures on these to the environmental authority, namely the Ministry of Land, Environment and Rural Development/Ministério da Terra, Ambiente e Desenvolvimento Rural (MITADER). Responsible for project contract and financial management.

### **Nuweveld Wind Farm Projects, Western Cape Province, South Africa, Red Cap Nuweland North (Pty) Ltd, 03/2019 - 12/2021, Project Leader**

Red Cap Energy (Pty) Ltd is proposing three wind energy facilities (wind farms) approximately 65 km north of Beaufort West and 30 km south of Loxton along the R381 in the Beaufort West Local and Central Karoo District Municipalities, in the Western Cape. The project includes the development of an approximately ~120 km 132 kV or 400 kV (132/400 kV) transmission line (gridline) which will connect the proposed wind farms to the Eskom Droërivier substation located south-west of Beaufort West. Zutari has been appointed as the independent environmental assessment practitioner (EAP) to facilitate the requisite scoping and environmental impact reporting (S&EIR) processes for all four applications in accordance with the NEMA and associated legislation. The projects included a detailed pre-screening phase used to identify site sensitivities and no-go areas, which informed the preliminary project layout. The layout was then iteratively refined through ongoing specialists, public and authority inputs via a public participation process during the voluntary pre-application scoping phase, and the formal scoping and impact assessment phases. Responsible as Team Lead and EAP for all aspects of the project and overseeing the compilation of environmental impact assessment (EIA) and environmental management programmes (EMPrs) across the four applications, three social and environmental impact assessments (S&EIA) and one basic assessment.

### **Environmental amendment for the 200 MW Hotazel Solar Park, Northern Cape Province, South Africa, juwi Renewable Energies (Pty) Ltd, 04/2019 - 11/2021, Project Leader**

The project entailed the environmental authorisation (EA) amendment to expand and split the 200 MW solar PV facility and associated infrastructure, including a 100 MWh grid-scale battery storage facility on a site near Hotazel in the Northern Cape into two discreet projects. Responsible as Team Lead and EAP responsible for all aspects of the project and overseeing the compilation of EA amendment application and associated amendment report.

### **Koeris dangerous goods basic assessment and environmental authorisation, Northern Cape Province, South Africa, SA Mainstream Renewable Power, 10/2018 - 11/2021, Project Leader**

Zutari undertook a National Environmental Management Act (NEMA) Part 2 environmental authorisation (EA) amendment for the increase in turbine size and basic assessment (BA) for a temporary above-ground diesel storage tank. Responsible as Team Lead and EAP for all aspects of the project and overseeing the compilation of EA amendment application and associated amendment report.



**Design of Mizingani seawall and promenade, Phase IIA, Zanzibar City, Zanzibar, Tanzania Ministry of Finance, 11/2013 - 03/2020, EMPr Specialist and ECO**

The Revolutionary Government of Zanzibar (RGoZ), through its Zanzibar Urban Services Project (ZUSP), appointed Zutari 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, Zutari'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 the compilation of a detailed environmental management programme (EMPr) and later appointed to monitor and audit of the project performance against the conditions of authorisation and EMPr.

**Water augmentation study for the Bitou Local Municipality, Western Cape Province, South Africa, Bitou Local Municipality, 10/2009 - 2020, Project Leader**

The Wadrif 1E Dam scheme was for the augmentation of the bulk water supply to the Plettenberg Bay area. Zutari'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 as Team Lead and EAP responsible for all aspects of the project and compilation of interim monitoring report need to allow for the continuation of the authority's stalled decision making process.

**Table Mountain Group (TMG) Aquifer exploratory phase, Western Cape Province, South Africa, City of Cape Town, 12/2015 - 08/2019, EMPr Specialist**

The Table Mountain Group (TMG) Aquifer is an aquifer system with significant storage volume which can provide large bulk water supply for local municipalities and irrigation water for agriculture in the Western Cape and Eastern Cape Provinces in South Africa. Zutari was appointed to manage the exploration of groundwater in the aquifer system in order to establish the potential of the TMG Aquifer as a long-term water resource for the Western Cape. Responsible for contributions to the environmental management programmes (EMPrs) and advisory support and quality management to ECOs.

**Wallerawang Closure Project, New South Wales, Australia, EnergyAustralia NSW Pty Ltd, 09/2016 - 06/2019, Team Member**

Energy Australia's Wallerawang Closure Project went underway to decommission, deconstruct and rehabilitate the site which formerly housed the Wallerawang Power Station, an ash disposal area and associated infrastructure. The 200 ha Wallerawang Ash Repository comprises Kerosene Vale Ash Repository (KVAR), Kerosene Vale Ash Dam (KVAD), Sawyers Swamp Creek Ash Dam (SSCAD), Lidsdale Cut landfill area, an asbestos repository and infrastructure that services these land uses including a pipeline easement, access tracks, haul roads and water management features. Responsible for the section dealing with assessment, management and mitigation of noise and vibration aspects.

**Hotazel Solar Park, Northern Cape Province, South Africa, juwi Renewable Energies (Pty) Ltd, 05/2016 - 10/2017, Project Leader**

Hotazel Solar Farm, owned by juwi Renewable Energies (Hotazel Solar 1 (Pty) Ltd), is proposing the construction of a solar photovoltaic (PV) park and associated grid connection infrastructure near Hotazel in the Northern Cape. Zutari has been appointed to undertake two separate applications for environmental authorisations from the Department of Environmental Affairs (DEA). Responsible as Team Lead and EAP for all aspects of the project and the compilation of all impact assessment documents, environmental management programme (EMPr) and associated public participation process.

**Road materials supply strategy, Western Cape Province, South Africa, Provincial Government of the Western Cape (PGWC): Department of Transport and Public Works, 06/2008 - 07/2017, Team Member/EMPr Specialist/ECO Support and Review**



The Western Cape Province initiated a proactive approach to identifying and legalising a network of approved pits. Zutari 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 and was responsible for getting all the required approvals. Responsible as Team Member and assisted with the compilation of application documentation, environmental management programmes (EMPrs) and provided ECO support and quality control functions.

**Environmental authorisation (EA) amendment for the Kangnas and Koeris wind energy facilities, Northern Cape Province, South Africa, Mainstream Renewable Power (Pty) Ltd, 02/2016 - 09/2016, Project Leader**

Zutari was appointed by Mainstream Renewable Power (Pty) Ltd to undertake two Part 2 amendment and one Part 1 amendment, in terms of the NEMA EIA Regulations, 2014, of an environmental Authorisation for the Kangnas and Koeris Wind Energy Facilities. The amendment centred on a change to the specifications of the proposed wind turbines to allow for a wider turbine specification envelope that permits the new modern turbines models. Responsible as Team Lead and EAP for all aspects of the project and the compilation of all EA amendment documentation and associated public participation process.

**Optimisation of Kupferberg landfill site, Windhoek, Namibia, Jan Palm Consulting Engineers (JPCE), 08/2015 - 09/2016, Project Leader**

The Kupferberg waste disposal site is currently the only waste disposal facility that serves the City of Windhoek and is one of two in Namibia with hazardous waste components. The City of Windhoek plans to expand the disposal site and service the City of Windhoek for up to 20 years. Zutari was engaged to undertake an environmental impact assessment (EIA) on the project. Responsible as Team Lead and EAP for all aspects of the project and the compilation of all impact assessment documents, environmental management programme (EMPr) and associated public participation process.

**Environmental authorisation amendment for the 96 MW Wolf Wind Energy Farm, Eastern Cape Province, South Africa, juwi Renewable Energies (Pty) Ltd, 04/2016 - 08/2016, Project Leader**

Zutari was appointed by juwi Renewable Energies (Pty) Ltd to undertake a Part 2 amendment, in terms of the NEMA EIA Regulations, 2014, of an environmental authorisation for the Wolf Wind Energy Facility near Wolwefontein in the Eastern Cape. The amendment centred on a change to the specifications of the proposed wind turbines, increasing blade tip and increasing generation power. Responsible as Team Lead and EAP for all aspects of the project and the compilation of all impact assessment documents, environmental management programme (EMPr) and associated public participation process.

**Environmental processes for the Kronos Solar Park, Northern Cape Province, South Africa, juwi Renewable Energies (Pty) Ltd, 11/2014 - 11/2015, Project Leader**

Zutari was appointed to undertake five individual environmental processes to assess the environmental impacts associated with the three proposed 75 MW photovoltaic (PV) facilities and two 132 kV overhead transmission lines at the Kronos Solar Park near Copperton. Responsible as Team Lead and EAP for all aspects of the project and the compilation of all impact assessment documents, environmental management programme (EMPr) and associated public participation process.

**Kangnas Wind Energy Facility (WEF) and photovoltaic EIAs, Western Cape Province, South Africa, Mainstream Renewable Power, 03/2012 - 11/2015, Project Leader**

The project involved updating the final environmental management programmes (EMPrs) and layouts for the approved 140 MW Kangnas Wind Energy Facility (WEF) and associated infrastructure as part of the project financial close ahead of construction for submission to the Department of Environmental Affairs (DEA). Responsible as Team Lead and EAP for all aspects of the project and the compilation of all impact assessment documents, environmental management programmes (EMPr) and associated public participation process.

**Outeniqua Wind Farm, Western Cape Province, South Africa, Juwi Renewable Energies (Pty) Ltd, 03/2013 – 10/2015, Project Leader**



The project involves conducting an environmental impact assessment process in terms of the National Environmental Management Act for a 39 MW wind energy facility (WEF). Responsible as Team Lead and EAP for all aspects of the project and the compilation of all impact assessment documents, environmental management programme (EMPr) and associated public participation process.

**Wolf Wind Farm assessment, Eastern Cape Province, South Africa, Juwi Renewable Energies (Pty) Ltd, 08/2013 - 09/2015, Project Leader**

This project involved a proposed wind energy facility (WEF) and associated infrastructure, with a generation capacity of 80MW on farms near Wolwefontein in the Eastern Cape with 132 kV or 220 kV overhead transmission lines for transmission and distribution. Responsible for conducting an environmental impact assessment (EIA).

**Rössing Desalination Plant, Erongo Region, Namibia, Rio Tinto Rössing Uranium Limited, 07/2014 - 03/2015, Project Leader**

This project consisted of a 10 Ml/d seawater desalination plant, north of Swakopmund to supply the water needs of Rössing Uranium Mine. Responsible as the Zutari Team Lead and EAP for some aspects of the project and the compilation of all impact assessment documents, environmental management programme (EMPr) and associated public participation process.

**450 MW Khanyisa coal-fired power station, Mpumalanga Province, South Africa, AngloGold, 09/2010 - 01/2014, Consulting Team Member**

Compilation of construction and operations phase environmental management programmes (MP's) for a 450 MW coal-fired power station and associated infrastructure, including ash disposal dumps. Responsible for the development of the environmental management programme (EMPr).

**Mineral exploration environmental management plan (EMP) for License Areas No 3450L and 3451L, Tete Province, Mozambique, Coal India Africana Limitada, 02/2012 - 04/2013, Consulting Team Member**

The project entailed the compilation of an environmental management plan (EMP) for mineral exploration drilling (diamond core and percussion drilling) in Licence Area no 3450L and 3451L of the Moatize coal fields. Responsible for compilation of the exploration drilling environmental management programme (EMPr).

**Environmental and socio-economic impact assessment (ESIA) for a coal-fired power station, Erongo Region, Namibia, NamPower, 09/2011 - 04/2013, Consulting Team Member**

To meet the increasing power demands and reduce Namibia's dependency on South Africa for electricity, the Namibia Power Corporation (NamPower) proposed an increase in its electricity-generating capacity. The national peak is approximately 550 MW, of which a significant portion is imported, especially during the dry season. This is when the flow of the Kunene River is far below what is needed to operate the Ruacana Power Station on full base load. The proposed power station, Erongo, is set to contribute to the base load supply and assist in stabilising the grid under load and supply fluctuations. The project aimed to assess the impact of a 150/300/800 MW coal-fired power station with an associated coal stockyard, an ash disposal facility and transport systems to deliver coal. This project aimed to investigate one of the alternative sites from the previous study in Walvis Bay and two new sites in the vicinity of Arandis, east of Swakopmund. Responsible for the development of the environmental management programme (EMPr).

**Construction of a bulk water supply scheme to the town of Aussenkehr, Karas Region, Namibia, Namibian Water Corporation, 12/2011 - 03/2013, Consulting Team Member**

The project comprised the compilation of a life-cycle environmental management plan for the bulk water supply scheme for the town of Aussenkehr. Responsible for the development of the environmental management programme (EMPr).

**Upgrading the Keurbooms pump station, abstraction works and rising main, Western Cape Province, South Africa, Bitou Municipality, 11/2009 - 12/2011, Environmental Control Officer (ECO)**

Zutari was appointed by the Bitou Municipality to compile an environmental management plan (EMP) associated with the proposed urgent upgrading of the Keurbooms Pump station, abstraction works and a 650



m length of 500 mm diameter steel rising raw water main. Responsible for compiling an EMP associated with the proposed urgent upgrading of the Keurbooms pump station, abstraction works and a 650 m length of 500 mm diameter steel rising raw water.

**Mine life extension for Rössing Uranium Mine, Arandis, Namibia, Rio Tinto Rössing Uranium Mine Limited, 06/2007 - 12/2011, Consulting Team Member**

The project comprised the compilation of a social and environmental management plan (SEMP) for various activities associated with the life extension of Rössing Uranium Mine. This included the extension of the open pit operations, acid manufacturing plant, ore sorting plant, extended waste rock disposal areas, and tailings facilities, as well as a bulk sulphur handling facility in the port at Walvis Bay. Responsible for the development of the environmental management programme (EMPr).

**Decommissioning of the Sonae Novobord fibreboard factory, Western Cape Province, South Africa, Sonae Novobord (Pty) Ltd, 06/2009 - 06/2011, Consulting Team Member**

Zutari was appointed by the Sonae Novobord to compile an environmental management plan (EMP) and act as the environmental control officer (ECO) for the decommissioning of their factory in George Industria, with a focus on the recovery and handling of salvageable materials and the lawful recovery and disposal of hazardous wastes and contaminated soil. Responsible for authoring various documents including the environmental impact assessment (EIA), public consultation materials and environmental management programmes (EMPRs). Also fulfilled the role of ECO overseeing the decommissioning process and ensuring compliance with the environmental authorisation (EA) and EMPr.

**Pipeline for reclamation of water from wastewater treatment works (WWTW), Western Cape Province, South Africa, Beaufort West Municipality, 02/2007 - 06/2011, Consulting Team Member**

Zutari was appointed for the facilitation of the required environmental authorisation and waste licence for the upgrading of the wastewater treatment works in Merweville. Responsible for routine environmental auditing to confirm compliance with the environmental authorisation (EA) and environmental management programme (EMPr) as required by the ECO role.

**15 Ml/d Emergency desalination plant in Mossel Bay, Western Cape Province, South Africa, Mossel Bay Municipality, 05/2010 - 01/2011, Project Manager, Lead Consultant and Environmental Control Officer (ECO)**

The project involved the compilation of a Section 24G application in terms of the National Environmental Management Act for an emergency 15 Ml/d seawater reverse osmosis plant as a result of more than 1:150 year drought situation in the Southern Cape, inclusive of a construction phase environmental management plan (EMP) and environmental control officer (ECO) services. Responsible as Team Leader and EAP for the compilation of a Section 24G retrospective environmental impact assessment (EIA) and also the ECO, auditing compliance against the provisional environmental management programme (EMPr).

**A new sulphuric acid storage tank at the Rössing Uranium Mine, Arandis, Erongo, Namibia, Rio Tinto Rössing Uranium Mine Limited, 02/2010 - 06/2010, Consulting Team Member**

Commissioned by Rössing Uranium to compile a social and environmental management plan (SEMP) for the proposed new 15 Kt sulphuric acid storage tank located within the mine precinct. Responsible for compilation of the impact assessment documentation and environmental management programme (EMPr).

**Social and environmental management for mineral exploration drilling plan, Arandis, Erongo, Namibia, Rio Tinto Rössing Uranium Mine Limited, 11/2008 - 04/2010, Consulting Team Member**

Commissioned by Rössing Uranium Limited to compile a social and environmental management plan (SEMP) for the proposed exploration drilling activities within the Namib-Naukluft Park and mine licence area. Responsible for compiling the exploration drilling environmental management programme (EMPr).



**Creosote and CCA timber pole treatment facility, Groot Brak and Albertinia, South Africa, Outeniqua Pale (Pty) Ltd, 06/2007 - 03/2010, Consulting Team Member**

Responsible for assisting with an environmental impact assessment (EIA) for the decommissioning of an Outeniqua Pale Creosote and CCA pole treatment facility in Groot Brak and re-establishing it on a new site in Albertinia. Appointed by Outeniqua Pale (Pty) Ltd to compile a construction, operation and decommission phase environmental management plan (EMP) for a Creosote and CCA pole treatment facility in conjunction with a basic assessment report (BAR).

**2 Ml/d Emergency desalination plant in Plettenberg Bay, Western Cape Province, South Africa, Bitou Municipality, 12/2009, Lead Consultant and Environmental Control Officer (ECO)**

Compilation of a Section 24G application in terms of the National Environmental Management Act for an emergency 2 Ml/d seawater reverse osmosis plant as a result of a 1:150 year drought situation in the Southern Cape, inclusive of a construction phase environmental management plan and environmental control officer services. Responsible as Team Leader and EAP for the compilation of a Section 24G retrospective environmental impact assessment (EIA) and also the ECO, auditing compliance against the provisional environmental management programme (EMPr).

**Social and environmental management plan for a bulk sulphur handling facility, Erongo, Namibia, Rio Tinto Rössing Uranium Mine Limited, 04/2008 - 12/2009, Consulting Team Member**

Commissioned by Rössing Uranium to compile a social and environmental management plan (SEMP) for the proposed bulk sulphur importation, stockpiling and handling facility in the port of Walvis Bay.

**Emergency upgrading of Keurbooms rising main and pumps, Western Cape Province, South Africa, Bitou Municipality, 10/2009 - 11/2009, Lead Consultant**

Appointed by the Bitou Municipality to undertake an Emergency application for the upgrading of a 295 m section of the perished pipeline, with 500 mm diameter steel pipe and the upgrading of pump impellers to increase abstractions from 100 l/s to 120 l/s out of the Keurbooms River. Responsible to compile an EMP and functioning as the ECO for the Emergency application and subsequent upgrading of a 295 m section of the perished pipeline, with 500 mm diameter steel pipe and the upgrading of pump impellers to achieve a greater abstraction rate.

**Upgrading of the Merweville wastewater treatment works (WWTW), Western Cape Province, South Africa, Beaufort West Municipality, 05/2009 - 10/2009, Project Manager and Lead Consultant**

Zutari was appointed by the Beaufort West Municipality to undertake a waste license application involving the compilation of a basic assessment report and a construction, operation and decommissioning phase environmental management plan (EMP) for the upgrading of the Merweville wastewater treatment works (WWTW). Responsible as Team Leader and EAP for the compilation of impact assessment and environmental management programme (EMPr) documents.

**Environmental and socio-economic impact assessment (ESEIA) for a proposed NamPower coal-fired power station at Walvis Bay, Erongo, Namibia, NamPower, 04/2008 - 08/2009, Consulting Team Member**

Responsible for acting as Lead Consultant on the ESEIA for the proposed NamPower coal-fired power station at Walvis Bay. This included a site screening and selection process, a scoping study, and an ESEIA, all supported by an environmental management plan (EMP).

**40 Ml off-channel reservoir in Karatara, Western Cape Province, South Africa, Knysna Municipality, 04/2008 - 07/2009, Principle Environmental Consultant/Environmental Control Officer**

The project entailed the compilation of the construction phase environmental management plan (EMP) for a 40 000 m<sup>2</sup> off-channel reservoir, in-channel abstraction works, and associated pipe work. Responsible for acting as environmental control officer (ECO) to supervise the implementation of the environmental management plan (EMP), and undertake compliance monitoring and reporting.



**Independent review of environmental impact assessment (EIA) applications, Eastern Cape Province, South Africa, Department of Environmental Affairs and Tourism (DEAT), 01/2007 - 02/2009, Consulting Team Member**

Responsible for assisting with the review of various Section 22 EIA applications in terms of the Environmental Conservation Act (Act 73 of 1989) for the Department of Economic Affairs, Environment and Tourism (DEAET).

**Paratus emergency generation facility in Walvis Bay, Erongo, Namibia, NamPower, 04/2008 - 08/2008, Consulting Team Member**

Responsible for assisting with the environmental process management and compiling documentation in relation to a proposed 50 MW heavy fuel oil emergency generation facility located in the industrial port area.

**Review of the biodiversity components of municipal spatial development frameworks in the Cape domain, Western Cape Province, South Africa, South African National Biodiversity Institute (SANBI), 09/2007 - 06/2008, Consulting Team Member**

Zutari was appointed to provide an overview of the requirements for biodiversity in SDF's, and an assessment of the current status of biodiversity in these SDF's, as well as to undertake the review as Phase I of a process to improve the input of biodiversity priorities in spatial planning documents and processes. Responsible for reviewing the first phase of a process to improve the input of biodiversity priorities in spatial planning documents and processes.

**Overhead power lines between Ha Lejone and the Liqhobong and Kao Diamond Mines, Lesotho, Liqhobong Mining Development Company and Kao Diamond Mine/Plantech Associates, 03/2007 - 02/2008, Consulting Team Member**

Responsible for assisting with the compilation of an environmental impact assessment (EIA) for a 38 km, 132 kV overhead power line and associated step-up and step-down substations.

**Timber treatment facility, Albertinia, South Africa, Outeniqua Pale (Pty) Ltd, 2008, Consulting Team Member**

The project was concerned with the compilation of a construction, operation and decommission phase environmental management plan (EMP) for a Creosote and CCA pole treatment facility in conjunction with a basic assessment report. Responsible for contributions to the environmental management programme (EMPr) and assisting with air quality monitoring.

**Relocation of Sedgefield's water treatment and supply infrastructure, Western Cape Province, South Africa, Knysna Municipality, 08/2007 - 12/2007, Consulting Team Member**

The project consisted of a basic assessment report for the construction of a 4,5 MI water treatment works; a 1,8 km, 300 mm rising raw water pipeline; and the decommissioning and upgrading of the Ruigtevlei water treatment works into a pump station. Conduct a Basic Assessment process for the construction or a 4.5MI water treatment works, a 1,8 km, 300 mm rising raw water pipeline and the decommissioning and upgrading of the Ruigtevlei water treatment works into a pump station. Compilation of the construction, operational and decommissioning phase EMP's for the construction or a 4,5 MI water treatment works, a 1,8 km, 300 mm rising raw water pipeline and the decommissioning and upgrading of the Ruigtevlei water treatment works into a pump station. Responsible for assisting with the compilation of project documentation including impact assessment and environmental management programmes (EMPrs).

**Chemical storage and distribution facility in George, Western Cape Province, South Africa, Metsi Chem Ikapa (Pty) Ltd, 06/2007 - 11/2007, Consulting Team Member**

The project involved Section 24G retrospective applications for the authorisation of illegal activities relating to the storage of various hazardous chemicals used in the water purification industry, and the development of an associated operational phase environmental management plan (EMP) for incorporation into an ISO14001 environmental management system (EMS). Responsible for compilation of a section 24G retrospective environmental impact assessment (EIA) and environmental management programme (EMPr).



**Alien vegetation eradication and rehabilitation, Fancourt Estate, George, Western Cape, South Africa, Fancourt Golf and Country Estate, 05/2006 - 06/2007, Consulting Team Member**

Responsible for formulating an alien vegetation eradication and rehabilitation plan for Afromontane Forest for the estate's landholding on Malgas River.

**Berg water project, Franschhoek, Western Cape Province, South Africa, Trans-Caledon Tunnel Authority (TCTA), 03/2004 - 03/2007, Environmental Monitor**

The project entailed the construction of bulk water supply infrastructure to service the greater Cape Town metropolitan area which is comprised of the Berg River Dam, large diameter water transfer pipelines, two heavy-duty pump stations, a scheme control centre, a balancing dam, several gauging weirs, a diversion weir, an asphalt access road, and an 80-unit residential village with associated bulk services. Responsible for construction supervision, environmental monitoring and reporting, review and assistance with construction method statements, monitoring health and safety aspects and legal compliance, as well as investigating and advising on internal and external entities with regard to environmental issues.

**A chemical storage facility, George, South Africa, Metsi Chem Ikapa (Pty) Ltd, 2007, Consulting Team Member**

This project involved Section 24G retrospective applications for the authorisation of illegal activities relating to the storage of various hazardous chemicals used in the water purification industry, and the development of an associated operational phase environmental management plan (EMP) for incorporation into an ISO14001 environmental management system (EMS). Responsible for compilation of a section 24G retrospective environmental impact assessment (EIA) and environmental management programme (EMPr).

**Keurbooms River raw water pipeline, Plettenberg Bay, South Africa, Bitou Municipality, 2007, Environmental Control Officer**

The project consisted of the provision of ad hoc environmental planning, routine audits, and compliance monitoring of the implementation of the environmental management plan (EMP) and ROD conditions of approval for the installation of a 9 km raw water pipeline and the rehabilitation of the construction servitude on completion. Responsible for the monitoring and auditing of the project performance against the conditions of environmental authorisation (EA) and environmental management programme (EMPr).

**Mine life extension for Rössing Uranium Mine, Arandis, Namibia, 2007, Consulting Team Member**

Responsible for assisting with the compilation of a social and environmental impact assessment (SEIA) for various activities associated with the life extension of Rössing Uranium Mine, including the extension of the open pit operations, the acid manufacturing plant, the ore sorting plant, extended waste rock disposal areas, and tailings facilities.



**Environmental Assessment  
Practitioners Association  
of South Africa**



Registration No. 2021/4095

***Herewith certifies that***

**Patrick James Killick**

***is registered as an***

**Environmental Assessment Practitioner**

***Registered in accordance with the prescribed criteria of Regulation 15. (1)  
of the Section 24H Registration Authority Regulations  
(Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the  
National Environmental Management Act (NEMA), Act No. 107 of 1998, as  
amended).***

Effective: 01 March 2023

Expires: 29 February 2024

Chairperson

Registrar

