



DETAILS OF EAP AND EXPERTISE

DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

CEN Integrated Environmental Management Unit (CEN IEM Unit) was appointed by South African Clean Energy Solutions (SACE) to undertake the necessary environmental assessment. CEN IEM Unit meets the requirements for an independent EAP in terms of the Environmental Impact Assessment (EIA) Regulations of 2010. Details of the EAP are presented in **Table 1-2**.

Table 1-1: Details of the EAP

Environmental Consultant	CEN Integrated Environmental Management Unit
EAP	Dr M. Cohen
Postal Address	36 River Road, Walmer, Port Elizabeth, 6070
Telephone	041 581 2983
Fax	086 504 2549
Email Address	steenbok@aerosat.co.za

The report was prepared by Mrs Lucille Behrens. Lucille has 10 years of experience in the environmental management field, has a B.Sc. Honours in Environmental Monitoring and Modelling, and is a member of IAIAAsa. Her area of expertise is EIAs and related processes, and as project manager.

All reports are reviewed and approved by Dr Michael Cohen, Director at CEN IEM Unit and the project-specific EAP. Mike has over 30 years of experience, has a D.Sc. in Wildlife Management, is a registered Professional Natural Scientist (PrSciNat), a member of IAIAAsa and Institute of Ecologists and Environmental Scientists.

Please find following Curriculum Vitae for Lucille Behrens and Mike Cohen.

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Reg No: 1996/032402/23

CURRICULUM VITAE

LUCILLE BEHRENS

Name of Firm	CEN Integrated Environmental Management Unit
Date of birth	20 August 1976
Position in Firm	Senior Environmental Scientist
Specialisation	Environmental Management
Nationality	South African
Years of experience	10
HDI Status	White female, no disabilities

KEY QUALIFICATIONS

Lucille has 11 years' experience in the Environmental Management field. Lucille has undertaken a number of Environmental Impact Assessments (i.e. Basic Assessments; Scoping and EIA) under the EIA Regulations of 2006 and 2010. Her roles have included being the Assistant Environmental Assessment Practitioner (EAP), Project Manager and Environmental Scientist for EIA related projects. Her responsibilities have included undertaking environmental assessments, compilation of regulated EIA's (i.e. scoping reports, EIA reports, Basic assessments and EMPs) and incorporating specialists into the EIA team for any required specialist studies. Lucille has also undertaken and been involved with the regulated public participation process required for EIAs.

Her experience in compiling environmental management plans relate to construction, maintenance operations and wildlife management. Lucille has been involved in environmental compliance monitoring and auditing (environmental control officer) on a number of construction sites and borrow pits. She has also gained experience in GIS mapping.

Lucille has also been involved in waste studies and sustainable development projects, for example green procurement, elimination of illegal dumping strategies and water conservation and demand management plan.

EDUCATION

Qualification	Institution	Year
BSc (Environmental Management)	UNISA	2005
BSc (Hons) (Environmental Monitoring and Modelling)	UNISA	2008

COURSES & CONFERENCES

Course / Conference	Date
Management Training Session – Nelson Mandela Metropolitan University: Business School	2006
The Environment And the Project Cycle	March 2008
Technical and Business Report Writing	March 2009
Institute of Waste Management South Africa – Eastern Cape Mini Conference	August 2009
Project Management, Incl. MS Projects	March 2010
Legal Workshop on the Key Implications of the National Environmental Management: Integrated Coastal Management Act	April 2010
Environmental Awareness and Legal Liability for Management	May 2010
Green Star SA Accredited Professional Course	September 2011
WASTECON	October 2012
Contaminated Land Workshop	February 2013
Water Law in South Africa Workshop	August 2013
Institute of Waste Management of Southern Africa – Eastern Cape Conference: The Green Revolution	September 2013
National Wetlands Indaba	October 2013

PROFESSIONAL MEMBERSHIP

Institution Name	Membership	Year Joined
International Association of Impact Assessments (South Africa)	Member (No. 2668)	2010

EMPLOYMENT RECORD
August 2013 – Present: CEN IEM Unit

On 1 August 2013, Lucille joined the CEN Integrated Environmental Management Unit as **Senior Environmental Scientist**. Her responsibilities include project management, environmental impact assessments, public participation, environmental management plans and environmental compliance monitoring.

July 2007 – July 2013: BKS (Pty) Ltd / AECOM SA (Pty) Ltd

On 1 October 2012 Lucille was appointed as a **Senior Environmental Scientist** for the Infrastructure and Management Sector of BKS in Port Elizabeth after BKS and its subsidiaries rebranded on 1 November 2012 to become AECOM SA (Pty) Ltd. Her responsibilities included:

- Project management, including financial management on projects,
- Environmental Impact Assessments (basic assessment, scoping and EIA and associated public participation),
- Co-ordinating and assessing specialist studies,
- Environmental Management Plans/Programmes,
- Environmental Compliance Monitoring,
- Waste and Sustainability Strategies,
- Business development focusing within the Eastern Cape, KwaZulu Natal.
- GIS mapping.
- Liaison with clients.

In 2009, Lucille was promoted to **Senior Environmental Scientist** and was responsible for project management, environmental impact assessments (basic assessment, scoping and EIA and associated public participation), environmental management plans, environmental compliance monitoring, waste and sustainability strategies within the Eastern Cape.

In 2007, Lucille joined BKS (Pty) Ltd as an **Environmental Scientist**. Her responsibilities included undertaking environmental impact assessments (basic assessment, scoping and EIA and associated public participation), compiling environmental management plans and undertaking environmental compliance monitoring.

August 2000 – June 2007: Shamwari Game Reserve (Mantis Collection)

Lucille was the **Wildlife / Environmental Co-Ordinator** for Shamwari Game Reserve (Mantis Collection) from November 2003 – June 2007. During this time, her responsibilities included the following:

Compiling environmental management plans for construction operations and wildlife management for reserves in South Africa, United Arab Emirates and Morocco. Undertaking environmental compliance monitoring of construction sites within game reserves. Monitoring environmental aspects (e.g. water usage) within Mantis game reserves and organising related wildlife permits.

In November 2001, Lucille transferred to the Wildlife Department as the PA to the Wildlife Director.

In 2000, Lucille joined Shamwari Game Reserve and during this time her roles included Personal Assistant to the General Manager, Switchboard Operator and Reservationist.

June 1999 – July 2000: Formax

Computer room supervisor, Data Capturer

1997: University of Pretoria

Practical Tutor, Information Science Department

EXPERIENCE RECORD**ENVIRONMENTAL IMPACT ASSESSMENTS:**

- Scoping & Environmental Impact Assessment for the Kei Road Water Conveyance (pipeline and water treatment works) - *Aurecon*
- Basic Assessment for the St Francis Stormwater Upgrade - *Aurecon*
- Basic Assessment for the Patensie Prison WasteWater Treatment Works - *Aurecon*
- Basic Assessment for the Proposed SACE Ranger PV Plant, Uitenhage – *SACE*.
- Basic Assessment for the Proposed Expansion of Storage of Dangerous Goods at Rehau Polymer, Uitenhage – *Rehau Polymer*
- Basic Assessment of the Proposed Clearing of Vegetation for Fence Construction at SAPS Training Institute, Addo, Sundays River Valley Municipality – *Engineering Advice & Services*.
- Basic Assessment for Construction and Operation of a Filling Station with Rest and Retail Facilities, an Agri-Business Retail / Wholesale Facility adjacent to the Nanaga Farm Stall on the Remainder of Portion 8 Nanaga Hoogte No 229, Sundays River Valley Municipality – *Pantheon Trust*
- Basic Assessment for Proposed Upgrading of Stormwater Infrastructure in Valencia, Addo, Sundays River Valley Municipality – *LA Consulting Engineers*
- Basic Assessment for Proposed Walmer Storm Water Detention Ponds - *Nelson Mandela Bay Municipality*.
- Basic Assessment and Water Use Licence Applications for Proposed Gqunu Village Bridge Crossing and Road Upgrades - *Department of Land Reform and Rural Development*.
- Scoping and Environmental Impact Assessment for Proposed Malabar Phase 2 Extension 6 Housing Development - *Nelson Mandela Bay Municipality*.
- Scoping and Environmental Impact Assessment (Environmental Authorisation and Waste Management Licence) for a proposed private GLB+ Waste Disposal Facilities in Springs– *Vereeniging Refractories*
- Scoping and Environmental Impact Assessment for the proposed NMBM Reclaimed Effluent Scheme - *Nelson Mandela Bay Municipality*
- Scoping and Environmental Impact Assessment for a proposed demilitarization plant in De Aar, Northern Cape - *SANABO*

- Scoping and Environmental Impact Assessment for the proposed Residential Development on Farm Grants Valley, Kenton-on-Sea - *ACME Capital*
- Basic Assessment: Upgrading of gravel roads and stormwater infrastructure in Cluster E, Nelson Mandela Bay Municipality - *Izizwe Consulting Engineers*

ENVIRONMENTAL COMPLIANCE MONITORING:

- Environmental Control Officer: Remediation of Missionvale Bulk Sewer Main - *Nelson Mandela Bay Municipality*
- Environmental Control Officer: Rehabilitation of the Churchill Pipeline at the Van Stadens River Mouth, Phase 2 - *Nelson Mandela Bay Municipality*
- Environmental Control Officer: Construction of Recreational Facilities for Van Der Kemp's Kloof Nature Reserve - *Nelson Mandela Bay Municipality*
- Environmental Control Officer: Upgrading of Gravel Roads and Stormwater in Cluster E – *Letsunyane Associates*
- Performance Assessment of 9 Borrow Pits in the Kouga Local Municipality - *Cacadu District Municipality*
- Environmental Control Officer: Nelson Mandela Bay Multi-Purpose Stadium – *Nelson Mandela Bay Municipality*
- Environmental Control Officer: Construction of Infrastructure within Zone 2 Coega Industrial Development Zone

SUSTAINABILITY PROJECTS:

- Environmental Screening Assessment for Portion 62 of Ongegunde Vryheid No 746, St Francis – *Aurecon*
- Water Conservation and Demand Management Plan for the Dube TradePort, including King Shaka International Airport – *Dube TradePort*
- Environmental Management System for the Nelson Mandela Bay Municipality 2010 Multi-Purpose Stadium – *Nelson Mandela Bay Municipality*
- Strategy for the Elimination of Illegal Dumping and Maintenance of Municipal Land - *Nelson Mandela Bay Municipality*
- Green Procurement Plan for the Nelson Mandela Bay Municipality - *Nelson Mandela Bay Municipality*
- Helenvale Waste Study - *Cabitech Project Managers*

ENVIRONMENTAL MANAGEMENT PROGRAMMES:

- Coastal Management Programme for the Nelson Mandela Bay Municipality
- Environmental Management Programme for Groundwater Drilling Investigations - *Nelson Mandela Bay Municipality*
- Environmental Management Programme for Existing Gravel Borrow Pits for Routine Road Maintenance - *EC Department of Roads & Public Works*
- Environmental Management Plan: Port Elizabeth Airport Storm Water – *ACSA*
- Borrow Pit / Quarry Authorisation Application: Elandsdrift Dam - *Department of Water Affairs*

LANGUAGES

	Speak	Read	Write
English	Excellent	Excellent	Excellent
Afrikaans	Good	Good	Good

Michael Cohen

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Date of Birth:

18 January 1945

Nationality:

South African

Languages:

English (mother tongue), Afrikaans (good)

Qualifications:

B.Sc. (Zoology, Psychology. Wits. RSA).
B.Sc. (Hons) (Wildlife Management. U Pretoria).
M.Ag. (Wildlife and Fisheries Ecology: Texas A&M). (1973)
D.Sc. (Wildlife Management. U Pretoria). (1988)

Institutions:

South African Council of Natural Scientists (SACNAS)
Professional Member - Institute of Ecologists and Environmental Scientists

Member - International Association for Impact Assessment - South African Chapter

Member of IUCN Commission on National Parks and Protected Areas. (CNPPA) (1994 -1996)

Member of IUCN World Commission on Protected Areas (1997 – current)

Honorary Member of the Institute of Environment and Recreation Management of Africa 1995

Appointed to the Board of the Institute of Ecologists and Environmental Scientists - April 1997-May 2000

Referee to environmental assessment practitioners applying to the Interim Certification Board for Environmental Assessment Practitioners (ICB) for professional certification (2001 - present)

Appointed to the Council of the Provincial Heritage Resource Authority. Ministry of Sport, Arts and Culture. Province of the Eastern Cape 2003 (Resigned)

Professional History:

May 1996 – Present

Environmental Consultant: CEN Integrated Environmental Management Unit

July 1995 - May 1996

Director: Eastern Cape Nature Conservation. Ministry of Economic Affairs, Environment and Tourism. Left to start own consultancy business

January 1993 - June 1995

Regional Director: Cape Nature Conservation. Eastern Cape Region

October 1985 - December 1992

Deputy Director: Environment. Chief Directorate: Environmental Conservation
Directorate: Environmental Management Department of Environment Affairs

July 1983 - September 1985

Assistant Director: Environment Chief Directorate: Environmental Conservation
Department of Environment Affairs

March 1981 - July 1983

Chief Professional Officer Chief Directorate: Environmental Conservation Department of
Environment Affairs

June 1978 - February 1981

Regional Ecologist: Transvaal Nature Conservation Division: Eastern Region (TPA)

August 1976 - May 1978

Officer-in-Charge. Suikerbosrand Nature Reserve Transvaal Nature Conservation
Division (TPA)

1972 - July 1976

Research Assistant Eugene Marais Chair of Wildlife Management University of Pretoria

Specialist Courses:

- ✿ 1993 Completed the certificate course in Public Management at the University of Pretoria. The certificate was awarded Cum Laude
- ✿ 1989 Completed course in Practical Techniques in Environmental Impact Assessment conducted by the Environmental Evaluation Unit at the Graduate School of Business, University of Cape Town
- ✿ 1973 Completed the International Seminar on the Administration of National Parks and Equivalent Reserves held in the United States, Canada and Mexico
- ✿ 1973 Completed short course in Tropical Ecology while at Texas A & M University

International Experience:

- ✿ Nominated as a member of an international team to evaluate the professional

activities of the Nature and National Parks Protection Authority of Israel
(Evaluation was to be conducted during November 2000)

- ✿ 1994 - Represent South Africa as Scientific Councillor on the Convention on Migratory Species - Nairobi, Kenya
- ✿ 1994 - Alternate delegate for South Africa at the Conference of the Parties of the Convention on Migratory Species - Nairobi, Kenya
- ✿ 1994 -Member of the negotiations team for the African Eurasian Waterfowl Agreement - Nairobi, Kenya
- ✿ 1993 -Represent South Africa as Scientific Councillor on the Convention on Migratory Species - Bonn, Germany
- ✿ 1992 -Visit to Israel to hold preliminary discussions on a bilateral agreement on Nature and Environmental Conservation
- ✿ 1992 -Participate in the IV World Congress on National Parks and Protected Areas - Caracas - Venezuela - Present two papers at the Congress and participate in numerous working groups on a wide range of protected area issues
- ✿ 1991 - 1995 South African Representative on the Scientific Council for the Convention on Migratory Species
- ✿ 1990 -Visit to England and Israel (met with a variety of nature and environmental conservation organisations) for discussion on joint projects and for discussions on national and regional protected area systems plans
- ✿ 1989 -Member of South African delegation to the XV Antarctic Treaty meeting, Paris
- ✿ 1988 -Delegate to the 17th IUCN General Assembly - Costa Rica
- ✿ 1986 -Seminar on Environmental Education - Israel

Specialisation in Firm:

Integrated Environmental Management, Environmental Impact Assessment, Rural Development, Natural Resource Planning and Management

Recent Experience:

Environmental Impact Assessment:

2006 – To Present - Selected Projects

- ✿ Scoping Exercise for a Proposed Pilot Aquaculture Operation for the Grow-Out of *Penaeus vannamei* Prawn Larvae For Commercial Purposes Within the Coega Industrial Development Zone at Port Elizabeth Eastern Cape Province
Ballastrada Trade and Investments (Pty) Ltd, Trading as SeaArk Africa
- ✿ Environmental Management Plan for a Pilot Aquaculture Operation for the Grow-Out of *Litopenaeus vannamei* Prawn Larvae For Commercial Purposes, Coega Industrial Development Zone at Port Elizabeth, Eastern Cape Province
- ✿ Environmental Assessment for a Proposed Interpretive Centre, Day Visitor Site and Boardwalk Trail in the, Baviaanskloof Mega-Reserve Wilderness Foundation
- ✿ Environmental Assessment for a Proposed Residential Development, Remainder of Erf 328 Kabeljous River Jeffrey's Bay
- ✿ Environmental Assessment for the Augmentation of the Jeffrey's Bay Bulk Water Supply System (Pump Station, Supply Mains from Churchill Supply Mains and 5 MI Reservoir)
- ✿ Environmental Assessment for the Proposed Augmentation of the Jeffrey's Bay Main Electrical Substation
- ✿ Environmental Assessment for a Proposed Residential Development, Remainder of Farm Noorsekloof 327, Jeffrey's Bay
- ✿ Environmental Assessment for the Proposed Rezoning and Subdivision of Portion of Portion 8 of the Farm Kabeljous River No. 321, Jeffrey's Bay

- ✿ Sensitivity Assessment for the Subdivision of Portion 1 (Remaining Extent) of the Farm Klein Buffelsfontein No 477/1
- ✿ Environmental Assessment for a Proposed Resort Development, Portion 84 of the Farm De Stades No. 485, Beachview
- ✿ Environmental Assessment for the Rezoning and Subdivision of the Remainder of the Farm Boschkloof No. 896, Division of Humansdorp
- ✿ Environmental Assessment for the Rezoning of Portion B of the Remainder of Farm 428 to “Special Zone Nursery”
- ✿ Environmental Management Programme Report for a Proposed Sand, Clay and Calcrete Mining Operation in the Coega Valley on Portions 1 and 4 of the Farm Welbedachtsfontein, 300, Port Elizabeth
- ✿ Environmental Assessment for Subdivision and Rezoning of Erf 483 Bushman’s River for Residential Development
- ✿ Environmental Assessment for the Rezoning of Farms 328/1, 328/2 and Farm 779, Jeffrey’s Bay, Kabeljous-on-Sea

2001 – 2004 Selected Projects

- ✿ Environmental Assessment for the Extension of the Tsitsikamma Golf Estate.
- ✿ Environmental Assessment for a Residential Development in Jeffrey’s Bay.
- ✿ Environmental Assessment for a Township Development in Jeffrey’s Bay
- ✿ Environmental Assessment for Luxury Lodges and a Tent camp on the Mkambati Nature Reserve
- ✿ Environmental Assessment for a Boat Launch Facility at Gwe-Gwe, Mkambati Nature Reserve
- ✿ Environmental Assessment for a Boat Launch Facility at Kings Beach Port Elizabeth
- ✿ Environmental Assessment for the Port Elizabeth Golf Course Estate

- ✿ Environmental Assessment for a Resort Development on the Kromme River
- ✿ Environmental Assessment for the Establishment of a Presidential Suite at the Eagles Cragg Lodge, Shamwari Game Reserve
- ✿ Environmental Assessment for the Establishment of a Golfing Estate at the Port Elizabeth Golf Club
- ✿ Environmental Assessment for the Eskom Tsitsikamma 66kV powerline
- ✿ Environmental Assessment for three resorts in the Zuurrberg Area
- ✿ Environmental Assessment for a Satellite Resort on the Gorah Concession Area, Addo Elephant National Park
- ✿ Environmental Assessment for the Alicedale Golf Resort Development
- ✿ Environmental Assessment for three lodges on the Lalibella Game Reserve
- ✿ Environmental Assessment for the closure of the Marina Martinique Small Boat Harbour
- ✿ Environmental Assessments for two caravan parks on the Gamtoos River
- ✿ Environmental Assessment for the upgrading of the Road from Flagstaff to Holy Cross
- ✿ Biophysical Environmental Assessment on the proposed ESKOM Power line to feed the Aluminium Smelter at Coega
- ✿ Environmental Assessment of the Bayethe Game Reserve
- ✿ Environmental Assessment of Eagles Cragg Game Lodge – Shamwari Game Reserve
- ✿ Environmental Impact Assessment on the Sanderlings Coastal Wetland Resort
- ✿ Scoping Report for boat mooring facilities on the Kromme River to serve a residential resort

- ✿ Class Environmental Assessment for Working for Water projects in terms of the new DWAF Environmental Evaluation System
- ✿ Environmental Scoping for a Housing Development on a Portion of Land in the Van Stadens Wildflower Nature Reserve
- ✿ Environmental Impact Assessment on two Leather Tanneries in Middelburg, Eastern Cape Province
- ✿ Compilation of an Environmental Evaluation System for the Department of Water Affairs and Forestry (DWAF) (Eastern Cape) This environmental evaluation system is currently being incorporated into the national DWAF's Environmental Management System
- ✿ Compilation of an Environmental Evaluation Administration System and Manual for the Department of Water Affairs and Forestry

Natural Resource Management

- ✿ Environmental Management Plan for the King Williamstown - East London National Road
- ✿ Investigation into the Protected Area Estate in the Province of the Eastern Cape: A Review of Goals and Objectives, Strengths and Weaknesses and an Analysis of Various Institutional Structures Suitable for Achieving the Goals and Objectives.
- ✿ Design and run RSA's premier stewardship programme (The South African Natural Heritage Programme and Sites of Conservation Significance Programme)
- ✿ Co-ordinate South African Plan for Nature Conservation
- ✿ Management Plan for the Suikerbosrand Nature Reserve
- ✿ Management Plan for the Marion and Prince Edward Islands (Draft).
- ✿ Protected Area Systems Plan
- ✿ Management Plans for game farmers

- ✿ Bioregional Planning

Policy

- ✿ Arrange and run two DWAF regional information sessions for the DWAF Regional Offices and Provincial Government Departments of the Western and Eastern Cape on the Implementation of the DWAF's (Eastern Cape) Environmental Evaluation System (2001). A further seven provincial workshops will follow.
- ✿ Run five Eastern Cape Information Sessions for District Municipalities in the Eastern Cape Province on the Implementation of the DWAF Environmental Evaluation System (2001)
- ✿ Member DANCED Review Mission on the National Waste Management Strategy
- ✿ Compile South African National Report to the Convention on Biological Diversity
- ✿ Sub-consultant to the Drafting team for the National White Paper on Integrated Pollution Control and Waste Management.
- ✿ Member of a six person drafting team for the National Green Paper on an Environmental Management Policy for South Africa where I represented the nine provinces.
- ✿ Appointed as one of the Reference Group for the National White Paper on an Environmental Management Policy for South Africa.

Papers and Publications:

- ✿ Author and co-author of some 27 papers, reports and conference presentations as well as a number of popular papers on environmental conservation.

Selected Clients

South African

- ✿ Aurecon

- ✿ BKS
- ✿ Camdeboo Local Municipality
- ✿ Blue Crane Development Agency
- ✿ Crown Chickens
- ✿ Department of Environmental Affairs and Tourism
- ✿ Department of Water Affairs and Forestry
- ✿ Lalibela Private Game Reserve
- ✿ Mandela Bay Development Agency
- ✿ Municipality of Port Elizabeth (Nelson Mandela Metropole)
- ✿ Ninham Shand (Eastern Cape)
- ✿ Portnet
- ✿ Shamwari Game Reserve (Mantis Collection)
- ✿ South African National Roads Agency Ltd
- ✿ Stewart Scott (Eastern Cape)
- ✿ Telkom South Africa
- ✿ Vodacom South Africa
- ✿ Wilderness Safaris

International

- ✿ DANCED (Denmark)
- ✿ IDRC (Canada)