

CURRICULUM VITAE



JONATHAN CROWTHER

OPERATIONS MANAGER

Environmental Management Planning & Approvals,
Africa

QUALIFICATIONS

M.Sc	1988	Environmental Science
B.Sc (Hons)	1983	Geology
B.Sc	1982	Geology and Geography

EXPERTISE

- Environmental Impact and Social Assessment
- Environmental Management Plans/Programmes
- Public Participation & Facilitation
- Environmental Compliance & Monitoring

Jonathan is the SLR Operations Manager for Environmental Management Planning & Approvals, Africa. He has over 29 years of experience with expertise in a wide range of environmental disciplines, including Environmental Impact and Social Assessments (ESIA), Environmental Management Plans/Programmes, Environmental Planning, Environmental Compliance & Monitoring, and Public Participation & Facilitation.

He has project managed a large number of offshore oil and gas EIAs for various exploration and production activities in Southern Africa. He also has extensive experience in large scale infrastructure projects including some of the largest road projects in South Africa, ESIA's for waste landfill facilities, general industry and the built environment.

PROJECTS

Oil and Gas Exploration and Production

Shell Namibia Upstream BV – EIA for proposed offshore well drilling, Namibia (2017)

EIA for the drilling of up to two deep water exploration wells in Petroleum Exploration Licence 39 off the coast of southern Namibia. Provided project management and quality review during the Scoping Phase of the EIA.

PGS Exploration (UK) Limited – Reconnaissance Permit Application to undertake 2D and 3D seismic surveys, South Africa (2017)

SLR Consulting was appointed to undertake an Environmental Management Programme process for a Reconnaissance Permit Application to undertake 2D and 3D speculative seismic surveys of the East Coast, South Africa. Project director, documentation review and quality review.

Rhino Oil & Gas Exploration South Africa (Pty) Ltd - EIAs for various onshore exploration right applications, South Africa (2015 - 2017)

Individual ESIA's were undertaken for exploration right applications for the initial exploration phases for onshore gas in five license areas across the eastern part of South Africa. Provided high level management support and documentation review.

<p>Spectrum Geo Limited – Reconnaissance Permit Application to acquire 2D multi-client seismic data, South Africa (2017)</p>	<p>Undertook the Environmental Management Programme for a reconnaissance permit application to acquire 2D multi-client seismic survey data off the Southern Coast, South Africa. Project director and provided quality review.</p>
<p>Rhino Oil & Gas Exploration South Africa (Pty) Ltd – Application for exploration programmes for two offshore blocks, South Africa (2015 - 2017)</p>	<p>Appointed to undertake an EIA for exploration right applications for 2D seismic surveys for each of two blocks located offshore of the West Coast, South Africa. Project director and quality control of the EMP.</p>
<p>Petroleum Geo-Services (Pty) Ltd – Addendum application for expansion of speculative seismic survey, South Africa (2016)</p>	<p>Facilitated and undertook the EMP Addendum for the expansion of a speculative seismic survey off the South Coast of South Africa. Project management and quality review of the EMP.</p>
<p>BHP Billiton Petroleum (South Africa 3B/4B) Limited - Relinquishment of Licence Block 3B/4B, South Africa (2016)</p>	<p>Application for a Closure Certificate and consolidated Environmental Risk Report and Closure Plan for the relinquishment of Licence Block 3B/4B (ER 12/3/23) off the West Coast, South Africa. Project director and quality review.</p>
<p>Murphy Oil Corporation - Exploration well drilling in Licence Blocks 2613A and 2613B, Namibia (2014-2016)</p>	<p>EIA for the drilling of up to two exploration wells in Licence Blocks 2613A and 2613B off the coast of Namibia. Project director and quality review.</p>
<p>Sunbird Energy Ltd - Ibhubesi Gas Project, South Africa (2013 - 2016)</p>	<p>EIA for the proposed Ibhubesi Gas Project, West Coast, South Africa. The project includes the development of an offshore well field, a 400 km offshore pipeline, an onshore pipeline and onshore processing facility. Tasks involved stakeholder engagement, document compilation, high level project management, quality control and overall review of the EIA.</p>
<p>Anadarko South Africa (Pty) Ltd - Exploration Right renewal for Licence Blocks 5, 6 & 7, South Africa (2015)</p>	<p>Preparation of an Environmental Compliance Report as part of the Exploration Right renewal for Licence Blocks 5, 6 & 7 (ER 12/3/224) off the South-West Coast of South Africa. Project director and quality review.</p>
<p>ExxonMobil Exploration and Production South Africa Ltd – Well drilling Roadmap and Permitting Plan, South Africa (2015)</p>	<p>Development of a high level Regulatory Roadmap and Permitting Plan for offshore exploration well drilling and associated onshore activities for ExxonMobil's South African licence areas, focusing on the Tugela South licence area off the East Coast, South Africa. Project director and quality review.</p>
<p>Nabirm Energy Services - 2D seismic survey compliance, Block 2113, Namibia (2014- 2015)</p>	<p>EMP Compliance and audit services for a 2D seismic survey in the offshore portion of Block 2113A in the Walvis Basin off the coast of Namibia. Project director and quality review.</p>

<p>Thombo Petroleum (Pty) Ltd – Exploration Right application to undertake well drilling in Block 2B, South Africa (2014- 2015)</p>	<p>The scope of work included undertaking an EIA and EMP Addendum for exploration well drilling in Block 2B situated off the West Coast of South Africa. Project management and quality control tasks were undertaken.</p>
<p>Murphy Oil Corporation and TGS-NOPEC Geophysical Company ASA – 3D seismic survey, Licence Blocks 2613A and 2613B, Namibia (2013-2014)</p>	<p>EIA for a proposed 3D seismic survey in Licence Blocks 2613A and 2613B, Lüderitz Basin, off the coast of Namibia. Project director and quality review.</p>
<p>Shell South African Upstream B.V – EIA and EMP Amendment to undertake exploration well drilling in Orange Basin, South Africa (2013-2015)</p>	<p>EIA and EMP for an amendment to the existing Exploration Right to undertake Exploration Well Drilling in the Orange Basin Deep Water Block, West Coast, South Africa. Provided client interaction, high level management and quality control.</p>
<p>Cairn South Africa (Pty) Ltd – Exploration right amendment to undertake well drilling in Block 1, South Africa (2013-2015)</p>	<p>EIA and EMP for an amendment to the existing Exploration Right to undertake Exploration Well Drilling in Block 1, West Coast, South Africa. Project director and quality control of the EIA.</p>
<p>OK Energy Ltd - Proposed exploration programme in the Northern Cape Ultra-deep Licence Area, South Africa (2014)</p>	<p>EMP for an Exploration Right application for undertaking an exploration programme (including seismic survey, tensor gravity and magnetics, bathymetry survey, seabed sampling) in the Northern Cape Ultra-deep Licence Area in the Orange Basin off the Northwest Coast of South Africa. Project director and quality review.</p>
<p>Total E and P South Africa (Pty) Ltd – Deep Water well drilling in Block 11B/12B, south Africa (2013-2014)</p>	<p>Undertook the Environmental Compliance services during and the environmental audit on completion of the deep water well drilling operation in Block 11B/12B, South Coast South Africa. Audit services, compiled the audit report and project management.</p>
<p>Anadarko South Africa (Pty) Ltd - Seafloor geochemical sampling programme, Licence Blocks 5/6 & 7, South Africa (2013)</p>	<p>EMP Addendum for a seafloor geochemical sampling programme in Petroleum Licence Blocks 5/6 & 7 off the South-West Coast of South Africa. The sampling programme consisted of seafloor sampling (piston coring), seafloor heat flow measurements and a possible multi-beam bathymetry survey. Project director and quality review.</p>
<p>Spectrum ASA – Speculative 2D seismic survey, Namibia (2013)</p>	<p>EIA for a proposed 2D speculative seismic survey in the Orange Basin, Namibia. Project director and provided quality control.</p>
<p>CGG Services SA - Proposed 2D speculative seismic survey in the Durban Basin, South Africa (2013)</p>	<p>EMP for a Reconnaissance Permit application for undertaking a speculative 2D seismic survey in the Durban Basin off the East Coast of South Africa. Project director and quality review.</p>

Tullow Kudu Limited – 2D and 3D seismic survey, Namibia (2013)	ESIA for a proposed 3D and 2D seismic survey in Licence Blocks 2012B, 2112A and 2113B, Walvis Basin, Namibia. Project director, client interface and quality control.
Sasol Petroleum International (Pty) Ltd – 2D seismic survey programme, South Africa (2012-2013)	EMP for a proposed 2D seismic survey programme in the Durban and Zululand Basins off the East Coast of South Africa. Project director and provided quality control.
Anadarko South Africa (Pty) Ltd - Exploration programme, Licence Block 2C, South Africa (2012-2013)	EMP for a proposed exploration programme in Block 2C off the West Coast, South Africa. The exploration programme included 2D/3D seismic surveys, multi-beam bathymetry survey, seafloor sampling and seafloor heat flow measurements. Project director and quality review.
Total E and P South Africa (Pty) Ltd – Application for various exploration activities, South Africa (2012-2013)	EMP for a proposed 2D seismic survey, sonar bathymetry and drop core sampling in the Outeniqua South Area, South Coast, South Africa. Project director and quality review.
Impact Africa Limited - Exploration programme, Tugela North, South Africa (2012-2013)	EMP for a proposed exploration programme in the Tugela North area off the East Coast, South Africa. The exploration programme included Airborne geophysical acquisition (gravity and magnetics), 2D/3D seismic surveys, seafloor heat flow measurements, multi-beam bathymetry survey and seafloor sampling. Project director and quality review.
PetroSA (Pty) Ltd – Amendment application for a seismic survey campaign, South Africa(2012)	EMP Amendment for a proposed seismic survey campaign in Block 1, West Coast, South Africa. Project director and EMP review.
Bayfield Energy Ltd – EMP amendment for a proposed seismic survey, South Africa (2012)	EMP Amendment for a proposed seismic survey in the Pletmos Inshore Area, South Coast, South Africa. Project director and report review.
CGG Veritas Services (UK) Ltd – Speculative seismic survey, South Africa (2012)	EMP for a proposed speculative seismic survey off the East Coast, South Africa. Project director and quality control of the EIA.
Signet Petroleum Ltd – Application to undertake 2D and 3D seismic surveys, Namibia (2011)	EIA for proposed 2D and 3D seismic surveys in Block 2914B off the southern coast of Namibia. Project director, client interaction and quality control.
PetroSA (Pty) Ltd - 2D/3D seismic survey, Blocks 5 & 6, South Africa (2011)	EMP for a 2D/3D seismic survey campaign in Blocks 5 & 6 off the South-West Coast of South Africa. Project director and quality review.
Chariot Oil & Gas - Proposed seismic survey off the coast of Namibia (2011)	EIA process for a seismic survey off the coast of Namibia. EIA and EMP compliance monitoring services were also provided during the survey operations and a Close-out Report produced. Project director and quality review.

<p>HRT Netherlands B.V. – Application to undertake a 3D seismic survey, Namibia (2010-2011)</p>	<p>EIA for a 3D seismic survey in two offshore areas, Namibia. Project director and quality review.</p>
<p>Atacama Consulting for Dominion Oil – Proposed seismic survey, Uganda (2010)</p>	<p>Undertook an independent review of the EIA undertaken for a proposed onshore and offshore seismic survey in the Queen Elizabeth National Park, Uganda. Site visit, documentation review and report.</p>
<p>PetroSA (Pty) Ltd – Proposed F-O Field development, South Africa (2008-2011)</p>	<p>EIA and EMP for the development of the F-O Gas Field in Petroleum Licence Block 9, South Coast, South Africa. The project included the drilling of up to 14 production wells in the F-O Gas Field and connecting the gas field to the existing F-A Platform via a new 39 km subsea production pipeline. Project director, client liaison and quality control.</p>
<p>Enigma Oil and Gas – Proposed 2D and 3D seismic survey, Namibia (2008-2009)</p>	<p>EIA for proposed 2D and 3D seismic surveys in three areas off the coast of Namibia.. Project management and quality review.</p>
<p>PetroSA (Pty) Ltd – 3D seismic survey, Block 1, West Coast, South Africa (2008)</p>	<p>EMP for a 3D seismic survey in Block 1 (ER83) off the West Coast of South Africa. Project director and quality review.</p>
<p>Petroleum Agency SA – South African Shelf Claim Project (2007)</p>	<p>Compiled an Environmental Report for a proposed seismic survey to be undertaken as part of the South African Shelf claim project. Project management and quality control.</p>
<p>PetroSA (Pty) Ltd – Construction of the South Coast Gas Project, South Africa (2007)</p>	<p>Management of various aspects of the EMP for the construction phase of the South Coast Gas project, including being appointed as the Chair and Secretariat of the Environmental Monitoring Committee, Mossel Bay, South Africa.</p>
<p>BHP Billiton Petroleum (Americas) Inc – Proposed 2D seismic survey, Namibia (2007)</p>	<p>EIA for a proposed 2D seismic survey in the Northern Block, Namibia. Project management and quality control.</p>
<p>Forest Exploration International (SA) – Proposed Ihubesi Gas Project (2006-2008)</p>	<p>EIA and EMP for the proposed Ihubesi Gas Project. This included the drilling of 99 wells, offshore production platforms, a 70 km pipeline to the shore and an onshore processing plant. The project is located off West Coast, South Africa. Project director, client interaction and quality review.</p>
<p>Ferromarine Africa - Oil and Gas Service Hub in the Port of Cape Town and Fabrication Yard for Oil and Gas Structures in the Port of Saldanha, South Africa (2006)</p>	<p>Construction and Operational EMPs for two facilities for the servicing and fabrication of oil and gas structures, i.e. an oil and gas service hub at A-Berth in the Port of Cape Town and an oil and gas structures fabrication yard in the Port of Saldanha, South Africa. Project director and quality review.</p>

<p>BHP Billiton Petroleum (Americas) Inc – Deep water exploration well drilling, South Africa (2004-2007)</p>	<p>Compiled an Expanded Environmental Notification for a proposed deep water exploration well in Petroleum Licence Block 3B/4B off the West Coast of South Africa. Project management, client interaction and quality control.</p>
<p>PetroSA (Pty) Ltd – South Coast Gas Development Project, South Africa (2004-2007)</p>	<p>EIA and EMP for the proposed South Coast Gas Development project in Petroleum Block 9, South Africa. The project included well drilling, injection wells, an offshore gas pipeline and the connection to existing infrastructure. Involvement included the role as project director, client interaction, facilitation of stakeholder interaction and quality control.</p>
<p>Pioneer Natural Resources (Pty) Ltd – Application for the drilling of three exploration wells (2003)</p>	<p>Preparation of an Environmental Notification document and Close-out Reports for the drilling of three exploration wells in Block 9, South Coast, South Africa. Project manager, stakeholder engagement, report compilation and quality control.</p>
<p>PetroSA (Pty) Ltd – Proposed development of the Sable Oil Field, South Africa (2001)</p>	<p>Undertook the EMPR for the proposed development of the Sable Oil Field, offshore South Coast, South Africa. This included well drilling, seafloor infrastructure and an FPSO. Project manager, stakeholder engagement, report compilation and quality control.</p>
<p>Petroleum Agency SA – Generic EMPR for oil and gas prospecting, South Africa (2001)</p>	<p>The appointment was to develop a Generic EMPR for oil and gas prospecting for the whole of the South African Offshore. This covered seismic surveys and exploration well drilling. Key impacts were identified and assessed, and templates were developed for future explorers. Client interaction, project management, report compilation and quality control.</p>
<p>Brown and Root on behalf of Shell Exploration and Production Namibia – Route selection for the proposed Kudu Gas pipeline (1998-1999)</p>	<p>Provided environmental baseline and legislative input into the route selection for the proposed Kudu Gas pipeline between Oranjemund, Namibia and Cape Town, South Africa. Site visit, client interaction, report delivery and quality control.</p>
<p>Soekor E&P (Pty) Ltd – Extension of the Oribi Oil Production facility (1997)</p>	<p>In a joint venture with the CSIR, undertook the EIA and EMPR for the proposed extension of the Oribi Oil Production facility and hydrocarbon exploration in Block 9 off the South Coast, South Africa. Management of the process and compilation of the EIA and EMPR.</p>
	<p>Road and related infrastructure</p>
<p>GIBB (Pty) Ltd for Western Cape Government (WCG): Department of Transport & Public Works - Swartberg River Bridge, South Africa (2016-2017)</p>	<p>Basic Assessment process for the proposed implementation of erosion protection measures along a section of the Swart River which is traversed by the TR 34, approximately 7 km north of Prince Albert. Project director and quality control.</p>

<p>SMEC SA (Pty) Ltd for Saldanha Bay IDZ Licencing Company (SOC) Ltd - Proposed new access roads to the Saldanha Bay IDZ, south Africa (2016-2017)</p>	<p>Basic Assessment for the construction of two new access roads linked to the back of port area of the Saldanha Bay IDZ. Project director and quality review.</p>
<p>Bergstan SA Consulting and Development Engineers (Pty) Ltd for WCG: Department of Transport and Public Works – Proposed stormwater repairs on Main Road 101, Cape Town, South Africa (2014-2016).</p>	<p>Basic Assessment and environmental compliance for the storm damage repair of slopes and roadway on MR101 between Simon’s Town and Smitswinkel Bay, Cape Town. Project director, stakeholder engagement, alternate ECO and quality review.</p>
<p>Bergstan SA Consulting and Development Engineers (Pty) Ltd for WCG: Department of Transport and Public Works – Resurfacing of a section of Victoria Road, Cape Town, South Africa (2014-2015)</p>	<p>Environmental compliance services for the repair and resurfacing of Victoria Road (MR103) km 2.1 to km 4.75 between Oudekraal and Llandudno, Cape Town. Project director.</p>
<p>Gibb (Pty) Ltd for WCG: Department of Transport & Public Works - Proposed changes to the proclaimed road network affected by the raising of the Clanwilliam Dam wall, South Africa (2013-ongoing)</p>	<p>Environmental input and facilitation of the public participation process for the proposed changes to the proclaimed secondary road network that would be affected by the raising of the Clanwilliam Dam wall. Project director, stakeholder engagement and quality review.</p>
<p>Kantey & Templer Consulting Engineers (Pty) Ltd for WCG: Department of Transport & Public Works, South Africa (2012-2017)</p>	<p>Basic Assessment for the proposed safety and operational improvement to the R44 Road between Somerset West and Stellenbosch. Project director, stakeholder engagement and quality review.</p>
<p>Hatch GOBA (Pty) Ltd for WCG: Department of Transport & Public Works, South Africa (2015-2016)</p>	<p>Maintenance Management Plan for proposed flood damage repairs to bridge and culvert structures along various roads in the Eden and Winelands Municipal areas between Ladismith and Montagu, Western Cape. Project director and provided quality review.</p>
<p>ERO Engineers (Pty) Ltd for WCG: Department of Transport & Public Works, South Africa (2015-2016)</p>	<p>Compiled a Maintenance Management Plan for the proposed rehabilitation and reseal of Main Road 233, between the R27 and just north of Langebaan, Western Cape. Project director and quality review.</p>

<p>Bergstan SA Consulting and Development Engineers (Pty) Ltd for WCG: Department of Transport & Public Works (2014-2015)</p>	<p>Basic Assessment for the storm damage repair of slopes and roadway on Main Road MR101 between Simons Town and Smitswinkel Bay, Western Cape. Project director and quality review.</p>
<p>AECOM SA (Pty) Ltd. for South African National Roads Agency SOC Limited – Upgrading of National Route 7, South Africa (2013-2015)</p>	<p>The project involved the proposed upgrading of the National Route 7 between Leliefontein and Hopefield intersections near Malmesbury, Western Cape. This included widening of the existing road to a dual carriageway, consolidating access and secondary roads and the addition of new interchanges. A Basic Assessment and an EIA were undertaken for two different portions of this section of the N7. Project director, stakeholder engagement and quality review.</p>
<p>EFG Engineers (Pty) Ltd for WCG: Department of Transport and Public Works –Hermanus to Stanford Road Upgrade Project, South Africa (2013-2014)</p>	<p>Basic Assessment for the upgrading of Trunk Road 28 Section 2 (TR28/2) between Hermanus and Stanford, Western Cape. Project director, stakeholder engagement and quality review.</p>
<p>BKS (Pty) Ltd for WCG: Department of Transport & Public Works – Road network improvements to support Saldanha IDZ, South Africa (2012-2015)</p>	<p>EIA for the proposed road network improvements required to support the development of the Saldanha Industrial Zone and port expansion, Western Cape. Project director and quality control.</p>
<p>Aurecon (Pty) Ltd for WCG: Department of Transport & Public Works – Flood repair of damaged structures, South Africa (2012-2013)</p>	<p>Five Basic Assessments for the repair of flood damaged structures along roads in the Eden District Municipality, Southern Cape. Project director and quality control.</p>
<p>ERO Engineers (Pty) Ltd for South African National Roads Agency Limited – N7 Improvement between Melkbos and Atlantis intersections, South Africa (2010-2011)</p>	<p>EIA for the improvement of National Route N7 Section1 between Melkbos and Atlantis Intersections, Western Cape. The project involved duelling of the N7, consolidating of access points and the upgrade of the existing intersections to grade-separated interchanges. Project director, facilitated stakeholder engagement and provided quality control.</p>
<p>BKS (Pty) Ltd for South African National Roads Agency Limited – Improvement of five bridges over the Orange River, South Africa (2009-2011)</p>	<p>A Basic Assessment was undertaken for the improvement and widening of five large bridges where the R27 National Route, Section 10 & 11, cross the Orange River between Kenhardt and Keimoes, Northern Cape. Further services involved providing environmental compliance services (ECO services) during the construction operation and completion auditing. Overall project director, attended specialist site visit and review all project documentation.</p>

<p>Bergstan South Africa (Pty) Ltd for WCG: Department of Transport & Public Works – Repair to flood damaged bridges (2009-2010)</p>	<p>Basic Assessment for the reconstruction of three flood damaged bridges in the Hex River Valley, Western Cape. Project director and quality control.</p>
<p>UWP (Pty) Ltd for South African National Roads Agency Limited – Rehabilitation of National Routes N1 and N9 near Colesberg, South Africa (2008-2011)</p>	<p>Basic Assessment for the proposed rehabilitation of National Route 9 Section 7 from Wolwefontein (km63.63) to Colesberg (km94.84) including a new N1/N9 access interchange at Colesberg, Western Cape. Project director and quality review.</p>
<p>HHO Africa (Pty) Ltd for WCG: Department of Transport and Public Works – Construction of the Koeberg Interchange, Cape Town, South Africa (2008-2011)</p>	<p>Environmental compliance during the construction phase of the Koeberg Interchange upgrade. Alternative ECO services and project director.</p>
<p>BKS (Pty) Ltd for City of Cape Town – Construction of the Hospital Bend upgrade, Cape Town, South Africa (2008-2010)</p>	<p>Environmental compliance for the construction phase of the upgrading of the N2 Hospital Bend, Cape Town. Facilitated the Environmental Monitoring Committee, alternative ECO and project manager.</p>
<p>BKS (Pty) Ltd for WCG: Department of Transport & Public Works - Upgrading of TR 2, M5 Viaduct to Black River Parkway Interchange, South Africa (2007-2011)</p>	<p>Basic Assessment and environmental compliance during construction for the upgrading of Trunk Road 2 Section 1 (M5) between the M5 Viaduct and the Black River Parkway Interchange, Cape Town. Project management of the Basic Assessment and ECO</p>
<p>City of Cape Town – Proposed Bloubos and Gustrow Roads, South Africa (2007-2011)</p>	<p>EIA for the proposed new sections of Bloubos and Gustrow Roads for the Gordon’s Bay and Sir Lowry’s Pass Development Areas, Cape Town. Project management, report writing, stakeholder facilitation and quality control.</p>
<p>Kwezi V3 (Pty) Ltd for WCPA: Department of Transport and Public Works – Development of borrowpits in the Central Karoo District, South Africa (2007)</p>	<p>EMPR for the development of 40 borrowpits for the regravelling of trunk-, main- and divisional roads in the Central Karoo District, Western Cape. Roles included project management, attending the specialist site visit, report writing and quality control.</p>
<p>Jeffares & Green (Pty) Ltd for WCPA: Department of Transport and Public Works – Upgrading of roads in the Redelinghuys area, South Africa (2006-2009)</p>	<p>Basic Assessment for the proposed upgrading of Main Road 531, regravelling of Main Road 534 and development of 10 borrowpits in the Redelinghuys area, Western Cape. Project director and quality review.</p>

<p>South African National Roads Agency Limited – Propose N2 Wild Coast Toll Road, South Africa (2005-2011)</p>	<p>EIA for the proposed N2 Wild Coast Toll Road, Eastern Cape to Kwa-Zulu Natal. The proposed project involved various improvements to a 550 km stretch of the N2 between East London and Durban. A 90 km greenfield alignment formed the northern end of the Eastern Cape section which included the crossing of five large river gorges. Project co-director, client liaison and quality review.</p>
<p>HHO Africa for PGWC (Department of Transport) – Grading of the road between Gansbaai and Bredasdorp (2005-2010)</p>	<p>Undertook the EIA for the proposed upgrading to a tarred road of the existing gravel road between Gansbaai and Bredasdorp. An EMPR was also compiled for a number of borrowpits that were required of the proposed project. Project director, stakeholder engagement, report drafting and quality review.</p>
<p>Protea Parkways Consortium and South African National Roads Agency Limited – N1 Second Huguenot Tunnel Completion, Western Cape, South Africa (2008-2009)</p>	<p>Basic Assessment for the proposed completion of the second tunnel bore of the Huguenot Tunnel on National Route 1 and construction of the western and eastern access roads. Project manager and quality review.</p>
<p>BKS (Pty) Ltd for PGWC (Department of Transport) – Rehabilitation of the N2. Modderdam Road to Airport Interchange, South Africa (2005-2007)</p>	<p>Scoping Study for the proposed rehabilitation and widening of the N2 between Modderdam Road and Airport Interchange, Cape Town. Project manager, stakeholder engagement and quality control.</p>
<p>Protea Parkways Consortium and South African National Roads Agency Limited – Proposed N1/N2 Winelands Toll Highway (2000-2009)</p>	<p>EIA for the proposed Winelands N1N2 Toll Highway, Western Cape. The proposed project included upgrading of various sections of the N1 and N2 national roads outside Cape Town, grade separated intersections, a bypass around Somerset West and various toll plaza locations. Roles included a substantial stakeholder engagement process, project management, specialist report review and report writing.</p>
<p>BKS (Pty) Ltd for PGWC (Department of Transport) – Construction of the TR31, South Africa (1999-2004)</p>	<p>Prepared the Construction EMP and provided Environmental Control Officer services for the construction of Phase 2 and 3 of the TR31 between Worcester and Robertson. Project Director and environmental compliance.</p>
<p>BKS (Pty) Ltd for City of Cape Town – Proposed upgrading of Hospital Bend, Cape Town, South Africa (1998-2002)</p>	<p>EIA for the upgrading of the N2 from Rhodes Drive Interchange to the top of Hospital Bend, Cape Town. Project management, stakeholder engagement, client liaison and quality review.</p>

	Landfill Sites and Waste Water Treatment Works
City of Cape Town – Supplementary EIA for a Regional Landfill Site to service the City of Cape Town, South Africa (2010-2014)	Supplementary EIA for the proposed regional landfill site to service the City of Cape Town. This involved updating the earlier EIA following court proceedings and a revised Ministerial decision. Project director, report compilation, facilitation of public participation and quality review.
Arcus Gibb (Pty) Ltd for Theewaterskloof Municipality, South Africa (2008-2011)	Scoping Study and EIA for the proposed upgrading of the Grabouw Wastewater Treatment Works, Western Cape. Stakeholder engagement, quality review and project director.
City of Cape Town – EIA for a Regional Landfill Site to service the City of Cape Town, South Africa (2001-2007)	EIA for the proposed new regional landfill site to service the City of Cape Town. The project involved a preliminary assessment of a large number of candidate landfill sites. These were shortlisted to four which were evaluated in the Scoping Report. The two recommended sites were carried through for detailed assessment in the EIA. Project manager, client liaison, stakeholder interaction, specialist engagement, report writing and quality review.
City of Cape Town – EIA for the proposed licensing of the Bellville South Landfill site, South Africa (1999-2001)	EIA for the proposed licensing of the Bellville South Waste Disposal Site, Cape Town. Various completion development scenarios were included in the assessment. Stakeholder interaction, specialist engagement, client liaison, report drafting, quality control and project manager.
Cape Agulhas Municipality – Proposed regional solid waste disposal site, South Africa (1999-2001)	EIA for a proposed regional solid waste disposal site for the towns of Struisbaai, L'Agulhas and Suiderstrand, Western Cape. Stakeholder engagement and quality review.
Mossop Western Leathers – Proposed closure of the Herman Road Waste Disposal facility, South Africa (1998)	EIA for the proposed closure of the Hermon Road Waste Disposal Site, Wellington. Project manager, stakeholder interaction, specialist engagement, report writing and quality review.
Greater Hermanus Municipality – Study to identify a regional waste site for the region, South Africa (1997)	EIA for the identification of a regional waste site for the Hermanus, Kleinmond and Bot River regions, Western Cape. Stakeholder engagement, report compilation and project management.
Kleinmond Municipality – Selection of a new waste disposal site to serve the area, South Africa (1996)	Scoping Study for the selection of a new waste disposal site to serve the area between Rooi-Elis and Kleinmond, Western Cape. Project manager, stakeholder engagement and report compilation.
Southern Natal Joint Services Board – Siting of regional landfill sites, South Africa (1994)	EIA procedure (from initial assessment to comments report) for the siting of two regional landfill sites in southern Natal. Report compilation, client liaison and project management.

	Water and Sewage Pipelines
BVi Consulting Engineers Western Cape (Pty) Ltd for City of Cape Town: Transport for Cape Town – Proposed upgrade of the Bayside Canal, South Africa (2016 - ongoing)	Basic Assessment for the proposed upgrading of the Bayside Canal Outfall System located in Tableview, Cape Town. Project director and quality review.
BVI Consulting Engineers WC (Pty) Ltd for the City of Cape Town: Transport for Cape Town – Proposed stormwater pipeline linking Sunningdale to the Big Bay stormwater outfall pipeline, South Africa (2015 -2016)	Basic Assessment process for the construction of a new stormwater pipeline to route runoff from Sunningdale Phases 12A, 13 and 14 to the existing Big Bay Outfall pipeline located at the eastern boundary of the suburb of Big Bay, Cape Town. Project director and quality review.
Jeffares & Green (Pty) Ltd for Stellenbosch Municipality – Jamestown Bulk Water Supply, South Africa (2012-2013)	Basic Assessment for the proposed Jamestown Bulk Water Supply pipeline and reservoir, Stellenbosch. Project director and quality review.
Sujean Investments (Pty) Ltd - Kuils River Flood Alleviation Project, Cape Town, South Africa (2010-2011)	Basic Assessment for the proposed Kuils River flood alleviation measures for Erf 38771, Bellville. Project director and quality review.
City of Cape Town – Bulk Water system for the Gordon’s Bay Development Area, South Africa (2007-2009)	Basic Assessment for the proposed bulk water system for the Gordon’s Bay Development Area, Cape Town. Project director, stakeholder engagement and quality review.
City of Cape Town – Extension of the Trappies Sewer line, South Africa (2007)	Basic Assessment for the proposed extension of the Trappies Sewer line, Gordon’s Bay, Cape Town. Project director, stakeholder engagement and quality review.
Velddrift Salt Company (Pty) Ltd - Seawater Pump Station and Pipeline, South Africa (2003)	Scoping Study, EMP and ECO for a seawater pump station and pipeline to augment water supply to the Velddrift Salt Company’s operation north of Laaiplek, Western Cape. Project manager, stakeholder engagement and quality review.
Entech Consulting Engineers for the Boland District Municipality - Eerste River Bulk Sewage Scheme, South Africa (1999-2001)	EIA for the proposed Eerste River Bulk Sewage Scheme, Stellenbosch. Project manager, stakeholder engagement, report compilation, quality review.

	<p>Rivers and Wetlands</p>
<p>City of Cape Town - proposed Sir Lowry's Pass River flood alleviation and upgrade, South Africa (2007-2011)</p>	<p>Scoping Study and EIA for the proposed Sir Lowry's Pass River flood alleviation and upgrade in the Gordon's Bay and Sir Lowry's Pass Development Area, Cape Town. Project manager, stakeholder engagement, report compilation, quality review.</p>
<p>Stewart Scott International for City of Cape Town: Helderberg Administration – Proposed Lourens River Flood Alleviation Measures, South Africa (2000-2001)</p>	<p>EIA, Construction EMP and ECO for the proposed Lourens River Flood Alleviation measures, Cape Town. Project director, stakeholder engagement and quality control.</p>
<p>Southern Waters for City of Cape Town, South Peninsula Municipality - Management Plan for Zeekoevlei/Rondevlei, South Africa (2000)</p>	<p>Public consultation for the development of a Management Plan for Zeekoevlei/Rondevlei, Cape Town. Facilitated the public consultation for the development of the plan.</p>
<p>Helderberg Municipality and Cape Metropolitan Council - upgrade of the Moddergat River, South Africa (1999)</p>	<p>EIA for the proposed upgrade of the Moddergat River, Macassar, Cape Town. Project director, stakeholder engagement and quality control.</p>
	<p>General Industries and similar</p>
<p>Irvin & Johnson Limited - Abalone Processing Facility, Western Cape, South Africa (2017-ongoing)</p>	<p>Basic Assessment and EIA for a proposed abalone processing facility and expansion of the existing abalone farm, respectively, at the existing I&J operation near Gansbaai. Project director and quality control.</p>
<p>International Mining & Dredging Holdings Ltd – Mining Right Application for offshore diamond concession Block 2C, South Africa (2015-2016)</p>	<p>EIA for a Mining Right Application for an offshore diamond concession in Block 2C off the West Coast of South Africa. Project director and quality review.</p>
<p>International Mining & Dredging Holdings Ltd – Application for sediment sampling for diamond mining concession areas, West Coast, South Africa (2014-2015)</p>	<p>Basic Assessment for marine sediment sampling activities in Diamond Mining Concession Areas off the West Coast, South Africa. Project director and quality review.</p>

<p>Saldanha Bay IDZ Licencing Company – Establishment of an Oil and Gas Offshore Supply Base, South Africa (2013-2016)</p>	<p>EIA for the proposed establishment of an Oil and Gas Offshore Supply Base at the Saldanha Bay IDZ. Project director and quality review.</p>
<p>ZAA Engineering Projects and Naval Architecture (Pty) Ltd for Transnet National Ports Authority - Pre-feasibility study for an offshore LPG handling and storage facility, Saldanha Bay, South Africa (2011)</p>	<p>Environmental input into the pre-feasibility study for the proposed offshore LPG handling and storage facility, Port of Saldanha, Western Cape. Project manager and environmental content input.</p>
<p>FerroMarine Cape – Construction of the Oil and Gas Service Hub, Port of Cape Town, South Africa (2010-2011)</p>	<p>ECO for the construction of an Oil and Gas Service Hub in the Port of Cape Town. Project director and alternate ECO.</p>
<p>Yachtport SA (Pty) Ltd – Marine Lift Facility, Saldanha Bay, South Africa (2009-2011)</p>	<p>Basic Assessment and ECO for the proposed Marine Lift Facility in the Small Craft Harbour, Port of Saldanha. Project director and quality review.</p>
<p>Richmond Business Park Joint Venture Consortium – Proposed Richmond Park Development, Cape Town, South Africa (2010-2012)</p>	<p>EIA for the proposed Richmond Park Development for the project facilitation joint venture on behalf of the successful land claimants, Cape Town. Project director, stakeholder engagement and quality review.</p>
<p>SAB Maltings (Pty) Ltd – Proposed Steep Water Purification Plant, Caledon, South Africa (2008-2011)</p>	<p>EIA for a Waste Management Licence Application for the construction of a Steep Water Purification Plant (Two- phased Membrane Bioreactor and Reverse Osmosis system) at the South African Breweries’ Malting Plant, Caledon, Western Cape. Project director, stakeholder engagement and quality control.</p>
<p>Savannah Environmental (Pty) for Eskom Holdings Ltd – Proposed Eskom Wind Energy Facility (Sere Wind Farm), Koekenaap, South Africa (2007-2008)</p>	<p>Environmental Review of the EIA and EMP for the proposed Eskom Wind Energy Facility and associated infrastructure (Sere Wind Farm), near Koekenaap, Western Cape. Review of process and report.</p>
<p>Finavera Renewables Ltd – Proposed Wave Energy Project, Western Cape, South Africa (2007-2008)</p>	<p>Environmental input for a site pre-selection exercise for a proposed Wave Energy Project located off the Southwest Coast of South Africa. Project manager and research.</p>
<p>Irvin & Johnson Limited – Offshore aquaculture Project, Mossel Bay, South Africa (2007-2009)</p>	<p>Basic Assessment for a proposed aquaculture project in Mossel Bay. The project involved the develop of 18 floating flexible type cages within a concession area off the coast of Mossel Bay to produce indigenous line fish (namely yellow tail, dusky cob and silver cob). Project director, specialist review and quality control.</p>

<p>Tow Surf South Africa – Noise and Emissions evaluation of Tow Surfing, Cape Town, South Africa (2006)</p>	<p>Environmental evaluation of the effects of tow surfing in terms of noise and emissions on surrounding residential areas. Project manager and report compilation.</p>
<p>Water Research Commission – Compilation of a Groundwater Licensing Guide (2004-2007)</p>	<p>A member of the project consultant team that prepared a Groundwater Licensing Guide to guide groundwater development and use applications. Project manager and workshop participant.</p>
<p>P & I Associates (Pty) Ltd – Proposed wreck reduction of vessel BBC China, Eastern Cape, South Africa (2004)</p>	<p>Environmental Assessment for the proposed wreck reduction of the vessel BBC China, Wild Coast. Project manager, facilitate specialist input and compilation of EMP for the wreck reduction operation.</p>
<p>PetroSA (Pty) Ltd – Unleaded Fuel Refinery Conversion Project, Mossel Bay, South Africa (2003-2005)</p>	<p>EIA for the upgrading of the PetroSA refinery near Mossel Bay for the conversion to 100% unleaded fuel production. Project director and quality review.</p>
<p>Namakwa Sands Ltd – Proposed extension of mining and processing operations, West Coast, South Africa (2003)</p>	<p>Initial environmental investigation for the proposed extension of Namakwa Sands' mining, mineral separation and smelting operations. Project director, specialist site visit and quality review.</p>
<p>Caltex SA (Pty) Ltd – Processing and disposal of sulphur produced at the Milnerton refinery, South Africa (2001-2002)</p>	<p>EIA for the additional equipment to process sulphur produced at the Milnerton Oil refinery and offsite disposal of sulphur. Project director and quality review.</p>
<p>PetroSA (Pty) Ltd – Distillate Project, Voorbaai Tank Farm, South Africa (2001)</p>	<p>Compilation and implementation of construction-phase Environmental Management Plan for the Low Aromatic Distillate Project, Voorbaai Tank Farm Mossel Bay. Project manager and report compilation.</p>
<p>Caltex SA (Pty) Ltd – Capacity increase of the Saldanha-Milnerton crude oil pipeline, South Africa (2000)</p>	<p>EIA for the increase in the flow-rate of the Saldanha-Milnerton crude oil pipeline. Project management, stakeholder engagement and report compilation.</p>
<p>LAMA International for Sappi Saiccor – Construction of the extended marine outfall pipeline, KwaZulu-Natal, South Africa (1996)</p>	<p>Compiled the Construction EMP and undertook the construction compliance for the duration of the construction operation to extend the Sappi Saiccor marine outfall pipeline, Umkomaas, KwaZulu-Natal. Project manager, report compilation and ECO.</p>
<p>CSIR – Proposed Gas monitoring laboratory at Cape Point, South Africa (1994-1996)</p>	<p>Public consultation for the proposed CSIR gas monitoring laboratory at Cape Point. Quality review.</p>

<p>CSIR for Saldanha Steel (Pty) Ltd – Proposed steel mill for Saldanha Bay (1994-1995)</p>	<p>Facilitated the public consultation process for the proposed development of a steel mill in the Saldanha Bay area. Stakeholder engagement and co-project manager.</p>
<p>Tourism/Resort</p>	
<p>Meerenhof Properties (Pty) Ltd - Proposed expansion of dams on Uitsig Farm, Cape Town, South Africa (2016 – ongoing)</p>	<p>Basic Assessment for the proposed expansion of dams on Uitsig Farm, Constantia, Cape Town to provide for additional storage for summer irrigation purposes. Project director, stakeholder engagement and quality review.</p>
<p>City of Cape Town – Feasibility Study for proposed Monwabisi Coastal Node, Cape Town, South Africa (2011)</p>	<p>Feasibility study for the proposed Monwabisi Coastal Node, Cape Town. Project manager and content contributor.</p>
<p>Olympian Developing Company – Proposed multi-purpose estate, Firgrove, South Africa (2003-2005)</p>	<p>EIA for the development of a multi-purpose estate on Rem. Farm 681, Firgrove/Macassar, Cape Town (Sitari Fields Golf Estate). Project director, stakeholder engagement, review of specialist studies and quality control.</p>
<p>Lourensford Estate – Construction of Lourensford Winery, Somerset West, South Africa (2002-2003)</p>	<p>Compiled the Construction and Operation EMP and undertook compliance monitoring for the development of a wine cellar on Lourensford Estate, Somerset West, Cape Town. Report compilation and ECO.</p>
<p>Johnnic Property Development (Pty) Ltd – Atlantic Beach Golf Estate, Cape Town, South Africa (1997)</p>	<p>EIA for the proposed development of the Atlantic Beach Golf Estate, Melkbosstrand, Cape Town. Project director, specialist study review, report compilation and quality review.</p>
<p>Table Mountain Aerial Cableway Company - Upgrade of the Table Mountain Cableway, Cape Town, South Africa (1995-1996)</p>	<p>EIA for the proposed upgrading of the Table Mountain Aerial Cableway, Cape Town. Facilitated public consultation process, reviewed specialist studies, report compilation and project management. Member of the Environmental Monitoring Committee for the duration of the construction operation.</p>
<p>Built Environment</p>	
<p>Luna Trust - Proposed Subdivision of Erf 177476, St James, Cape Town, South Africa (2017 – Ongoing)</p>	<p>Basic Assessment for the proposed subdivision into four additional portions of Erf 177476, St James, Cape Town. Project director, client liaison and quality review.</p>
<p>Peter Koekemoer – Rectification process for house construction in Cape Town, South Africa (2015-2016)</p>	<p>EIA for a Section 24G application process for House Koekemoer ERF 3446, Oranjezicht, Cape Town. Project director, client interaction and quality review.</p>

<p>Rustyrose 41 (Pty) Ltd t/a Brights Hardware (Pty) Ltd - Rezoning of Erf 10565 Belville (2011-2013)</p>	<p>Basic Assessment for the proposed rezoning of a portion of Erf 10565, Boston (Belville), Cape Town and ECO services for the duration of the construction period.</p>
<p>Martin Kelly – Proposed subdivision of a portion of Erf 1, Simon’s Town, South Africa (2006-2011)</p>	<p>Basic Assessment for the proposed subdivision and rezoning of a portion of Erf 1, Simon’s Town (Glencairn), Cape Town. Project manager, stakeholder engagement, specialist report review, client interaction and quality control.</p>
<p>Llandudno Surf Lifesaving Club – Extension of the club boathouse, Cape Town, South Africa (2007-2010)</p>	<p>Basic Assessment for the proposed extension of the Llandudno Surf Lifesaving Club Boathouse, Llandudno, Cape Town. Project director, authority liaison and quality review.</p>
<p>Cape Town Community Housing Company – Proposed Royal Maitland Phase 3, Cape Town, South Africa (2006-2007)</p>	<p>Basic Assessment for the proposed rezoning and subdivision of Erf 23300, Maitland (Royal Maitland Phase 3). Project management and quality review.</p>
<p>Rocklands Eco Estate (Pty) Ltd – Proposed development of Rocklands Farm, Simon’s Town, South Africa (2005-2011)</p>	<p>Basic Assessment for the proposed rezoning and subdivision of parts of Portions 1 and 2 of Farm 1020, Simon’s Town (Rocklands Farm), Western Cape. Stakeholder engagement, specialist study review, report compilation, client interaction, project management and quality review.</p>
<p>Trans Caledon Tunnel Authority – Construction of the Berg River Dam, Franschhoek, South Africa (2005-2008)</p>	<p>Environmental compliance for various construction components of the Berg River Dam Project, Franschhoek, Western Cape. Tasks included weekly site visits, ECO report compilation and monthly audit reports for the duration of the construction operation.</p>
<p>Gavin Wurz – Proposed development of Farm Rouen, Strand, South Africa (2004)</p>	<p>Scoping Study for the proposed rezoning and subdivision of Farm Rouen on Erven 5100 & 5101, Strand, Cape Town. Project manager, stakeholder engagement and quality review.</p>
<p>Plattner Racing Stables – Redevelopment of Rondeberg Farm, West Coast, South Africa (1999-2000)</p>	<p>Environmental input included undertaking a Scoping Study for the proposed rezoning and development of Farm Rondeberg Flats, No. 116, West Coast north of Cape Town. A Construction EMP and Operation EMP were also compiled. The project included the construction of a horse racing track, jockey stables and various other supporting infrastructure. Project management, stakeholder engagement, specialist study review, report compilation and quality review.</p>
<p>Thesen & Co – Proposed development of Thesen Island, Knysna, South Africa (1994-1996)</p>	<p>Facilitation of the public consultation process for the proposed development options for Thesen Island, Knysna.</p>

MEMBERSHIPS

CEAPSA	Certified as an Environmental Practitioner with the Interim Certification Board for Environmental Assessment Practitioners of South Africa (2006)
ICB	Interim Certification Board member, since 1999
IWM	Member of the Institute of Waste Management, since 1998
IAIASa	Member of the International Association for Impact Assessment South Africa, since 1997
Pr.Sci.Nat.	Registered as a Professional Natural Scientist - Environmental Scientist, 1993 (Reg. no. 400145/93)

PUBLICATIONS

	R Parsons, L Eichstadt, J Crowther, J Blood. (2008) "Application Procedure for the Development and Use of Groundwater". WRC Report No. 1510/1/08.
	Shippey K., Campbell H.M. and Crowther J. (1997). "Constructing successful environmental management plans for building sites". IAIA '97 Conference, Integrated Environmental Management in Southern Africa: The State of the Art and Lessons Learnt. Pilansberg, South Africa.
	Crowther J. and Dorren D. (1994) "Public consultation in the search for regional landfill sites, South Coast Natal". Wastecon '94 All-Africa Congress, Somerset West, South Africa.
	Hendry R W, Crowther J and Homes R (1990) "Stabilisation of Rock Cuttings on the Florence to Worcester Section of the National Route N1, South Africa". International Society for Rock Mechanics, International symposium on Static and Dynamic Considerations in Rock Engineering, Swaziland.
	Crowther J., Parsons R. and Palm J. (1986). "Experience of Public Participation in developing new waste disposal sites". Wastecon '96 International Congress. Convened by the Institute of Waste Management, Durban, South Africa.

CURRICULUM VITAE



LINDA MUNRO

SENIOR ENVIRONMENTAL SCIENTIST

EMPA, South Africa

QUALIFICATIONS

GDE	2007	Environmental Engineering (University of Witwatersrand, Johannesburg)
MSc	2003	Environmental Management (Rand Afrikaans University)
BSc Hons	1999	Zoology (Rand Afrikaans University)
BSc	1998	Zoology and Botany (Rand Afrikaans University)

EXPERTISE

- Project management
- Application and process management for environmental authorisations and licenses
- Feasibility studies
- Auditing

Linda is a Senior Environmental Scientist with SLR and has over 15 years' experience in the environmental and water sector as an experienced consultant.

Linda has managed a wide range of Environmental Impact Assessment projects and associated environmental authorisation processes for various projects within the mining, water and energy industries in Southern Africa.

At the start of her career, Linda held a position at the South African Department of Water Affairs and Forestry (now known as the Department of Water and Sanitation) and was responsible for managing water quality, enforcing the National Water Act and relevant Regulations, licenses and permits in the Leeu/Taaiboschspruit and Vaal Barrage Catchments. This regulatory perspective was useful when Linda started consulting in 2003 at a South African based global environmental consulting company as an Environmental Scientist. Linda joined Metago SLR in 2009 as a Senior Environmental Scientist.

Linda's key areas of expertise are project management and co-ordination including proposal writing, budget control, time management, internal coordination of project teams, management of specialist sub-consultants and report writing, application and process management for environmental authorisations and licenses in Southern Africa which includes Environmental Impact Assessments, Environmental Management Programmes/Plans, Integrated Water Use Applications and registration of water uses, environmental feasibility studies for mining projects in Southern Africa, Environmental Management Programmes/Plans performance assessments, Water Use Licence

compliance audits, and internal Equator principle compliance audits.

PROJECTS

A sample of Linda's project experience is summarised below by sector.

MINING SECTOR

COAL

Vangatfontein Coal Mine IWULA (South Africa) (2010-2011)

Project Manager and responsible for the compilation of the application and authority liaison

COPPER

Kinsenda Copper Mine EMP (Democratic Republic of Congo) (2011)

Compiled EMP as part of the broader EIA team.

Palabora Mining Company IWULA (South Africa) (2004)

Project Manager and responsible for the compilation of the application, authority and public liaison.

FERROY-ALLOYS

Hernic Bakone and Marula EMP performance assessment (2015)

Supervisory and reviewer role.

Bateman Minerals World Bank audit of environmental documentation (Russia) (2005)

Part of a team reviewing environmental documentation for the reprocessing of a slag dump, to determine compliance to World Bank standards

FLOURSPAR

SA Fluorite Fluorspar Bulk Sampling EMP Amendment (South Africa) (2012)

Supervisory and reviewer role.

GOLD

Manica Gold Project (Mozambique) (Current)

Project Manager and responsible for the compilation of the application, authority and public liaison.

Manica Gold Mine Resettlement Action Plan (Mozambique) (Current)

Supervisory and reviewer role.

Damang Gold Mine EMP update (Ghana) (2017)

Project Manager and responsible for compilation of report

Damang Gold Mine baseline study peer review (Ghana) (2012)

Reviewed specialist reports on behalf of Abosso Gold Fields Limited.

South Deep Doornpoort Tailings Dam WULA (South Africa) (2009/2011)

Project Manager and responsible for the compilation of the application, authority and public liaison.

<p>Burnstone Gold Mine Baseline studies, pre-feasibility and feasibility studies, Area 1 EIA and EMP, IWULA (South Africa) (2005/2006)</p>	<p>Project Manager and responsible for the compilation of the applications, authority and public liaison.</p>
<p>NICKEL</p>	
<p>Dynatec EIA World Bank Audit (Madagascar) (2006)</p>	<p>Part of a team reviewing the EIA for proposed copper nickel mine to determine compliance to World Bank standards.</p>
<p>MANGANESE</p>	
<p>Khwara Manganese Mine EIA (South Africa) (current)</p>	<p>EIA Phase Project Manager and responsible for the compilation of the report, management of specialists.</p>
<p>Lehating Manganese Mine WULA (South Africa) (Current)</p>	<p>Project Manager and responsible for the compilation of the application, management of specialists, authority and public liaison.</p>
<p>Kudumane Manganese Resources York and Hotazel WULA (South Africa) (2017)</p>	<p>Project Manager and responsible for the compilation of the application and authority liaison.</p>
<p>Kudumane Manganese Resources Devon WULA (South Africa) (current)</p>	<p>Supervisory and reviewer role.</p>
<p>PLATINUM GROUP METALS AND CHROME</p>	
<p>Pilanesberg Platinum Mine Plant Expansion EIA (South Africa) (current)</p>	<p>Project Manager and responsible for the compilation of the applications, management of specialists, authority and public liaison.</p>
<p>Spitzkop and Mareesburg Platinum Mines WULA (South Africa) (2017)</p>	<p>Project Manager and responsible for all project deliverables, and authority liaison.</p>
<p>Impala Section 102 EIA to expand the mining rights area (2015/2016)</p>	<p>Project Manager and responsible for the compilation of the applications, management of specialists, authority and public liaison.</p>
<p>Impala Shaft 18 and 19 EIA, EMP, IWULA and feasibility study (South Africa) (2012/2013)</p>	<p>Project Manager and responsible for all project deliverables, authority and public liaison.</p>
<p>Inkosi Platinum Prospecting EMP Amendment for the Greater Inkosi Area, North West (2012)</p>	<p>Supervisory and reviewer role.</p>
<p>Kalkfontein Platinum Mine EIA, EMP and feasibility study (South Africa) (2009/2011)</p>	<p>Project Manager and responsible for all project deliverables, authority and public liaison.</p>
<p>Leeuwkop Platinum Mine EMP Performance Assessment (South Africa) (2009)</p>	<p>Project Manager and responsible for the compilation of the audit report.</p>

Zondernaam Seismic Survey Prospecting EMP (South Africa) (2010)	Project Manager and responsible for all project deliverables, authority and public liaison.
Aquarius Platinum Everest IWULA (South Africa) (2010)	Project Manager and responsible for all project deliverables and authority liaison.
Sedibelo Platinum Mine EIA, EMP and feasibility study (South Africa) (2006/2007)	Project Manager and responsible for all project deliverables, authority and public liaison.
Madikwe Platinum Mine EMP Performance Assessment (South Africa) (2005)	Part of a team to determine compliance to the approved EMP
Drenthe Platinum Mine pre-feasibility study (South Africa) (2004)	Compiled the pre-feasibility report.
Leeuwkop Platinum Mine pre- feasibility study (South Africa) (2004)	Compiled the pre-feasibility report.
PHOSPHATE	
Foskor Scoping Phase EIA and IWULA for the Van Ryssen Dam (South Africa) (2003/2004)	Compiled the scoping report and IWULA, responsible for authority and public liaison. Also drafted the actual water licence on behalf of Department of Water Affairs.
URANIUM	
Husab Uranium Mine Closure Report (Namibia) (Current)	Compilation of closure report with input from a civil engineer.
A-Cap Uranium Mine EIA and EMP (Botswana) (Current)	Part of a team to compile EIA and EMP.
Husab Uranium Mine EMP (Namibia) (2010/2011)	Compiled EMP as part of the broader EIA process. Provided support to the owners team.
Lumwana Mining Company EIA for Uranium Project (Zambia) (2007/2008)	Compiled part of the EIA within EIA team.
ENERGY SECTOR	
Sishen Iron Ore powerline WULA project (South Africa) (2015)	Reviewer role
Arandis Thermal Power Station EMP (Namibia) (2012)	Compiled EMP as part of the broader EIA process.

<p>Banro Ulindi 1 and 2 Magembe Hydropower Project pre-feasibility study (Democratic Republic of Congo) (2008)</p>	<p>Project Manager and responsible for all project deliverables.</p>
<p>Kusile Power Station IWULA (South Africa) (2008)</p>	<p>Part of a team to authorise water uses, compiled application documents, liaised with public and authorities.</p>
<p>Anvil Mining Scoping Study for transmission line and upgrading of a road (Democratic Republic of Congo) (2007)</p>	<p>Part of a team to produce the scoping report.</p>
<p>Braamhoek Pumped Storage Scheme IWULA (South Africa) (2006)</p>	<p>Responsible for IWULA compilation, authority and public liaison.</p>
<p>INFRASTRUCTURE SECTOR</p>	
<p>ROADS</p>	
<p>SANRAL Basic Assessments for Gauteng Improvements Project (South Africa) (2008)</p>	<p>Supervisory role.</p>
<p>Mpumalanga Province EIA and EMP for upgrade of Bethal-Morgenon Road (South Africa) (2006)</p>	<p>Compiled applications.</p>
<p>INDUSTRY SECTOR</p>	
<p>Kathu supplier park WULA (South Africa) (2015)</p>	<p>Reviewer role</p>
<p>OTHER</p>	
<p>Environmental Management Systems</p>	
<p>Merlon Petroleum EMS (Egypt) (2005)</p>	<p>Compilation of EMS procedures as part of a team</p>
<p>Water Resource Management</p>	
<p>Streamflow analysis for the Komati Ecological Water Requirement for the Komati comprehensive reserve determination for DWA (South Africa) (2006)</p>	<p>Worked under supervision to conduct streamflow analysis.</p>

<p>Development of Reconciliation Strategies for Large Bulk Water Supply Systems for the Amatole Catchment for DWA (South Africa) (2005)</p>	<p>Worked under supervision to develop reconciliation strategies.</p>
<p>Updating of the Water Resources 2005 Study and WR90 Database for the Water Research Commission (South Africa) (2005)</p> <p>MEMBERSHIPS</p>	<p>Worked under supervision to patch water quality data.</p>
<p>PrSci.Nat.</p>	<p>South African Council for Natural Scientific Professions</p>