

# CURRICULUM VITAE



## ALESSANDRA (ALEX) PHEIFFER

### SENIOR ENVIRONMENTAL CONSULTANT

Environmental Management, Planning and Approvals, Africa

### QUALIFICATIONS

BSc	1998	Biological Sciences
BSc (Hons)	1999	Zoology
MSc	2004	Environmental Management

### EXPERTISE

- Permitting and Licensing Processes
- Stakeholder Engagement
- Compliance Auditing
- Due Diligence and Reviews
- Screening and Risk Assessments
- Financial Provision and Closure Planning

Alex has 16 years' experience in the field of Environmental Management. She has managed a wide range of permitting and licensing projects including environmental, water, waste and air licensing and assessment processes mainly in the exploration, mining and industrial sectors. These included project management and co-ordination; specialist and engineering team management; co-ordination, facilitation and undertaking of stakeholder engagement processes including for contentious projects, and environmental assessment. She has experience in addressing both in-country legislation and Equator Principles and International Finance Corporation (IFC) requirements.

Alex has provided environmental specialist input on a number of pre-feasibility studies linked to the exploration/development/expansion of mining operations. She has also been involved in policy drafting, environmental due diligence processes, environmental reviews for financing institutions (in the mining, industrial and alternative energy sectors), compliance auditing, general environmental management support to operating sites, site screening exercises, risk assessments and financial provisioning and closure planning.

In her early career years, Alex held a position within Anglo Platinum's Waterval Smelter as Assistant to the Chief Environmental Officer. During the period March 2015 to October 2016, Alex held the position of Operations Manager: Environmental Management, Planning and Approvals (EMPA) within SLR Africa and was responsible for co-ordinating SLR's environmental management team.

### PROJECTS

CHROME	
2007	Project Manager: EMPs (including an EIA) for prospecting on the farms Beestekraal 290 JQ, Boschpoort 284JQ, Nooitgedacht 289JQ and Nooitgedacht 287JQ near Rustenburg in the North West Province: Bakgatla Ba Kgafela Tribal Authority
2005	Project Manager: EMPs (including EIA) for two prospecting projects on the town and town lands of Rustenburg 272JQ in Rustenburg Magisterial District, North West Province: Xstrata South Africa (Pty) Ltd
2003-2004	Project Assistant: EIA/EMP for a chrome mine and concentrator in the Rustenburg / Boshhoek region: SA Ferrochrome and Mining (Pty) Ltd

<b>COAL</b>	
Current	Project Manager: EIA/EMP for a greenfields coal mine in northern Kwa-Zulu Natal: Commissiekraal Coal (Pty) Ltd
<b>COPPER</b>	
Current	Project Reviewer: ESIA for the Kitwe tailings retreatment and mineral processing project in Zambia: Horizon Mining
2014	Project Reviewer: EIA/EMP amendment for the Kinsenda operations in the DRC.
2013	Project Reviewer: EIA for a greenfields copper oxide project (Omitiomire project) (Namibia): Craton Mining and Exploration (Pty) Ltd
<b>FERROCHROME</b>	
2013	Project Manager: EIA/EMP amendment for the exclusion of smelter activities at Bokfontein Chrome Mine: Herculite Ferrochrome
2012	Project Manager: EIA/EMP amendment for a concentrator and smelter complex at Bokfontein Chrome Mine: Herculite Ferrochrome
2003-2004	Project Assistant: EIA for Project Lion, a new smelter complex near Steelpoort: Xstrata South Africa (Pty) Ltd
2002-2003	Project Assistant: EIA/EMP for Transvaal Ferrochrome Project (a ferrochrome smelter complex in the Rustenburg/Brits region):
2002-2003	Project Manager: EIA/EMP amendment for a pelletizing plant at Xstrata Wonderkop: Xstrata South Africa (Pty) Ltd
<b>GOLD</b>	
Current	Project Reviewer: EIA for the refurbishment of an existing shaft and related mineral processing and residue disposal facilities: Taung Gold
2016	Project Reviewer: Annual update of the Damang EMP and reclamation plan: Abosso Goldfields Limited
2012	Project Manager: EIA for a filtration plant at Navachab Gold Mine (Namibia): AngloGold Ashanti Namibia (Pty) Ltd
2011	Project Reviewer: Basic Assessment for Diesel storage facilities at its South Deep Mine Operations: Gold Fields (South Africa) (Pty) Ltd
2009	Part of a peer review delegation for an ongoing EIA: Participation in an integrated environmental management review – technical workshop for new projects at Gold Fields: Gold Fields (South Africa) (Pty) Ltd
2005-2007	Project Manager: Consolidating South Deep Min’s various EMPR documents into one document and in turn bringing the mine’s EMPR in line with the requirements of the Mineral and Petroleum Resources Development Act and supporting

	regulations : Placer Dome Westonaria Joint Venture – South Deep Mine
2005-2007	Project Manager: EIA and EMP amendment for a new tailings dam development: Placer Dome Westonaria Joint Venture – South Deep Mine
<b>IRON</b>	
2016	Project Reviewer: EIA and EMP for the Jenkins and Driehoekspan greenfields mining operations in the Northern Cape: Coza Iron Ore
2012	Project Manager: EIA/EMP for greenfield iron ore mine development near Lephalale (Ellisras) (Moonlight iron ore project) in the Limpopo Province: Turquoise Moon Trading (Pty) Ltd
2010	Project Manager and Reviewer: Amendment to existing prospecting EMP to cater for changes in prospecting operations: Nelesco 684 (Pty) Ltd
2010	Project Manager and Reviewer: Amendments to existing prospecting EMPs (Cascade 442IT and Delft 22HU) to cater for changes in prospecting operations: Mkhombi Mining (Pty) Ltd
2009	Project Manager and Reviewer: Management of the consultation process for a prospecting EMP on the farms Sterkfontein 419IT and Wolvernkop 427IT, near Piet Retief in Mpumalanga Province: Mkhombi Mining (Pty) Ltd
2009	Project Manager: EMP (including EIA) for prospecting on the farms Moabsvelden 248IR and Rietkuil 249IR, near Delmas in Mpumalanga Province: Spirapix Mining (Pty)
<b>MANGANESE</b>	
Current	Project Reviewer: a number of EMP amendment and rectification processes for Tshipi é Ntle Manganese Mining operations in the Northern Cape
Current	Project Reviewer: EMP amendment and rectification processes for UMK Manganese Mine in the Northern Cape
2017	Project Reviewer: EIA and EMP for a greenfields mining right application in the Northern Cape: Khwara Mining
2016	Project Reviewer: EIA and EMP for a greenfields mining right application in the Northern Cape: Ntsimbintle Mining (Pty) Ltd
2008 and 2016	Project Reviewer: EMP performance assessment and financial provision re-assessment for prospecting right in the Northern Cape: Ntsimbintle Mining (Pty) Ltd
<b>PLATINUM</b>	
Ongoing	Project Manager and Reviewer: Various EMP performance assessments and financial provision re-assessments for prospecting rights held by Impala in the North West, Mpumalanga and Limpopo Province: Impala Platinum Limited (Impala)
Ongoing	Project Manager: Various amendments to existing prospecting EMPs to cater for

	the changes in prospecting operations: Impala Platinum Limited (Impala)
Ongoing	Project Manager and Reviewer: Various EMP performance assessments and financial provision re-assessments for prospecting rights held by Afplats, Inkosi and Imbasa in the North West Province
Current	Project Reviewer: EIA and EMP for the relocation of a security perimeter and infrastructure footprint expansion at a BMR and Smelter complex in the Limpopo Province: Northam Platinum
2015-2016	Project Reviewer: EIA and EMP amendment including WML for changes to surface infrastructure and operations at Bakubung Platinum Mine, North West Province
2012-2015	Project Reviewer: EIA and EMP amendment for changes to surface infrastructure and operations at Tharisa Mine, North West Province
2014	Project Reviewer: EMP Compliance Audit for Leeuwkop Mine
2013	Project Manager and Reviewer: EIA/EMP amendment for changes to surface infrastructure at Marula Platinum Mine: Marula Platinum (Pty) Ltd
2013	Project Reviewer: EIA/EMP for the extension of underground mining activities at Everest Platinum Mine (Fairway project): Aquarius Platinum (South Africa) (Pty) Ltd
2013	Project Manager: EIA/EMP for the extension of mining activities at Everest Platinum Mine (Hoogland project): Aquarius Platinum (South Africa) (Pty) Ltd
2011	Project Co-ordinator: Supply and co-ordination of interim on-site environmental manager to assist with general management of environmental aspects at Everest Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd
2010	Project Reviewer: Compilation of environmental documents (including a public consultation process) in support of a closure application for the Turffontein 263JQ and Kookfontein 265JQ prospecting right and Reinkoyalskraal 278JQ and Elandsheuwel prospecting right: Impala Platinum Limited (Impala)
2010	Project Reviewer and Auditing: 2010 Annual Re-Assessments of Everest Platinum Mine's closure cost estimate: Aquarius Platinum (SA) (Pty) Ltd
2010	Project Reviewer: EMP (including EIA) for prospecting on the farm Rooikraal 118JS in the Limpopo Province: Braggite Resource (Pty) Ltd
2009	Project Manager: 2009 Annual Re-Assessments of Everest Platinum Mine's closure cost estimate: Aquarius Platinum (SA) (Pty) Ltd
2009	Project Manager and Closure: EIA/EMP amendment for the north and south boxcuts at Everest Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd
2009	Project Reviewer: EIA/EMP amendment for the production expansion of Eland Platinum Mine: Xstrata South Africa (Pty) Ltd
2008-2009	Project Manager: Assistance with the consultation with landowners to input into closure of a prospecting right: Impala Platinum Limited (Impala)

2008	Project Manager: Compilation of environmental posters linked to the seismic EMP for the use in environmental awareness training: Impala Platinum Limited (Impala)
2008	Project Manager and Reviewer: EMP performance assessment of Marula Platinum Mine's EMP report: Marula Platinum (Pty) Ltd
2007-2008	Project Manager: EIA/EMP for a new platinum mine and concentrator Plant (Mphahlele Project) in the Limpopo Province: Tameng Mining and Exploration (Pty) Ltd
2006-2009	Project Manager: EIA/EMP amendment for additional infrastructure at Everest Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd
2006-2008	Project Manager: EIA/EMP for seismic survey activities near Impala's Rustenburg operations: Impala Platinum Limited (Impala)
2006-2008	Project Manager: EIA/EMP amendment for a new shaft and associated facilities and Marula Platinum Mine. This project also included the consolidation and updating of the mine's EMP to cater for the changes in mining legislation: Marula Platinum (Pty) Ltd
2005	Project Manager: EMP (including an EIA) for prospecting on the farms Turffontein 263JQ, near Impala's Rustenburg Operations: Impala Platinum Limited (Impala)
2005	Project Manager: EMP (including an EIA) for prospecting on the farm Reinkoyalskraal 278JQ, near Impala's Rustenburg Operations: Impala Platinum Limited (Impala)
2005	Project Manager: EMP (including and EIA) for prospecting on the farms Klipgatkop 115JQ, near Impala's Rustenburg Operations: Impala Platinum Limited (Impala)
2005	Project Manager: EMP (including and EIA) for prospecting on the farms, Doornspruit 84JQ and Roodekraalspruit 113JQ near Impala's Rustenburg Operations: Impala Platinum Limited (Impala)
2005	Project Manager: EIA/EMP for a mining right application (The Fingers Project) at Marikana Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd
2004	Project Manager: Assisted in the facilitation of the public involvement process for the Shaft 20 EMP amendment: Impala Platinum Limited (Impala)
2003-2004	Project Manager: EMP amendment for the Maandagshoek Winze Project (re-establishment of an underground shaft): Modikwa Platinum Mine
2002-2005	Project Manager: EIA/EMP amendment for the Opencast Mining Project at the Rustenburg operations: Impala Platinum Limited (Impala)
2002-2003	Project Manager: EMP amendment for The Hills Project (establishment of additional infrastructure for mining purposes): Modikwa Platinum Mine
2002-2003	Project Assistant: EIA and EMP for a greenfields mine – Everest South Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd

2002	Project Assistant: Drilling and bulk sampling EMPs for the Everest South Project: Aquarius Platinum (SA) (Pty) Ltd
2002	Project Assistant: Revised bulk sampling EMP for the Everest South Project: Aquarius Platinum (SA) (Pty) Ltd
2001	Project Manager: EMP amendments for re-positioning of infrastructure for Marikana Platinum Mine: Aquarius Platinum (SA)
<b>RESIDENTIAL, FOOD and BEVERAGE</b>	
2017	Technical E&S Lead: Fatal flaw analysis/site selection screening for a food and beverage developments in Gauteng
2016	Project Manager: Provision of environmental management support to Kumba Iron Ore for the relocation of Dingleton town
2015	Project Reviewer: Basic Environmental process for the Pilanesburg Platinum Mine Housing Development, in the North West Province
2001-2002	Project Assistant: EIA for a village and cemetery for non-landowners to be relocated from the site of Marikana Platinum Mine: Aquarius Platinum (SA) (Pty) Ltd
<b>SILICA AND SAND</b>	
Current	Project Reviewer: EIA/EMP for a mining right application for sand quarry along the Vaal River, in the Free State: Goosebay (Pty) Ltd
2005-2006	Project Manager: EIA/EMP for mining right application at Rietvly Silica Mine: Xstrata South Africa (Pty) Ltd
<b>URANIUM</b>	
2009-2016	Project Manager: ESIA for a greenfields Uranium and Coal Mine in Botswana (Letlhakane Project): A-Cap Resources Limited
<b>ALTERNATIVE ENERGY</b>	
2012	Project Manager: EIA/EMP amendment for the use of alternative fuels at its Lichtenburg Cement Plant: Lafarge Industries SA (Pty) Ltd
2008-On-hold	Project Manager: EIA for cogeneration power plants at Xstrata’s operations in the North West and Mpumalanga Provinces: Power Tech IST/ Xstrata South Africa (Pty) Ltd
<b>INDUSTRY</b>	
2016	Project Reviewer: Basic assessment and Air Emission License for a minerals siding in Bloemfontein: Three clients
<b>BIOREMEDIATION</b>	
2017	Facilitation of DEA bioremediation process for a residential area in the Northern

	Cape
2013-2015	Project Manager: EIA for a waste management license for the bioremediation operation at TransHex Baken Diamond mine in the Northern Cape
<b>CLOSURE PLANNING</b>	
2017	Completion of the environmental and social aspects of the Closure Plan for B2Gold’s mine in Namibia: B2Gold Namibia
<b>OTHER: EXPERT CONSULTANT, DUE DILIGENCE, REVIEWS, RISK ASSESSMENT</b>	
2016-2017	Environmental Specialist: Environmental management services in fulfilment of the environmental legal obligations for the Dingleton Resettlement Project, near Kathu in the Northern Cape
2016	Environmental Specialist: Environmental and Social Due Diligence Review of two wind farm assets located in South Africa
On-going	Environmental Specialist: Environmental input into various pre-feasibility studies linked to the exploration/development/expansion of mining operations.
2015	Environmental Specialist: Legal compliance review of Everest Platinum Mine (Mpumalanga) in support of re-commencing operations
2015 & 2016	Environmental Specialist: Update to Tharisa Mine’s Competent Persons Report
2015	Project Manager: Alfred Knight Lab Due Diligence
2012 and 2013	Environmental Specialist: Due diligence on compliance, water, waste and air related aspects as part of an investment investigation at Silicon Technology (Pty) Ltd
2013	Environmental Specialist: A number of due diligences of gold exploration projects in Tanzania: New African Mining Fund
2012	Environmental Specialist: Input to a legal environmental register for African Barrick Gold’s operations in Tanzania
2012	Environmental Specialist: Peer Review of baseline specialist studies for Gold Fields Damang Gold Mine
2011	Environmental Specialist: Afplats Shaft Risk Assessment Update for Inkosi - Imbasa
2011	Environmental Specialist: Review of Barrick Tulawaka Tailings EIA
2010	Expert Consultant: Environmental input into the ESIA for the expansion of the Morupule Colliery in Botswana: Ecosurv Environmental Consultants
<b>POLICY DRAFTING</b>	
2008	Project Manager: Assistance with drafting a policy, guideline document and procedure for stakeholder participation during explorations operations for the Implats Group: Impala Platinum Limited (Impala)



WATER	
On-going	Project Reviewer: Of a number of water use license applications for mining operations across South Africa
2013	Project Manager: Assistance in compilation of water use license application (WULA) and integrated water and waste management plan (IWWMP) for a new platinum mine and concentrator plant (Mphahlele Project) in the Limpopo Province: Tameng Mining and Exploration (Pty) Ltd
2012	Project Reviewer: Co-ordination of integrated water and waste at Everest Platinum Mine: Aquarius Platinum (South Africa) (Pty) Ltd
2011	Project Manager: Water Supply Study for the Moonlight Iron Ore Project: Turquoise Moon Trading (Pty) Ltd
2011	Project Manager: ESIA for a greenfields wellfield development in Botswana (to supply the Letlhakane Project): A-Cap Resources Limited
2010	Project Reviewer: Re-registration of waste-related water uses at Everest Platinum Mine: Aquarius Platinum (South Africa) (Pty) Ltd
2010	Project Reviewer: Assistance with addressing water use license related issues: Marula Platinum (Pty) Ltd
2010	Project Manager: Water use license application (WULA) for the South Deep Doornpoort tailings dam
2006	Project Manager: Compilation of water use license application (WULA) and integrated water and waste management plan (IWWMP) for South Deep Mine:
Cancelled	Project Reviewer: Basic assessment for a water supply project to the Pilanesberg Platinum Mine Operations: Pilanesberg Platinum Mines (Pty) Ltd
MEMBERSHIPS	
PrSciNat	Registered with the South African Council for Natural Scientific Professions as a Professional Natural Scientist (PrSciNat) in Environmental Science (Reg. No. 400183/05)
EAPAN	Registered with the Environmental Assessment Professionals of Namibia (EAPAN) as a Lead Practitioner (Membership No. 121)
IAIA	Member of the International Association for Impact Assessments (IAIA), South African Affiliate since 2005
PUBLICATIONS	
As part of Masters Dissertation	Onderstepoort Journal of Veterinary Science, 2005. "Aspects of the ecology of the Asian tapeworm <i>Bothriocephalus acheilognathi</i> Yamaguti, 1934 in yellow fish in the Vaal dam, South Africa"





**herewith certifies that**

**Alessandra Pheiffer**

Registration number: 400183/05

**is registered as a**

**Professional Natural Scientist**

in terms of section 20(3) of the Natural Scientific Professions Act, 2003  
(Act 27 of 2003)

in the following field(s) of practice (Schedule 1 of the Act)

**Environmental Science**

Effective 26 July 2005

Expires 31 March 2019



A handwritten signature in black ink, appearing to read 'Botha', written over a horizontal line.

President

A handwritten signature in black ink, appearing to read 'M. J. ...', written over a horizontal line.

Executive Director

# CURRICULUM VITAE



## CHIARA D'EGIDIO KOTZE

### ENVIRONMENTAL CONSULTANT

#### QUALIFICATIONS

MSc	2012	Ecology, Environment & Conservation
BSc (Hons)	2009	Ecology, Environment & Conservation
BSc	2008	Ecology, Environment & Conservation and Zoology

#### EXPERTISE

- Environmental Impact Assessment
- Compliance Auditing
- Water use Licences
- Permitting

Chiara D'Egidio Kotze is an environmental scientist and has been involved in a wide variety of projects involving mining, power transmission, water management, waste management, electricity co-generation, tailings facilities, ferrosilicon production and cemetery establishment. She has also been involved in permitting for water use and removal of protected species. Chiara has conducted environmental assessments, environmental management program audits and has been involved in public consultation processes for various projects.

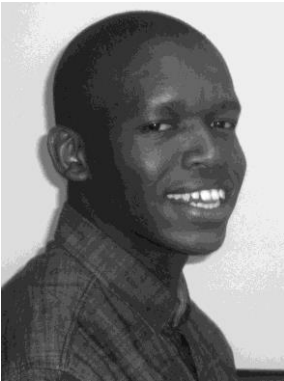
Chiara joined the SLR team in 2012.

#### PROJECTS

	<b>Infrastructure</b>
<b>New Kathu Cemetery (2017)</b>	A new cemetery was required by the municipality as the existing cemetery in the town had reached capacity. Project tasks included public consultation, impact assessment compilation, specialist management, project management, permitting for removal of protected trees, permitting for water use for infrastructure near a 1:100 year floodline.
<b>Erongo RED Powerline Upgrade (2017)</b>	Erongo RED planned to establish a new 44 kV powerline near Swakopmund as an upgrade in the area was required for load growth. Project tasks included compilation of an impact assessment.
<b>Relocation of a Section of the 275kV Eskom Powerline for the Expansion of Sishen Mine (2015)</b>	A section of an Eskom powerline needed to be relocated to allow for the expansion of the Sishen Iron Ore Mine. Project tasks included public consultation, impact assessment compilation, specialist management, project management, permitting for removal of protected trees and permitting for water use for infrastructure near wetland pans.
	<b>Mining</b>
<b>Côtè Gold Environmental Effects Review and Closure Plan (2017-2019)</b>	Assisting with the compilation of the Environmental Effects Review Report and the Closure Plan. Project tasks included general project assistance and report compilation.

<p><b>Taung Gold Shaft 6 Refurbishment (2014-2017)</b></p>	<p>Taung Gold planned to dewater and refurbish a disused shaft to mine gold and establish additional surface infrastructure including a gold plant and a tailings management facility. Project tasks included public consultation, impact assessment compilation, specialist management and project management.</p>
<p><b>Changes to the Bakubung Platinum Mine (2015-2017)</b></p>	<p>Bakubung Mine planned to amend their existing authorization to incorporate changes to the Mine including extension of the tailings management facility and changes to the plant and capacity. Project tasks included public consultation, impact assessment compilation, specialist management and project management.</p>
<p><b>Exxaro Superfines Tailings Project (2013-2016)</b></p>	<p>Exxaro planned to construct a superfines tailings management facility for their Grootegeluk Coal Mine operations. Project tasks included public consultation, project management and specialist management.</p>
<p><b>Lafarge Environmental Management Program Audits (2012-2016)</b></p>	<p>Lafarge operate various quarries around South Africa and require compliance audits to be conducted for their operations for compliance with authorized management measures. Project tasks included conducting compliance audits and project management.</p>

# CURRICULUM VITAE



## CLIVE PHASHE

### JUNIOR ENVIRONMENTAL CONSULTANT

Environmental Management, Planning and Approvals,  
Africa

### QUALIFICATIONS

**BSc Hons** 2018 BSc Honours in Environmental Management from University of South Africa

**BSc** 2016 Life and Environmental Sciences (with Geology and Environmental Management Major from University of Johannesburg

### EXPERTISE

- Stakeholder Engagement
- Public Participation Processes

Clive is a Junior Environmental Consultant with SLR and has over 2 years' experience within the environmental consulting field. Clive has assisted in a variety of mining projects since joining the company.

### PROJECTS

**West Wits Mine (Current)** Project Assistant: (EIA/EMP) for the West Wits mining right application in Gauteng: West Wits MLI (Pty) Ltd.

**Project Jordan (2017-2019)** Project Assistant: Basic Assessment Report for Project Jordan, a new Maize Wet Mill Plant in Vereeniging.

**Northam Platinum (2017)** Project Assistant: EIA and EMP for the relocation of a security perimeter and infrastructure footprint expansion at a BMR and Smelter complex in the Limpopo Province: Northam Platinum