

CURRICULUM VITAE

Hanré Crous

Name	Hanré Pieter Crous
Date of Birth	15 August 1973
Nationality	South African
Identity Number	730815 5136 088
Sex	Male
Marital Status	Married
Language	English, Afrikaans

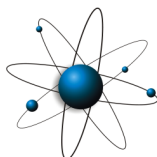
Qualifications & Professional Membership

- Bachelor of Science – Biochemistry & Zoology: University of the Free State, 1996
- Bachelor of Science (Honours) in Zoology: University of the Free State, 1997
- Master of Science (cum laude) in Zoology: University of the Free State, 1999
- Associate Environmental Auditor (ISO 14001): UK Institute of Environmental Management and Assessment – IEMA (Registration in process)

Key Experience

Seven years experience in Integrated Environmental Management (Strategic planning, EIA's, EMP's, monitoring, auditing, pollution abatement, rehabilitation etc.), including:

- **Integrated environmental management for the establishment, expansion, upgrade, rehabilitation and optimisation of light and heavy industrial processes** including the metallurgical, paper, mining and power generation industries
- **Integrated environmental management studies for the establishment, operation, auditing, closure and rehabilitation** of general waste landfills and transfer stations, industrial/hazardous waste landfills, incinerators, and hazardous effluent dams
- **Mining permit and licence applications** in terms of the Mineral and Petroleum Resources Development Act, 2002
- **Environmental impact assessments, environmental management plans and public participation programmes** for small, medium and large linear and site specific infrastructure and land developments
- **Environmental management plans (EMP)** for the construction, operational and decommissioning/closure phases of infrastructure and land developments, waste management facilities and heavy industrial processes
- **Environmental advisory services and strategic environmental management** including policy and procedures development, legal enforcement and compliance management, strategic planning, enviro-legal procedures and peer reviews
- **Specialist training** including training material development and training in environmental compliance enforcement for Department of Environmental Affairs & Tourism Environmental Management Inspectors (Green Scorpions).



POSTAL ADDRESS:
PO Box 73420
Lynnwood Ridge
0040

PHYSICAL ADDRESS:
9 Victoria Street
Oaklands
Johannesburg

WEB SITE
www.escience.co.za
E MAIL:
hanre@escience.co.za

TEL:
+27 (0)11 728
2683
FAX:
+27 (0)86 610
6703

- **Environmental auditing** including due-diligence, ISO 14001, legal compliance and waste audits
- **Project management** of numerous environmental and strategic projects
- **Business management** including human resource and financial management, strategic business planning, mentoring, human resource management, quality management, marketing, drafting proposals, project review and administration

Employment History & Project Experience

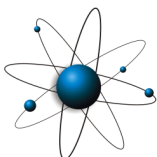
Environmental Science Associates

February 2007 - Current

Project Management & Development Manager

Key Projects:

- Assmang Ferrochrome, Machadadorp: EIA for capacity to alternate between ferrochrome and ferromanganese production
- Section 24G Application and Rehabilitation Plan for property development in Meyerton
- DEAT Project Ferro: Specialist technical advisor to EMI team for compliance inspection of Mittal Steel Vereeniging
- SABS ISO14001 Legal Training: Practical application of NEMA Air Quality Act and NEMA EIA Regulations
- DEAT Policy development on High Temperature Thermal Destruction of Waste, and Guideline Development, EIA Review and Capacity Building on use of Alternative Fuels and raw materials in Cement Kilns
- IMPLEX Legal Training Seminar: Proposed amendments to NEMA EIA Regulations and Minerals & Petroleum Resources Development Act and Regulations
- DEAT Environmental Management Inspector (EMI; 'Green Scorpions') Training Manual and Programme (Inspections & Investigations)
- Transalloys due diligence audit update
- Extrupet PET and HDPE recycling facility: Environmental legal compliance audit
- Van Eeden Holding Trust Borrow Pit: Development of EMP for Permit Application to DME
- Hazardous Chemicals Risk Assessment training (B.Sc. Chemistry Honours students & lecturers, WITS)
- Rietfontein Golf Academy Illegal Development – S31A, Rehabilitation & S24G Application
- Kanhym Pig Manure Anaerobic Digester & Biogas Recovery System (CDM Project) – Environmental Impact Assessment and EMP
- Turfontein Racecourse Night-time Illumination Basic Assessment – ROD & Appeal procedure



POSTAL ADDRESS:
PO Box 73420
Lynnwood Ridge
0040

PHYSICAL ADDRESS:
9 Victoria Street
Oaklands
Johannesburg

WEB SITE
www.escience.co.za
E MAIL:
hanre@escience.co.za

TEL:
+27 (0)11 728
2683
FAX:
+27 (0)86 610
6703

ARCUS GIBB (Pty) Ltd

July 2005 – January 2007

Senior Environmental Scientist, Associate and Head: Rivonia Environmental Division.
Duties include environmental consulting services and business management.

Key Projects:

Environmental Impact Assessments:

- EIA and EMP for the proposed construction of a conventional nuclear power station and associated infrastructure in the Western Cape
- EIA and Public Consultation Process for the 260 km 765kV transmission power line from the Hydra to Perseus substations (Northern Cape and Free State)
- Extrupet PET and HDPE waste recycling facility in Germiston, Gauteng
- EIAs for four housing developments in Gauteng

Strategic Environmental Assessments:

- Strategic Environmental Assessment of the one million ha Heritage Park. This ecologically sensitive, socio-economically complex Park will encompass Pilansberg and Madikwe Nature Reserve and cross the border between South Africa and Botswana
- Strategic Environmental Assessment of the Vaalkop Dam Provincial Nature Reserve. This proposed nature reserve will encompass the Vaalkop Dam and surrounding area and link up with the Pilansberg Nature Reserve

Environmental Audits:

- Pre-acquisition due-diligence audits of four distribution facilities for an international soft-drink company
- Waste disposal site audits of the Linbro and Marie-Louise waste sites, Johannesburg

Integrated Environmental Management and Permitting:

- R 32 million upgrade to Kelvin Power Station water-use and effluent management system in order to comply with relevant environmental and other regulations and legislation
- DEAT Compliance Monitoring Strategy
- Department of Mineral and Energy Affairs Applications for the R10 billion Eskom Braamhoek Pumped Storage Scheme in the Drakensberg

Strategic Environmental Focus (Pty) Ltd

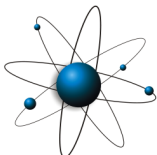
September 2004 – June 2005

Project Manager: EIA Unit and Unit, Manager: Mining and Industrial Unit

Key Projects:

Land Development Environmental Impact Assessments (EIA):

- EIA and public participation process for the Nietgedacht filling station (Johannesburg, Gauteng), located in a ecologically sensitive area
- EIA and public participation process for the change in land-use of the Heidelberg showground (Gauteng) for the establishment of a light industrial area
- Exemption, stormwater management plan, EMP and public participation process for the Midridge Park X13 (Midrand, Gauteng) housing development



POSTAL ADDRESS:
PO Box 73420
Lynnwood Ridge
0040

PHYSICAL ADDRESS:
9 Victoria Street
Oaklands
Johannesburg

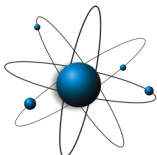
WEB SITE
www.escience.co.za
E MAIL:
hanre@escience.co.za

TEL:
+27 (0)11 728
2683
FAX:
+27 (0)86 610
6703

- EIA for the Alberton Dam (Gauteng) dredging and upgrade, and disposal of waste material
- Five EIAs and public participation processes for the Pomona X75, Pomona X77, Bonaero Park X13 and Hughes X59 (Kempton Park, Gauteng) housing development
- Two EIAs and public participation processes for the Delmas housing and shopping mall developments (Delmas, Mpumalanga)
- EIA for the Rustenburg shopping mall development (North West Province)
- EIA, EMP and public participation process for the BBQ Downs (Midrand, Gauteng) housing development
- EIA, EMP and public participation process for the extension of a link road (Midrand, Gauteng)
- EMP for the Van Riebeeck Park housing development (Kempton Park, Gauteng)
- EIA for the Raslow housing development (Centurion, Gauteng)
- EIA, public participation and appeal process for the Hans Strydom Road filling station (Tshwane, Gauteng)
- EIA, public participation and appeal process for the Rubenstein filling station (Tshwane, Gauteng)
- EIA and public participation process for the upgrade of the Union filling station (Northam, Limpopo)
- EIA and public participation process for the Belfast highway filling station on the N4 (Belfast, Mpumalanga)
- EIA and public participation process for the Waltloo filling station (Tshwane, Gauteng)

Industrial/Waste Environmental Impact Assessments (EIA):

- EIA (including air quality, health risk and process engineering review specialist studies) and public participation process for the Mittal Steel (ISCOR) Sinterplant upgrade project (Vanderbijlpark, Gauteng)
- EIA for the Mittal Steel (ISCOR) new hazardous waste (metal slag) disposal site (Vanderbijlpark, Gauteng)
- EIA (including air quality and health risk specialist studies) and public participation process for the Mittal Steel (ISCOR) new Galvanising Line (Vanderbijlpark, Gauteng)
- EIA (*incomplete*) for the Highveld Steel power generation plant (Witbank, Mpumalanga)
- EIA for the William Tell particle board manufacturing plant (Johannesburg, Gauteng)
- EIA (including air quality, health risk and process engineering review specialist studies) and public participation process for the CFT Brick manufacturing plant (Vanderbijlpark, Gauteng) using slag waste from Mittal Steel (ISCOR)
- CEMP and OEMP for the Nigel waste transfer station (Nigel, Gauteng)
- Monitoring plan and public participation for the closure and rehabilitation of the Alberton North waste landfill (Gauteng)
- EIA (including air quality, health risk, traffic, geotechnical etc. specialist studies) and public participation process for the new Zesfontein regional waste disposal site (Benoni, Gauteng)
- Environmental exemption studies and public participation process for the Afrox PMP facility expansion and upgrade (Germiston, Gauteng)
- Environmental exemption studies (including risk assessments) and public participation processes for twelve Afrox LPG storage facilities (Johannesburg & Tshwane, Gauteng)
- Environmental exemption studies (including risk assessments) and public participation processes for two Afrox bulk (industrial) LPG storage facilities (Johannesburg, Gauteng)



POSTAL ADDRESS:
PO Box 73420
Lynnwood Ridge
0040

PHYSICAL ADDRESS:
9 Victoria Street
Oaklands
Johannesburg

WEB SITE
www.escience.co.za
E MAIL:
hanre@escience.co.za

TEL:
+27 (0)11 728
2683
FAX:
+27 (0)86 610
6703

Mining Applications:

- Ten prospecting permit applications and public participation processes for Impala Platinum (Mpumalanga, Limpopo & North West provinces)
- Mining permit applications for borrow pits associated with the TCTA water pipeline between the Vaal Dam and Secunda (Gauteng & Mpumalanga)
- Mining right applications (EIA) for two new Lonmin Platinum mines (Rustenburg area, North West)
- Mining right application (EIA) for the new Boynton Platinum mine (Pilanesburg area, North West)
- Mining right application (EIA) for the new Kumba Resources iron ore mine (Kathu, Northern Cape)
- Mining permit applications for borrow pits associated with the N11 upgrade (Witbank, Mpumalanga)

Environmental Advisory Services:

- EIA and authorisation peer review and enviro-legal support for the Heilbron filling station (Free State) appeal and High Court review procedures
- EIA peer review and enviro-legal support for the illegal Vaalwater bonemeal facility (Limpopo)
- Peer review and appeal against denied authorisation for the Capital Park filling station, including specialist air quality and health risk assessments (Tshwane, Gauteng)
- Pre-acquisition due diligence assessment for international cigarette manufacturing company (Germiston, Johannesburg)

**Gauteng Department of Agriculture, Conservation & Environment
November 1999 – August 2004**

Assistant Director: Integrated Waste Management & Pollution Abatement.

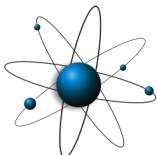
Duties included:

- Implementation of the EIA Regulations, Environment Conservation Act and NEMA
- Review of EIA applications for authorisation, Environmental Management Plans and Mining EMPR's
- Focus on IEM and strategic planning in large industries, with specific reference to air quality and solid waste management
- Environmental performance auditing of waste landfills and monitoring of compliance with conditions of authorisations, and provisions of legislation
- Identifying needs for, and development of, legislation, policies, strategies and guidelines
- Responsibility for all HR issues as the first line manager of Environment Officers.
- Various managerial responsibilities (budget, business planning, performance reviews, interviews)

Project review, regulation and development included:

Integrated Waste Management:

- Establishment, operation, auditing, closure and rehabilitation of general waste landfills and transfer stations, industrial/hazardous waste landfills, and hazardous effluent dams



**POSTAL
ADDRESS:**
PO Box 73420
Lynnwood Ridge
0040

**PHYSICAL
ADDRESS:**
9 Victoria Street
Oaklands
Johannesburg

WEB SITE
www.escience.co.za

E MAIL:
hanre@escience.co.za

TEL:
+27 (0)11 728
2683
FAX:
+27 (0)86 610
6703

- General and hazardous waste, industrial effluent and sewage characterisation, reduction, recycling, treatment and re-use
- Hazardous and medical waste treatment and incineration

Industrial Scheduled Processes:

- Establishment, expansion and upgrade of various large industry processes, mostly metallurgical
- Air quality impact assessments, process & technology review, cleaner technology, dispersion modelling & health risk assessments, and HAZOP assessments
- Air pollution control equipment installation, upgrade and technology review

Energy Generation and Supply:

- Coal fired power station due diligence assessment, environmental audit, air quality impact assessment and waste management
- Power generation from industrial process emissions
- Large scale electricity transmission lines
- Township electrification and distribution networks
- Energy efficiency and alternative energy use

Hazardous Chemicals Management:

- Manufacture, storage, handling and distribution of hazardous chemicals including gas, as well as petroleum products, including filling stations
- Product safety review, product substitution and major hazard installation risk assessments

Mining:

- EMPR's, rehabilitation, environmental and waste management for various types of mining, mostly sand, clay, rock, diamond and gold mining

Land-use Planning:

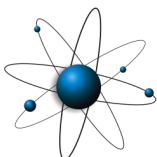
- Change in land-use (rezoning), and related urban and rural development projects

Other Activities:

- Water and sewage treatment, infrastructure, storage (reservoirs) and distribution (pipelines)
- Abattoirs, rendering plants, cemeteries and crematoria

Strategic Environmental Management:

- Large industry strategic environmental management plan development, prioritisation and implementation
- Regional strategic environmental assessment & local authority IDP
- Cleaner technology review and implementation
- Integrated waste management strategy and planning
- State of environment reporting, indicators and environmental information databases
- National law reform – NEMA EIA Regulations, Waste Management Bill, Air Quality Bill, and Tyre, Beverage Container and Plastic Bag Regulations
- Independent EIA review
- General legislation – interpretation, development, appeals and court cases



POSTAL ADDRESS:
PO Box 73420
Lynnwood Ridge
0040

PHYSICAL ADDRESS:
9 Victoria Street
Oaklands
Johannesburg

WEB SITE
www.escience.co.za
E MAIL:
hanre@escience.co.za

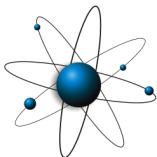
TEL:
+27 (0)11 728
2683
FAX:
+27 (0)86 610
6703

Industrial projects [Metalloys Meyerton (Samancor), Mittal Steel (ISCOR), MMC Krugersdorp, SAPPI, EnviroServ, ZINCOR, Kelvin Power Station etc.] included:

- Integrated Waste Management: Establishment, operation, auditing, closure and rehabilitation of general waste landfills and transfer stations, industrial/hazardous waste landfills, and hazardous effluent dams. General and hazardous waste, industrial effluent and sewage characterisation, reduction, recycling, treatment and re-use. Hazardous and medical waste treatment and incineration.
- Industrial Scheduled Processes: Establishment, expansion and upgrade of various large industry processes, mostly metallurgical. Air quality impact assessments, process & technology review, cleaner technology, dispersion modelling & health risk assessments, and HAZOP assessments. Air pollution control equipment installation, upgrade and technology review.
- Energy Generation and Supply: Coal fired power station due diligence assessment, environmental audit, air quality impact assessment and waste management.
- Hazardous Chemicals Management: Manufacture, storage, handling and distribution of hazardous chemicals including gas, as well as petroleum products, including filling stations. Product safety review, product substitution and major hazard installation risk assessments.
- Mining: EMPR's, rehabilitation, environmental and waste management for various types of mining, mostly sand, clay, rock, diamond and gold mining.
- Strategic Environmental Management: Large industry strategic environmental management plan development, prioritisation and implementation, regional SEA, cleaner technology review and implementation, Integrated waste management strategy and planning, state of environment reporting, indicators and environmental information databases, and legislation interpretation, development, appeals and court cases.

Courses

- Foundation Environmental Auditor Course (ISO 14001): Aspects International UK / Crystal Clear; IEMA UK (Institute of Environmental Management and Assessment) approved course
- Supervision Training: Management and training of staff, performance assessments, disciplinary actions
- Covey Training - The 7 Habits of Highly Effective People: Time Management, Personal Development, Management Skills and Prioritisation
- Conflict Resolution: Conflict Management in terms of the National Environmental Management Act; Department of Environmental Affairs & Tourism
- Public Finance Management Act: Internal
- Logical Framework Approach (LFA) to Project Preparation: Project Development, Problem Statements, Objective Setting, Measures to Achieve Objectives, Funding, Project Management etc; DANCED-Danish Co-operation for Environment and Development
- Principles of EIA Review: Methodology of Environmental Impact Assessment Review; Department of Environmental Affairs & Tourism, and the U.S. Environmental Protection Agency



POSTAL ADDRESS:
PO Box 73420
Lynnwood Ridge
0040

PHYSICAL ADDRESS:
9 Victoria Street
Oaklands
Johannesburg

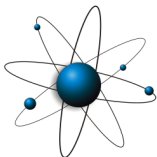
WEB SITE
www.escience.co.za
E MAIL:
hanre@escience.co.za

TEL:
+27 (0)11 728
2683
FAX:
+27 (0)86 610
6703

ENVIRONMENTAL SCIENCE ASSOCIATES

Hanré Crous

- Personnel Performance Management System (PPMS) Training: Department of Agriculture, Conservation, Environment & Land Affairs
- Entrepreneurship and Business Management: Unit for Small Business Development; University of the Orange Free State
- Environmental Educators Training: Wildlife and Environment Society of South Africa



**POSTAL
ADDRESS:**
PO Box 73420
Lynnwood Ridge
0040

**PHYSICAL
ADDRESS:**
9 Victoria Street
Oaklands
Johannesburg

WEB SITE
www.escience.co.za

E MAIL:
hanre@escience.co.za

TEL:
+27 (0)11 728
2683
FAX:
+27 (0)86 610
6703