APPENDIX N

Socio-Economic Impact Assessment
REPORT

Application for EA, AEL and GA for the proposed Lanele Oil Terminal 1 (Lot 1) Project at Ambrose Park, in Bayhead, Durban: Socio-Economic Impact Assessment

Lanele Group (Pty) Ltd

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October 2019
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# Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation / Acronym</th>
<th>Explanation</th>
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<tbody>
<tr>
<td>CBD</td>
<td>Central Business District</td>
</tr>
<tr>
<td>DBSA</td>
<td>Development Bank of Southern Africa</td>
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<tr>
<td>EHS</td>
<td>Environmental, Health, and Safety</td>
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<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<td>EMPr</td>
<td>Environmental Management Programme</td>
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<td>Golder</td>
<td>Golder Associates Africa (Pty) Ltd</td>
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<tr>
<td>ha</td>
<td>Hectare</td>
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<tr>
<td>IAIAsa</td>
<td>International Association for Impact Assessment South Africa</td>
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<tr>
<td>IAP2</td>
<td>International Association for Public Participation</td>
</tr>
<tr>
<td>IDP</td>
<td>Integrated Development Plan</td>
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<tr>
<td>IFC</td>
<td>International Finance Corporation</td>
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<tr>
<td>IMO</td>
<td>International Maritime Organisation</td>
</tr>
<tr>
<td>JET A1</td>
<td>Aviation grade kerosene</td>
</tr>
<tr>
<td>Lanele</td>
<td>Lanele Group (Pty) Ltd</td>
</tr>
<tr>
<td>MFO</td>
<td>Marine fuel oil</td>
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<tr>
<td>MGO</td>
<td>Marine gas oil</td>
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<tr>
<td>MHI</td>
<td>Major Hazard Installation</td>
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<tr>
<td>MPP</td>
<td>Multi product pipeline</td>
</tr>
<tr>
<td>NOOA Terminal</td>
<td>NOOA Fuel Storage and Handling Terminal</td>
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<tr>
<td>ppm</td>
<td>Parts per million</td>
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<tr>
<td>Project</td>
<td>Lanele Oil Terminal 1 (Lot 1)&quot; project</td>
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<tr>
<td>Project site</td>
<td>Portion of the Kings Royal Flats No. 16576 and the remainder of ERF 10019</td>
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<td>SANS</td>
<td>South African National Standard</td>
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<td>SDF</td>
<td>Spatial Development Framework</td>
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<tr>
<td>Abbreviation / Acronym</td>
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<tr>
<td>SIA</td>
<td>Socio-Economic Impact Assessment</td>
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<tr>
<td>Stats SA</td>
<td>Statistics South Africa</td>
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<tr>
<td>Thyssenkrupp</td>
<td>Thyssenkrupp Industrial Solutions South Africa (Pty) Ltd</td>
</tr>
<tr>
<td>ULP 95</td>
<td>Unleaded Petrol 95 octane</td>
</tr>
<tr>
<td>ULSD</td>
<td>Ultra-Low Sulphur Diesel</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compound</td>
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APPENDICES

APPENDIX A
Specialist CVs

APPENDIX B
Specialist Declarations
1.0 PROJECT INTRODUCTION

Lanele Group (Pty) Ltd (Lanele) is a privately-owned South African company with a track record in the downstream oil, gas and energy sector. Lanele forms part of the Lanele Group of entities, which was founded in 2005 to focus on the energy and commodities sector. Using in-house expertise honed within the oil refining, gas, and coal to the petrochemical industry, the company has made in-roads into the downstream segment of the energy production value chain. Ventures have been within the biofuels sector, with a bio-refinery that will produce bio-ethanol and power. The company aims to become a fully integrated energy and commodities trading company. This includes interests throughout the energy value chain, comprised of crude oil, fuels, lubricants and power and extending to industry-related commodities such as steel, copper, and aluminium.

Lanele is proposing to develop and operate a liquid fuel blending and storage terminal at Ambrose Park, in Bayhead, Durban to be known as the “Lanele Oil Terminal 1 (Lot 1)” project. The portion of land is approximately 7 hectares (ha) and has been leased from Transnet Properties for 30 years. The first phase of the proposed Project is funded by the Development Bank of Southern Africa (DBSA).

The proposed Project is intended for the receipt, storage, blending and issuing of refined products. It will import petrol, diesel and blending components via the port of Durban. The distribution of product will take place via the multi products pipeline (MPP), previously known as the new multi products pipeline to Gauteng and via road and/or rail, by Lanele and storage tenants at the facility. Lanele also has the intention of importing low sulphur fuel oil and supplying it to the port via the facility.

1.1 Project Development

Lanele commissioned engineering company, Thyssenkrupp Industrial Solutions South Africa (Pty) Ltd (Thyssenkrupp) to complete the pre-feasibility study and bankable feasibility study. Lanele now requires the necessary Environmental Authorisation undertaken though a Scoping and Environmental Impact Assessment (EIA) process before construction and operations may commence. Golder Associates Africa (Pty) Ltd (Golder), as the Environmental Assessment Practitioner, has been commissioned to undertake the EIA process. The scope of the EIA only relates to the inside battery limits portion of the proposed Project. While some aspects of the outside battery limits portion of the project will be discussed, the outside areas of the proposed project do not form part of the scope of this EIA.

The proposed Project will be developed in phases over the first few years to reach a total liquid fuels storage capacity of 225 000 m³.

1.2 Project Description

1.2.1 Location

The proposed Project is located in Ambrose Park, in Bayhead, Durban (Figure 1). The parcel of land is approximately 7 ha in extent, on a portion of the Kings Royal Flats No. 16576 and the remainder of ERF 10019. Ambrose Park is currently being proposed for tank farm development projects. The proposed Project is located north of the proposed NOOA Fuel Storage and Handling Terminal (NOOA Terminal).
Figure 2: Layout of the proposed Lanele Terminal 1 (lot 1) project
1.2.2 Facility Details

The operation of the proposed Project is primarily pipeline driven with limited gantry loading and, therefore, will be operated as follows:

- Single shift operation;
- 8-hour working day;
- 5-day working week;
- 21 working days per month; and
- Ship receipts or pipeline injections after hours can be managed on an overtime basis with minimal staff.

The proposed Project will store mostly diesel 50 parts per million (ppm) as ultra-low sulphur diesel (ULSD), special diesel products and blends, unleaded petrol 95 octane (ULP 95), high octane blend stock, low octane ULP, aviation grade turbine kerosene (JET A1), in addition to blending components such as reformate, naphtha, biofuels, marine gas oil (MGO) and marine fuel oil (MFO) 500 ppm according to the International Marine Organisation (IMO) 2020 specification (Figure 2).

ULSD, ULP 95 and JET A1 will be received from Berths 6 and 9 (and also possibly Berth 2) in the Cutler Complex via common user infrastructure. The details of the receipt of low octane petrol, high octane blend stock and special diesel blend stock is based on the following assumptions:

- Low octane product is received from a destination approximately 5000 m away via pipeline at a rate of 600 m³/hr. Properties for calculation purposes have been assumed to be the same as ULP 95;
- High octane blend stock is assumed to be reformate. It is assumed to be received from Berth 2 at a rate of 800 m³/hr at maximum parcel size of 10 000 m³;
- Low octane product is blended with high octane blend stock in a ratio of 4:1; and
- Diesel blend stock is received from a destination approximately 5000 m away via pipeline at a rate of 600 m³/hr. Properties for calculation purposes have been assumed to be the same as ULSD.

ULSD, ULP 95 and JET A1 will be dispatched to Gauteng via the MPP. ULSD, ULP 95 and JET A1 will also be dispatched via road tankers. MGO will be received from Berth 2. MGO will be dispatched via pipeline to the storage within the Port – located along side Berth 10. The proposed Project will have the ability to:

- Blend (in-line) low octane unleaded petrol with high octane blend stock (e.g. toluene or reformate) to create ULP 95;
- Blend (in-tank) ULSD with blend stock to create special diesel products;
- Add colorant (in-line) to imported ULP 95; and
- Add conductivity additive (in-line) to imported ULSD product.
2.0 POLICY LEGAL AND ADMINISTRATIVE FRAMEWORK

The Socio-Economic Impact Assessment (SIA) is undertaken in accordance with the legal and administrative framework documents outlined in this section.

2.1 National Environment Management Act (Act 107 of 1998)

The National Environment Management Act (Act 107 of 1998) (NEMA), as amended, outlines several principles that apply to actions that may significantly affect the environment. In the context of this SIA, the following principles are applicable:

- Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably;
- Development must be socially, environmentally and economically sustainable; and
- The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.

2.2 Environmental Impact Assessment Regulations of 2014

The purpose of the Environmental Impact Assessment Regulations of 2014, as amended (RSA, 2014), is to regulate applications for environmental authorisation, subjected to environmental impact assessment, to avoid or mitigate detrimental impacts on the environment, and to optimise positive environmental impacts. In terms of these regulations, the SIA must contain the following (Table 1):

Table 1: Specialist report requirements

<table>
<thead>
<tr>
<th>Section</th>
<th>Requirement</th>
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<tr>
<td>1a</td>
<td>Details of-</td>
<td>Section 13.0 and</td>
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<td>- the specialist who prepared the report; and</td>
<td>APPENDIX B</td>
</tr>
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<td></td>
<td>- the expertise of that specialist to compile a specialist report including a curriculum vitae.</td>
<td></td>
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<tr>
<td>1b</td>
<td>A declaration that the specialist is independent in a form as may be specified by the competent authority</td>
<td>Section 13.0</td>
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<tr>
<td>1c</td>
<td>An indication of the scope of, and the purpose for which, the report was prepared.</td>
<td>Section 3.0</td>
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<tr>
<td>1cA</td>
<td>An indication of the quality and age of base data used for the specialist report.</td>
<td>Section 5.0</td>
</tr>
<tr>
<td>1cB</td>
<td>A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change.</td>
<td>Section 7.0</td>
</tr>
<tr>
<td>1d</td>
<td>The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>1e</td>
<td>A description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used.</td>
<td>Sections 5.0 and 8.1</td>
</tr>
<tr>
<td>Section</td>
<td>Requirement</td>
<td>Relevant section</td>
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<td>1f</td>
<td>Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives.</td>
<td>Section 1.2</td>
</tr>
<tr>
<td>1g</td>
<td>An identification of any areas to be avoided, including buffers.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>1h</td>
<td>A map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers.</td>
<td>Section 4.0</td>
</tr>
<tr>
<td>1(i)</td>
<td>A description of any assumptions made and any uncertainties or gaps in knowledge.</td>
<td>Section 11.0</td>
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<tr>
<td>1(j)</td>
<td>A description of the findings and potential implications of such findings on the impact of the proposed activity or activities.</td>
<td>Sections 8.0 and 12.0</td>
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<td>1(k)</td>
<td>Any mitigation measures for inclusion in the Environmental Management Programme (EMPr).</td>
<td>Section 10.0</td>
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<td>1(l)</td>
<td>Any conditions for inclusion in the environmental authorisation.</td>
<td>Section 12.0</td>
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<tr>
<td>1(m)</td>
<td>Any monitoring requirements for inclusion in the EMPr or environmental authorisation.</td>
<td>Section 10.3</td>
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| 1(n)    | A reasoned opinion-  
  ■ whether the proposed activity, activities or portions thereof should be authorised;  
  ■ regarding the acceptability of the proposed activity or activities; and  
  ■ if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan. | Section 12.0             |
| 1(o)    | A description of any consultation process that was undertaken during the course of preparing the specialist report.                                                                                           | See Appendix C of EIA Report|
| 1(p)    | A summary and copies of any comments received during any consultation process and where applicable all responses thereto.                                                                                      | See Appendix C of EIA Report|
| 1(q)    | Any other information requested by the competent authority.                                                                                                                                                   | Not applicable           |

### 2.3 Performance Standards on Environmental and Social Sustainability

The International Finance Corporation (IFC): Performance Standards on Environmental and Social Sustainability (IFC, 2012) have been considered and incorporated throughout this assessment. The main standards applicable to this SIA study are summarised in this section.
2.3.1 Performance Standard 1: Social and Environmental Assessment and Management Systems

The objectives of Performance Standard 1 are to:

- Identify and assess social and environmental impacts, both adverse and beneficial, in the project’s area of influence;
- Avoid, or where avoidance is not possible, minimise, mitigate, or compensate for adverse impacts on workers, affected communities, and the environment;
- Ensure that affected communities are appropriately engaged on issues that could potentially affect them; and
- Promote improved social and environmental performance of companies through the effective use of management systems.

2.3.2 Performance Standard 4: Community Health, Safety and Security

The objectives of Performance Standard 4 are:

- To ensure that the safeguarding of personnel and property is carried out in a legitimate manner that avoids or minimises risks to the community’s safety and security; and
- To avoid or minimise risks to and impacts on the health and safety of the local community during the project life-cycle from both routine and non-routine circumstances.

2.3.3 Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

The project effects on biodiversity and natural resource management and utilisation are contained in the Biodiversity Impact Assessment, with the main findings presented in the Scoping and EIA Reports.

2.3.4 Performance Standard 8: Cultural heritage

The objectives of Performance Standard 8 are to:

- Identify and reduce or avoid adverse impacts on cultural heritage resources; and
- Ensure the participation of affected communities in the identification of, and potential mitigation of cultural heritage resources, recommending appropriate strategies for impact reduction and long-term cultural heritage management.

The project effects on cultural heritage are contained in the Cultural Heritage Assessment, with the main findings presented in the Scoping and EIA Reports.

2.4 General Environmental, Health, and Safety Guidelines

The IFC: General Environmental, Health, and Safety (EHS) Guidelines (IFC, 2007a) are technical reference documents, which contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs. When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. In terms of the guidelines, the main performance levels and measures that are relevant to the SIA are contained in:

- Section 3: Community Health and Safety, which covers aspects of project activities taking place outside of the traditional project boundaries, including:
  - Water quality and availability;
- Structural; safety and project infrastructure;
- Life and fire safety;
- Traffic safety;
- Transport of hazardous materials;
- Disease prevention; and
- Emergency preparedness and response.

2.5 Environmental, Health, and Safety Guidelines for Crude Oil and Petroleum Product Terminal

The industry sector guideline of good international industry practice for infrastructure related to crude oil and petroleum products terminals (IFC, 2007b) relates to the proposed Project. The industry sector guideline is designed to be used in conjunction with the IFC: EHS Guidelines (IFC, 2007a). The guideline relates to land and shore-based petroleum storage terminals receiving and dispatching bulk shipments of crude oil, gasoline, middle distillates, aviation gas, lube oil, residual oil, compressed natural gas, liquid petroleum gas, and specialty products from pipelines, tankers, railcars and trucks for subsequent commercial distribution. In terms of these guidelines, the main performance levels and measures that are relevant to the SIA are contained in:

- **Section 1.3 Community Health and Safety:**
  - Facilities should prepare an emergency preparedness and response plan that considers the role of communities and community infrastructure as appropriate; and
  - Facilities should prepare risk management strategies associated with the transport of hazardous materials by road.

2.6 DBSA Environmental and Social Safeguards Standards

The DBSA Environmental and Social Safeguards Standards provides a reference guide for managing project environmental and social risks and impacts and enhancing project environmental and social performance (DBSA, 2018). In the context of this SIA, the relevant standards are summarised in this section.

2.6.1 Standard 1: General Overview: Assessment and Management of Environmental and Social Risks and Impacts

Standard 1 sets out the project proponent’s responsibilities in terms of assessing, managing and monitoring environmental and social risks and impacts associated with each stage of a project.

2.6.2 Standard 2: Stakeholder Engagement and Information Disclosure

Standard 2 sets out the project proponent’s responsibilities in terms of engaging stakeholders throughout the project life-cycle.

2.6.3 Standard 3: Gender Mainstreaming

The key objective of this standard is to ensure that the development process respects the dignity, human rights, economies, and cultures of all individuals, regardless of their gender, sexual orientation, or gender identity.
2.6.4 Standard 7: Community Health and Safety
The key objective of this standard is to address the health, safety, and security risks and impacts on project-affected communities and the corresponding responsibility of project proponents to avoid or minimise such risks and impacts, with attention to people who, because of their particular circumstances, may be vulnerable.

2.6.5 Standard 8: Cultural Heritage
The key objective of this standard is to protect cultural heritage throughout the project lifecycle.

2.6.6 Standard 10: Resource Efficiency and Pollution Prevention and Management
The key objective of this standard is to address resource equity, efficiency and pollution prevention over the life of a project.
3.0 SPECIALIST STUDY INTRODUCTION

This report presents the results of the SIA of the proposed Lanele Oil Terminal 1 (Lot 1) project. The objectives of the SIA were to:

- Develop a broad understanding of the socio-economic conditions within the study area (Figure 3);
- Identify the potential socio-economic impacts that could result from the proposed Project; and
- Recommend appropriate mitigation measures to reduce and, if possible, avoid negative impacts, while enhancing positive impacts.

4.0 STUDY AREA

In order to assess potential socio-economic impacts of the proposed Project, it is important to first understand, at a very high-level, the socio-economic context in which the proposed Project is to be developed. This potential area of impact is referred to as either the regional study area or the local study area and may extend beyond the project boundaries depending on the scale of the potential socio-economic impact. For the purposes of this SIA, the assessment will focus on three levels, namely the regional study area, the local study area, and the project site.

4.1 Regional Study Area

The Project site is located within the jurisdiction of the eThekwini Municipality, which is situated on the east coast of South Africa, within the Province of KwaZulu-Natal (eThekwini Municipality, 2017). The eThekwini Municipality is 2 555 km² in extent, extending from Tongaat in the north, to Umkomaas in the south, and Cato Ridge in the west.

The eThekwini Municipality is divided into four regions, namely the North, Central, South and West. The Central Spatial Region, within which the Project site is located, is commonly referred to as the Urban Core or Central Business District (CBD) of Durban (eThekwini Municipality, 2009). The Central Spatial Region is 677 km² in extent, extending from the uMngeni River in the north, to the uMlaas River in the south, and Pinetown in the West. The Region is characterised by high concentrations of economic activity and employment opportunities, a relatively high level of services, and dense residential development in the periphery.

For the purposes of this SIA, the regional study area will be defined by the boundaries of the South Durban Basin, which extends from the Durban CBD in the north to Umbogintwini in the south (Guastella and Knudsen, 2007) – see Figure 3. The area is approximately 4 km wide and 24 km long, and 96 km² in extent. The area is considered to be the economic hub of KwaZulu-Natal, with two oil refineries, a paper and pulp plant, sugar refinery, chemical industries, the busiest port in Africa, and various medium and smaller industries, which contribute significantly to the provincial gross domestic product. The area is a focal point of major transport routes, including the Port of Durban, several railway lines and major highways. The area also contains several residential areas, which are often located near the heavy industries. The incompatibility of these land uses has and continues to create conflict in the area, which is discussed in more detail in Section 7.0.

4.2 Local Study Area

The local study area is defined by the boundaries of the ward within which the Project site is located, namely Ward 32 (see Figure 4). Ward 32 is approximately 2 547 ha in extent, extending from Umbilo in the north, to Montclair and Wentworth in the west, and Grosvenor and Fynnlands in the south. The area is predominantly industrial, except for the Clairwood residential area.
4.3 Project Site

The Project site boundaries are confined to those of the area that is directly controlled by the Applicant, Lanele (Figure 2). The Project site is bounded by railway tracks to the north and west, a canal to the east, and an undeveloped parcel of land to the south. The site is presently undeveloped, and approximately 7 ha in extent.
Figure 3: Boundaries of the regional and local study areas
Figure 4: Boundaries of the local study area and the project site
5.0 METHODOLOGY

In order to gain an understanding of the socio-economic conditions of the regional and local study areas, Golder reviewed available documents, as well as previous studies conducted in the area. The documents reviewed included the following:

- Ethekwini Municipality: Integrated Development Plan (IDP) 2017/2018 to 2021/2022;
- Ethekwini Municipality: Central Spatial Development Plan 2013/2014;
- Ethekwini Municipality: South Durban Basin Multi-Point Plan Study Report (2007);
- South Durban Basin Health Study (2007);
- Back of Port Interface Zone: Situational Analysis (2009);
- Statistics South Africa (Stats SA) Census 2011;
- Statistics South Africa (Stats SA) Census 2001; and

No primary data was collected in preparation of this SIA. The methodology used in the assessment of the socio-economic impacts is detailed below in Section 8.1.
6.0 BASELINE DATA

The section to follow presents a brief overview of the socio-economic conditions within the regional and local study areas.

6.1 Population Size and Density

In 2001, the population of the regional study area was 285 504 (Stats SA, 2001), growing at an average of 1.6% per annum to 329 820 in 2011 (Stats SA, 2011). Assuming the growth rate remains unchanged, the population of the regional study area was estimated to be 375 113 in 2018 – see Figure 5. Using the same approach, the population of the local study area was estimated to be 28 057 in 2018 with an average annual growth rate of 1.7% per annum.

![Figure 5: Population of the regional and local study areas in 2001, 2011 and 2018 (Stats SA, 2001 and Stats SA, 2011)](image)

Based on the 2018 population estimate, the population density of the regional study area was calculated to be 2 842 persons/km², while the population density of the local study area was calculated to be 1 100 persons/km².

Figure 6 presents the population density of the wards which constitute the regional study area, including Ward 32, the local study area. Wards 26, 28 and 68 have the highest population density (6 001 – 7 500 persons/km²), while Ward 32 (in which the project site is located) has the lowest population density (1 000 – 1 500 persons/km²) in the regional study area. This can be expected given that the dominant land uses in the local study area is industrial, with Clairwood being the only residential area.
Figure 6: Population density of wards within the regional study area (adapted from Stats SA, 2011)
6.2 Age, Gender and Population Group

Figure 7 presents the population pyramid or age distribution of both the regional and local study areas (Stats SA, 2011). The length of the bar graph represents the percentage of the total population in each age group. Both the regional and local study areas have a narrow base, which is indicative of a contracting population. This is typically because of a low birth rate, low death rate, and/or longer life expectancy. It can also be seen that a large proportion of the population (69%) in the local study area are between the ages of 15 and 40. This is typical of an industrial area where there is an influx of job seekers from the economically active cohorts into an area.

![Population pyramid of the regional and local study areas](image)

Figure 7: Population pyramid of the regional and local study areas (adapted from Stats SA, 2011)

In both the regional and local study areas, the ratio of females is marginally higher than the males (Stats SA, 2011) - see Figure 8. This is normal and indicates that there are not significant imbalances in the sex ratio in these two areas.

![Ratio of males to females in the regional study area (left) and local study area (right)](image)

Figure 8: Ratio of males to females in the regional study area (left) and local study area (right) (Stats SA, 2011)
The population of both the regional and local study areas is relatively diverse with people from several of South Africa's population groups recorded. Most of the population in the regional study area is Black African (56%), followed by Indian or Asian (19%), White (14%), and Coloured (10%) (Stats SA, 2011) – see Figure 9. Similarly, most of the population in the local study area is Black African (79%), followed by Indian or Asian (12%), White (4%), and Coloured (3%).

Figure 9: Breakdown of the total population of the regional study area (left) and local study area (right) by population group (Stats SA, 2011)

The first language of most of the population in the regional study area is English (43%), followed by IsiZulu (36%), IsiXhosa (6%), and Afrikaans (4%) (Stats SA, 2011) – see Figure 10. Other accounts for the remaining 11% of the population, and includes first language IsiNdebele, Sepedi, Sesotho, Setswana, SiSwati, Tshivenda, and Xitsonga speakers. In the local study area, the first language of most of the population is IsiZulu (43%), followed by English (26%), IsiXhosa (11%), and Afrikaans (1%).

Figure 10: Breakdown of the total population of the regional study area (left) and local study area (right) by first language (Stats SA, 2011)

6.3 Migration

Figure 11 presents a breakdown of the region of birth of the population in the regional study area (Stats SA, 2011). Most of the population (73.8%) were born in KwaZulu-Natal, followed by 7.9% of the population who were born outside of South Africa. Approximately 6.6% of the population were born in the Eastern Cape, 3.2% in Gauteng, and 1% in the Western Cape.
Figure 11: Province of birth of the population in the regional study area (Stats SA, 2011)

Figure 12 presents a breakdown of the region of birth of the population in the local study area (Stats SA, 2011). Most of the population (64.2%) were born in KwaZulu-Natal, followed by 13.1% of the population who were born outside of South Africa. Approximately 12% of the population were born in the Eastern Cape and 1.5% in Gauteng.

Figure 12: Province of birth of the population in the local study area (Stats SA, 2011)
### 6.4 Education

Figure 13 presents a breakdown of the highest level of education attained by people living in the regional and local study areas (Stats SA, 2011). In the regional study area, most of the population have completed Grade 12/Std 10 (30.3%), followed by some form of secondary education (25.8%), with only 14.3% of the population having completed some form of higher education. Approximately 2.3% of the population reported having no schooling. Similarly, in the local study area, most of the population have completed Grade 12/Std 10 (38.3%), followed by some form of secondary education (19.4%), with only 16.9% of the population having completed some form of higher education. Approximately 1.9% of the population reported having no schooling.

**Figure 13: Highest education level attained (Stats SA, 2011)**

There are approximately 123 educational institutions within the regional study area (eThekwini Municipality, 2019a). Table 2 presents a list of the six educational institutions situated within the local study area. The location of the educational institutions within and surrounding the local study area is shown in Figure 14.

**Table 2: List of educational institutions within the local study area (eThekwini Municipality, 2019a)**

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>No.</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Clairwood Boys Primary</td>
<td>4</td>
<td>Ethekwni Lc Johnson College</td>
</tr>
<tr>
<td>2</td>
<td>Clairwood School</td>
<td>5</td>
<td>South Coast Madressa SA Primary</td>
</tr>
<tr>
<td>3</td>
<td>Durban South Primary</td>
<td>6</td>
<td>Christian High School</td>
</tr>
</tbody>
</table>
Figure 14: Educational institutions within and surrounding the local study area (eThekwini Municipality, 2019a)
6.5 Health

There are several hospitals within the regional study area providing healthcare services to the residents of the South Durban Basin – see Table 3. The location of these hospitals is shown in Figure 15. In addition to these hospitals, there are also 20 publicly-managed clinics (12 fixed and eight mobile), two publicly-managed health posts (eThekwini Municipality, 2019b, 2019c and 2019d), and several privately-owned facilities.

The existing health challenges facing the South Durban Basin are detailed in Section 7.0.

Table 3: List of hospitals within the regional study area

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>No.</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Addington Hospital</td>
<td>6</td>
<td>Ekuhleni Hospital</td>
</tr>
<tr>
<td>2</td>
<td>King Edward VIII Hospital</td>
<td>7</td>
<td>Clairwood Hospital</td>
</tr>
<tr>
<td>3</td>
<td>Prince Mshiyeni Memorial Hospital</td>
<td>8</td>
<td>Wentworth Hospital</td>
</tr>
<tr>
<td>4</td>
<td>Kingsway Hospital</td>
<td>9</td>
<td>Ascot Park Hospital</td>
</tr>
<tr>
<td>5</td>
<td>Charles James TB Hospital</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 15: Hospitals within the regional study area (Golder, 2019)
6.6 Economic Activities and Individual Incomes

Figure 16 presents a breakdown of the employment status of the population in the regional and local study areas (Stats SA, 2011). In the regional study area, approximately 36% of the population is employed, while 10% of the population is unemployed and 2% are discouraged work seekers. The remaining population are either not economically active (26%) or their status is not applicable (26%). Similarly, in the local study area, approximately 37% of the population is employed, while 11% of the population is unemployed and 3% are discouraged work seekers. The remaining population are either not economically active (32%) or their status is not applicable (17%).

Figure 16: Breakdown of the employment status of the population in the regional study area (left) and local study area (right) (Stats SA, 2011)

In the regional study area, approximately 29.8% of the population was employed in the formal sector, while only 3.3% of the population was employed in the informal sector, 3.3% in the private household, and 0.9% did not know (Stats SA, 2011) – see Figure 17. Similarly, in the local study area, approximately 25.7% of the population was employed in the formal sector, while only 5.5% of the population was employed in the informal sector, 5.3% in the private household, and 0.9% did not know.

Figure 17: Economic sector (Stats SA, 2011)
Figure 18 presents a breakdown of the individual monthly income of the population in the regional and local study areas (Stats SA, 2011). For the purposes of this SIA, low income is defined as an individual earning between R 1 and R 6 400 per month, middle income as R 6 401 and R 25 600 per month, and high income as more than R 25 601 per month. The majority of the population in the regional study area reported having no income (37.3%), with 31.8% of individuals characterised as low-income earners. Middle and high-income earners only account for 15.4% and 0.7% of the population respectively. In the local study area, most of the individuals are characterised as low-income earners (38.1%), while middle and high-income earners only account for 10.5% and 0.4% of the population respectively. Approximately 35.5% of the population reported having no income.

![Income Breakdown Graphs](image)

Figure 18: Breakdown of individual monthly income in the regional study area (left) and local study area (right) (Stats SA, 2011)

### 6.7 Cultural Heritage

There are several cultural heritage sites within the local study area, including monuments, statues, and museums – see Table 4 (eThekwini Municipality, 2019e). The location of these sites is shown in Figure 19. There is also one cemetery, Flower Road Musjid and Cemetery, within the residential area of Clairwood (eThekwini Municipality, 2019f).

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>No.</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Albert Park</td>
<td>9</td>
<td>Riche's Building</td>
</tr>
<tr>
<td>2</td>
<td>Bartel Arts Trust (Bat Centre)</td>
<td>10</td>
<td>Shree Muruga Kadaval Temple</td>
</tr>
<tr>
<td>3</td>
<td>Bayside Gallery</td>
<td>11</td>
<td>Sirdar Road Temple Compound</td>
</tr>
<tr>
<td>4</td>
<td>Congella Battlefield Monument</td>
<td>12</td>
<td>St Louis's Roman Catholic Church</td>
</tr>
<tr>
<td>5</td>
<td>Dick King Statue</td>
<td>13</td>
<td>Supreme Court</td>
</tr>
<tr>
<td>6</td>
<td>Maritime Museum</td>
<td>14</td>
<td>Umbilo River</td>
</tr>
<tr>
<td>7</td>
<td>Old House Museum</td>
<td>15</td>
<td>The Kwini (lagoon)</td>
</tr>
<tr>
<td>8</td>
<td>Point Yacht Club</td>
<td>16</td>
<td>Vasco da Gama Clock</td>
</tr>
</tbody>
</table>
There are several places of worship within the local study area, including temples, mosques, and churches – see Table 5 (eThekwini Municipality, 2019g). The location of these places is shown in Figure 20.

Table 5: List of cultural heritage sites within the local study area (eThekwini Municipality, 2019g)

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>No.</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Durban Trinity Chapel</td>
<td>10</td>
<td>Rosshurgh Mosque</td>
</tr>
<tr>
<td>2</td>
<td>Deutsche Seemannsmission</td>
<td>11</td>
<td>St Louis's Roman Catholic Church</td>
</tr>
<tr>
<td>3</td>
<td>Shree Muruga Kadaval Temple</td>
<td>12</td>
<td>Durban Central United Church</td>
</tr>
<tr>
<td>4</td>
<td>Sirdar Road Temple Compound</td>
<td>13</td>
<td>Clairwood Temple</td>
</tr>
<tr>
<td>5</td>
<td>Horeb Temple</td>
<td>14</td>
<td>Yuvak Arya - Samaj Temple</td>
</tr>
<tr>
<td>6</td>
<td>MIC Church</td>
<td>15</td>
<td>New Church</td>
</tr>
<tr>
<td>7</td>
<td>Clairwood Mission</td>
<td>16</td>
<td>Apostolic Faith Mission Church</td>
</tr>
<tr>
<td>8</td>
<td>Flower Road Mosque</td>
<td>17</td>
<td>Diakonia Council of Churches</td>
</tr>
<tr>
<td>9</td>
<td>New Apostolic Church</td>
<td>18</td>
<td>Universal Church of the Kingdom of God</td>
</tr>
</tbody>
</table>
Figure 19: Cultural/heritage sites within the local study area (adapted from eThekwini Municipality, 2019a)
Figure 20: Places of worship within the local study area (adapted from eThekwini Municipality, 2019b)
7.0 EXISTING SOCIO-ECONOMIC IMPACTS

The following section presents a summary of the existing socio-economic impacts facing the community living within the regional study area (South Durban Basin), which may be applicable to the assessment of the cumulative impacts. These existing socio-economic impacts were identified through a desktop review of relevant documents listed in Section 5.0.

Environmental Degradation

In the South Durban Basin, the natural resources are under threat from continuous development and pressures (eThekwini Municipality, 2017a). The lack of services, such as water, sanitation, and electricity, in informal areas also puts a strain on the remaining natural resources. As a result, the ability of the natural ecosystems to assimilate pollution is presently being exceeded.

Poor Urban Environmental Quality

Poor urban environmental quality has been identified as a key issue affecting the Central Spatial Region, notably in parts of Pinetown and the South Durban Basin (eThekwini Municipality, 2009). Two of the main underlying causes of the poor environmental quality is the cumulative effects of pollution in certain industrial districts, and poor environmental controls on industrial pollution and emissions.

Deteriorating Air Quality

Communities in the South Durban Basin first began to raise concerns about the deteriorating air quality in the 1960s, intensifying their efforts in the 1980s and 1990s as air quality deteriorated even further (Guastella and Knudsen, 2007). The communities raised concerns about the high pollution levels, odours, chemical leaks, flares, visible emissions and health complaints. In response, the Department of Environmental Affairs Tourism (now known as the Department of Environmental, Forestry and Fisheries) developed the South Durban “Multi-Point Plan” which sought to:

- Provide an improved decision-making structure for air pollution management at local government level
- Reduce air pollution to meet health-based air quality standards
- Improve the quality of life for the local community

While there have been some achievements with the implementation of the Multi-Point Plan, a survey of representatives from government, industry and the local community, highlighted the following outstanding issues:

- No improvement has been noted in terms of visible pollution (i.e. brown haze and poor visibility on bad dispersion days), measured particulate matter, and oxides of nitrogen
- The focus to date has been on the large companies, but there now needs to be a shift to smaller companies
- There are no noticeable odour reductions and no indication of improvements in volatile organic compounds (VOCs) and other chemicals, despite activities to reduce VOC emissions
- Vehicular traffic impacts need to be addressed, with improvements in the rail service to reduce the load
- Need to improve communication with the community, and in terms that people can understand
Health Risks

As part of the South Durban Multi-Point Plan, a Health Risk and Epidemiological Study was undertaken in 2006 by the University of KwaZulu-Natal Centre for Occupational Health and Hygiene and the University of Michigan (Naidoo et al., 2007). The following are some of the key findings of the study:

- Moderate ambient concentrations of NO₂, NO, PM₁₀ and SO₂ were strongly and significantly associated with reduced lung function among children with persistent asthma.

- Modest increases in air pollution adversely affected pulmonary function of susceptible children.

- Attending primary school in South Durban was significantly associated with an increased risk for persistent asthma and for marked airway hyper-reactivity, in comparison to attending a school in the north of Durban.

- Asthma is the most common chronic disease reported amongst children participating in the study. Furthermore, asthma prevalence or prevalence markers are at the high end of the range internationally.

- Adults residing in south Durban were significantly associated with hay fever, and marginally associated with chronic bronchitis, wheezing, shortness of breath, and hypertension.

- Concentrations of VOCs tended to be the highest at the Settlers and Warwick sampling sites, near refineries and traffic, respectively. For example, benzene levels at these sites average 7 – 9 micrograms per metre cubed (μg/m³), compared to noticeably lower levels (2 – 5 μg/m³) at the other sites. Concentrations of toluene, ethylbenzene and xylene were found to be higher at the central and south sites (35 – 39 μg/m³, 9 – 14 μg/m³ and 24 – 43 μg/m³ respectively), while the northern sites had noticeably lower concentrations (7 – 8 μg/m³, 2 μg/m³ and 6 – 7 μg/m³ respectively).

Land Use Conflicts

Within the South Durban Basin, there are highly impacted interfaces between residential and industrial land uses, which is largely as a result of poor planning in the past (eThekwini Municipality, 2009). This has resulted in not only urban blight in these interface areas, but also social and environmental conflicts attributable to the incompatible land uses and negative externalities.

Concentration of Major Hazard Installations

Several Major Hazard Installations (MHI) are located within the South Durban Basin (eThekwini Municipality, 2017b), near each other and the surrounding residential communities. Therefore, an emergency incident occurring at these industries has the potential to spread offsite, potentially impacting not only on surrounding industries, but also nearby communities.

Infrastructure Limitations to Economic Growth

Due to the current capacity constraints at the Port of Durban, there is a need for expansion, which is placing increasing pressure on the back of port area, and the interface between industrial land uses and residential areas (eThekwini Municipality, 2009).

Another challenge in the South Durban Basin is the aging and obsolete industrial infrastructure. This has resulted in the relocation of businesses, mainly the service industry and light manufacturing, away from the aging industrial areas to newly established areas along the north, south and west growth paths. The aging and obsolete industrial infrastructure also poses health and safety risk to the people living and working in South Durban Basin.
Traffic Congestion

The growth of road-based transport, and in particular containers, has resulted in congested transportation routes, and the mixing of industrial and residential traffic (eThekwini Municipality, 2009). This is in part due to the decline in the use of railway over the last 20 years. Furthermore, in many parts of the South Durban Basin, the load bearing capacity of the road infrastructure is being exceeded.

World Class Investment Zones

Historic expenditure in the South Durban Basin has created areas with high levels of servicing, offering industries located in these areas a significant competitive advantage (eThekwini Municipality, 2009). The area also offers several location advantages including:

- Proximity to Africa’s busiest port;
- Proximity to national road, rail and pipeline networks;
- Proximity to financial and commercial services of Durban’s CBD; and
- Many of the industrial areas are contiguous and collectively support a considerable amount of infrastructure.

The Port of Durban also forms part of the Prime Investment Corridor in which the Municipality aims to achieve more intensive uses and a greater density of jobs, trips, residents and investment than anywhere else in the metro (eThekwini Municipality, 2017). As a result, there is likely to be continued investment into the South Durban Basin, now and in the future, further perpetuating the existing social and environmental conflicts.
8.0 ENVIRONMENTAL IMPACT ASSESSMENT

8.1 Methodology for Assessing Impact Significance

The impact assessment was undertaken using a matrix selection process, the most commonly used methodology, for determining the significance of potential environmental impacts/risks. This methodology incorporates two aspects for assessing the potential significance of impacts, namely occurrence and severity, which are further sub-divided as follows (Table 6)

Table 6: Impact assessment factors

<table>
<thead>
<tr>
<th>Occurrence</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probability of occurrence</td>
<td>Duration of occurrence</td>
</tr>
</tbody>
</table>

To assess these factors for each impact, the following four ranking scales are used (Table 7):

Table 7: Impact assessment scoring methodology

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Magnitude</strong></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Very high/unknown</td>
</tr>
<tr>
<td>8</td>
<td>High</td>
</tr>
<tr>
<td>6</td>
<td>Moderate</td>
</tr>
<tr>
<td>4</td>
<td>Low</td>
</tr>
<tr>
<td>2</td>
<td>Minor</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Permanent (Impact continues post-closure)</td>
</tr>
<tr>
<td>4</td>
<td>Long term (Impact ceases after decommissioning and closure)</td>
</tr>
<tr>
<td>3</td>
<td>Medium-term (Impact ceases after the operational phase)</td>
</tr>
<tr>
<td>2</td>
<td>Short-term (Impact ceases after the construction phase)</td>
</tr>
<tr>
<td>1</td>
<td>Immediate</td>
</tr>
<tr>
<td><strong>Scale</strong></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>International</td>
</tr>
<tr>
<td>4</td>
<td>National</td>
</tr>
<tr>
<td>3</td>
<td>Regional</td>
</tr>
<tr>
<td>2</td>
<td>Local</td>
</tr>
<tr>
<td>Value</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------</td>
</tr>
<tr>
<td>1</td>
<td>Site Only</td>
</tr>
<tr>
<td>0</td>
<td>None</td>
</tr>
</tbody>
</table>

**Probability**

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Definite/Unknown (impact will definitely occur)</td>
</tr>
<tr>
<td>4</td>
<td>Highly Probable (most likely, 60% to 90% chance)</td>
</tr>
<tr>
<td>3</td>
<td>Medium Probability (40% to 60% chance)</td>
</tr>
<tr>
<td>2</td>
<td>Low Probability (5% to 40% chance)</td>
</tr>
<tr>
<td>1</td>
<td>Improbable (less than 5% chance)</td>
</tr>
<tr>
<td>0</td>
<td>None</td>
</tr>
</tbody>
</table>

Significance Points = (Magnitude + Duration + Scale) x Probability.

Table 8: Significance of impact based on point allocation

<table>
<thead>
<tr>
<th>Points</th>
<th>Significance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP&gt;60</td>
<td>High environmental significance</td>
<td>An impact which could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.</td>
</tr>
<tr>
<td>SP 30 - 60</td>
<td>Moderate environmental significance</td>
<td>An impact or benefit which is sufficiently important to require management, and which could have an influence on the decision unless it is mitigated.</td>
</tr>
<tr>
<td>SP&lt;30</td>
<td>Low environmental significance</td>
<td>Impacts with little real effect and which will not have an influence on or require modification of the project design.</td>
</tr>
<tr>
<td>+</td>
<td>Positive impact</td>
<td>An impact that is likely to result in positive consequences/effects.</td>
</tr>
</tbody>
</table>

For the methodology outlined above, the following definitions were used:

- **Magnitude** is a measure of the degree of change in a measurement or analysis (e.g., the area of pasture, or the concentration of a metal in water compared to the water quality guideline value for the metal), and is classified as none/negligible, low, moderate or high

- **Scale/Geographic extent** refers to the area that could be affected by the impact and is classified as site, local, regional, national, or international
Duration refers to the length of time over which an environmental impact may occur: i.e. immediate/transient, short-term, medium term, long-term, or permanent

Probability of occurrence is a description of the probability of the impact actually occurring as improbable (less than 5% chance), low probability (5% to 40% chance), medium probability (40% to 60% chance), highly probable (most likely, 60% to 90% chance) or definite (impact will definitely occur).

8.2 Project Phases
The environmental impacts of the proposed Project were assessed for the:

- Construction (including pre-construction) phase;
- Operational phase; and
- Closure (including decommissioning) phase.

8.3 Detailed Description of Potential Impacts During All Phases of the Proposed Project
The following section presents a brief discussion of the potential socio-economic impacts associated with the proposed Project in the construction, operational and closure phases. A summary of these potential impacts is provided in Table 9.

8.3.1 Construction Phase
The following socio-economic impacts may occur during the construction phase:

Local employment opportunities
The construction of the proposed Project will result in the creation of a number of temporary employment opportunities (including on-job training and skills development) during the construction phase (< 500 persons). In the absence of the recommended mitigation measures, the significance of this positive impact is likely to be low, as there is a low probability that people from the local communities will be employed as the preference would be to use skilled and experienced workers from outside the area. However, with the implementation of the recommended mitigation measures contained in Table 10, the significance of this positive impact is likely to be moderate, as there is increased probability that local people will employed for the project.

Local procurement opportunities
The construction of the proposed Project will result in an investment in the local and regional economy through the procurement of local goods and services. While the significance of this positive impact is likely to be moderate with and without mitigation, the implementation of the recommended mitigation measures will increase the probability that the investment in local economy is maximised as much as possible, to the benefit, both directly and indirectly, of the local community.

Site clearance activities
The clearance of vegetation on site will result in exposed surfaces, which may be susceptible to wind erosion. Excessive wind-clown dust and fine particles could pose health risk to surrounding communities. In the absence of mitigation, the significance of this impact is likely to be moderate. This is due to the high magnitude of the impact and high probability of the impact occurring. With the implementation of the recommended mitigation measures, the significance of this impact is likely to be low, largely due to decreased magnitude and probability of the impact occurring.

For more detailed description of this impact, see the Air Quality Impact Assessment Report (Appendix D of the EIA Report).
Construction activities
The construction of the proposed Project will result in noise impacts during the construction phase. Potential noise sources include construction vehicles, construction equipment, construction of buildings, tanks and ancillary infrastructure, and construction workers. In the absence of mitigation, the significance of this impact is likely to be moderate. This is due to the moderate magnitude of the impact and high probability of the impact occurring. With the implementation of the recommended mitigation measures, the significance of this impact is likely to be low, largely due to significantly decreased magnitude and low probability of the impact occurring.

For more detailed description of this impact, see the Noise Impact Assessment Report (Appendix K of the EIA Report).

Construction vehicles
Construction vehicles used on the proposed Project will increase traffic volumes and congestion in the local study area. This is due to existing high levels of traffic congestion near the Project site. As mentioned previously, this is largely due to the growth of road-based transport and the decline in the use of railway over the last 20 years. Furthermore, there is also increased mixing of industrial and residential traffic. In the absence of mitigation, the significance of this impact is likely to be moderate. This is due to the very high magnitude of the impact and moderate probability of the impact occurring. With the implementation of the recommended mitigation measures, the significance of this impact is likely to be low, largely due to decreased magnitude and low probability of the impact occurring.

The increased number of construction vehicles traveling to and from the Project site will also increase the risk of an accident with pedestrians and/or other vehicles, which can potentially result in an injury or even loss of life. This situation is exacerbated by the existing high levels of mixing of industrial and residential traffic in the local study area. In the absence of mitigation, the significance of this impact is likely to be moderate. This is due to the very high magnitude of the impact and high probability of the impact occurring. With the implementation of the recommended mitigation measures, the significance of this impact is likely to be low, largely due to lower probability of the impact occurring. The magnitude of the impact is likely to remain the same even with mitigation.

Workers from outside the area
The construction of fuel storage tanks and associated infrastructure is a highly specialised field, and as such, people from the local area may not have the requisite skills and experience. As a result, specialists from outside the area may need to be recruited for the construction of the proposed Project. This can result in tension, if the local community believe that not enough local people are being given employment opportunities. In extreme cases, this tension can escalate into intimidation of construction workers from outside the area, and even in violence. In the absence of mitigation, the significance of this impact is likely to be high. This is due to the very high magnitude of the impact (e.g. injury or even loss of life) and high probability of the impact occurring. With the implementation of the recommended mitigation measures, the significance of this impact is likely to be moderate, largely due to lower probability of the impact occurring. The magnitude of the impact is likely to remain high even with mitigation.

8.3.2 Operational Phase
This section provides a description of the socio-economic impacts that may occur during the operational phase.

Local employment opportunities
The operation of the proposed Project will result in the creation of a small (< 20) number of permanent employment opportunities (including on-job training and skills development). This will be a positive impact for
the people that are employed through the proposed Project, and the local community. As mentioned previously, unemployment is relatively high in the regional study area (10%) and local study area (11%), and any permanent job opportunities that are created, will contribute positively to the economic upliftment of the local community. With the implementation of the recommended mitigation contained in Table 10, which focus on maximising local employment, the significance of this positive impact will be moderate. In the absence of these mitigation measures, the significance of the impact will be low as there is likely to be limited employment opportunities given to people from the local community.

**Local procurement**

The operation of the proposed Project will result in the continued investment in the local and regional economy through the procurement of local goods and services. This will be a positive impact on the local economy, and small and medium sized local businesses. With the implementation of the recommended mitigation, which focus on maximising local procurement, the significance of this impact will be moderate. In the absence of these mitigation measures, the significance of the impact will be low as there is likely to be limited procurement of local goods and services.

**National economic development**

The operation of the proposed Project will service to some extent the current and future demand for the storage and blending of fuels, contributing to traffic decongestion at Island View Storage (i.e. fewer tankers needing to access the area), and improving the security of supply. This will be a positive impact on both the regional and national economy. The significance of this impact is likely to be moderate due to the duration of the project (20 – 30 years) and the scale of the impact (i.e. national).

**Operation of the proposed facility, including fuel storage and road loading**

The operation of the proposed Project will result in fugitive VOC emissions. With the implementation of the recommended mitigation measures, which focus on minimising fugitive emissions, the significance of impact of fugitive VOC emissions will be moderate. This is largely due to the low magnitude and the limited scale of the impact. For a more detailed description of this impact, see the Air Quality Impact Assessment Report (Appendix D of the EIA Report).

The operation of the proposed Project will also result in noise impacts. If tanker activity is limited during the night time, this impact is likely to be low. For a more detailed description of this impact, see the Noise Impact Assessment Report (Appendix K of the EIA Report).

**Fuel tankers**

Fuel tankers travelling to and from the Project site will contribute to increased traffic volumes and congestion in the local area. With the implementation of the recommended mitigation measures, which focus on controlling the movement of tankers, the significance of this impact will be low. In the absence of the recommended mitigation measures, there is potential for the fuel tankers travelling to and from the Project site to contribute significantly to increased traffic volumes and congestion in the local area, increasing the significance of this impact to moderate. For a more detailed description of this impact, see the Traffic Impact Assessment Report (Appendix L of the EIA Report).

Fuel tankers travelling to and from the Project site may also contribute to increased risk of an accident with other road users, including pedestrians. The significance of this impact is likely to be low with the implementation of the recommended mitigation measures, which focus on controlling the movement of tankers, thereby reducing the probability of an accident occurring.
Leak and/or rupture of the tanks

A leak and/or rupture of the fuel storage tanks poses risk to individuals on site, as well as individuals in the surrounding industrial and residential areas. The risk varies depending on whether the leak and/or rupture results in pool fire, jet fire, flash fire, or an explosion. With the implementation of the recommended mitigation measures, the risk to individuals onsite and offsite is below the threshold, and therefore considered to be ‘tolerable’ or moderate. For more detailed description of this impact, see the MHI Risk Assessment Report (Appendix I of the EIA Report).

A leak and/or rupture of the fuel storage tanks also poses risk to other MHIs near the Project site, and the proposed NOOA Terminal. According to the Major Hazard Installation Risk Assessment Report, the proposed NOOA Terminal is not at risk from a fire and/or an explosion at the Lanele Oil Terminal 1 (Lot 1) project, provided the recommended mitigation measures are implemented.

8.3.3 Closure Phase

This section focuses on describing the socio-economic impacts that may occur during the closure phase.

Local employment opportunities

The closure and decommissioning of the proposed Project will result in the creation of several temporary employment opportunities for people from the local community (including on-job training and skills development). The majority of people employed for the closure and decommissioning phase will be involved in the demolition of the facility. With the implementation of the recommended mitigation measures, the significance of this positive impact is likely to be moderate as there is the increased probability that local people will be employed for the proposed Project.

The closure and decommissioning of the proposed Project will also result in the loss of small number of permanent employment opportunities. The significance of this impact is likely to be low with the implementation of the recommended mitigation measures, which focus on assisting local people find alternative employment in the area.

Decommissioning activities

The decommissioning of the proposed Project will result in dust impacts, which could pose health risk to people living and working near the Project site. With the recommended mitigation measures, the significance of this impact is likely to be low, largely due to decreased magnitude and probability of the impact occurring. For more detailed description of this impact, see the Air Quality Impact Assessment Report (Appendix D of the EIA Report).

8.4 Impact Assessment Summary

All the predicted environmental impacts resulting from the proposed project activities are described in Table 9 along with their significance ratings before and after mitigation.
Table 9: Summary of potential socio-economic impacts

<table>
<thead>
<tr>
<th>Category</th>
<th>Activity</th>
<th>Potential Impact/Risk</th>
<th>Impact Assessment Factors</th>
<th>Probability</th>
<th>Significance without mitigation</th>
<th>Impact Assessment Factors</th>
<th>Probability</th>
<th>Significance with mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction Phase</strong></td>
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</tr>
</tbody>
</table>
| Socio-economic.   | Construction activities.          | Creation of a number of local employment opportunities. | Magnitude: High  
Duration: Short  
Scale: Regional | Low         | Low                   | Magnitude: High  
Duration: Short  
Scale: Regional | Medium       | Moderate               |
| Socio-economic.   | Construction activities.          | Investment into the local economy through purchase of goods and services. | Magnitude: High  
Duration: Short  
Scale: National | Low         | Moderate               | Magnitude: High  
Duration: Short  
Scale: National | Medium       | Moderate               |
| Socio-economic.   | Site clearance activities.        | Exposure to dust and fine particulates with the stripping of vegetation cover. | Magnitude: High  
Duration: Short  
Scale: Local | Definite    | Moderate               | Magnitude: Moderate  
Duration: Short  
Scale: Local | Medium       | Low                    |
| Socio-economic.   | Construction activities.          | Exposure to noise from construction activities. | Magnitude: Moderate  
Duration: Short  
Scale: Local | Definite    | Moderate               | Magnitude: Minor  
Duration: Short  
Scale: Local | Low          | Low                    |
| Socio-economic.   | Construction vehicles.            | Increased traffic volumes | Magnitude: Moderate  
Duration: Short  
Scale: Local | Definite    | Moderate               | Magnitude: Moderate  
Duration: Short  
Scale: Local | Low          | Low                    |
<table>
<thead>
<tr>
<th>Category</th>
<th>Activity</th>
<th>Potential Impact/ Risk</th>
<th>Impact Assessment Factors</th>
<th>Probability</th>
<th>Significance without mitigation</th>
<th>Impact Assessment Factors</th>
<th>Probability</th>
<th>Significance with mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-economic</td>
<td>Construction vehicles</td>
<td>Increase the risk of an accident with pedestrian and/or another vehicle, resulting in a serious injury or death.</td>
<td>Magnitude: Very high, Duration: Immediate, Scale: Local</td>
<td>Highly probable</td>
<td>Moderate</td>
<td>Magnitude: Very high, Duration: Immediate, Scale: Local</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Socio-economic</td>
<td>Workers from outside the area.</td>
<td>Social tension, and possibly violence.</td>
<td>Magnitude: High, Duration: Short, Scale: Regional</td>
<td>Highly probable</td>
<td>Moderate</td>
<td>Magnitude: High, Duration: Short, Scale: Regional</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

**Operational Phase**

<table>
<thead>
<tr>
<th>Category</th>
<th>Activity</th>
<th>Potential Impact/ Risk</th>
<th>Impact Assessment Factors</th>
<th>Probability</th>
<th>Significance without mitigation</th>
<th>Impact Assessment Factors</th>
<th>Probability</th>
<th>Significance with mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-economic</td>
<td>Operational activities.</td>
<td>Creation of a number of local employment opportunities.</td>
<td>Magnitude: Low, Duration: Medium, Scale: Regional</td>
<td>Low</td>
<td>Low</td>
<td>Magnitude: Low, Duration: Medium, Scale: Regional</td>
<td>Medium</td>
<td>Moderate</td>
</tr>
<tr>
<td>Socio-economic</td>
<td>Operational activities.</td>
<td>Investment into the local economy through purchase of goods and services.</td>
<td>Magnitude: Low, Duration: Medium, Scale: Regional</td>
<td>Low</td>
<td>Low</td>
<td>Magnitude: Low, Duration: Medium, Scale: Regional</td>
<td>Medium</td>
<td>Moderate</td>
</tr>
<tr>
<td>Category</td>
<td>Activity</td>
<td>Potential Impact/Risk</td>
<td>Impact Assessment Factors</td>
<td>Probability</td>
<td>Significance without mitigation</td>
<td>Impact Assessment Factors</td>
<td>Probability</td>
<td>Significance with mitigation</td>
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<td>Duration: Medium</td>
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<td>Duration: Medium</td>
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<td></td>
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<td>Scale: National</td>
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<td></td>
<td>Scale: National</td>
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<tr>
<td>Socio-economic.</td>
<td>Storage and handling of liquid fuels.</td>
<td>Fugitive VOC emissions.</td>
<td>Magnitude: n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Magnitude: Minor</td>
<td>Medium</td>
<td>Low</td>
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<td></td>
<td></td>
<td></td>
<td>Duration: n/a</td>
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<td>Duration: Medium</td>
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<td></td>
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<td></td>
<td>Scale: n/a</td>
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<td>Scale: Site only</td>
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<tr>
<td>Socio-economic.</td>
<td>Noise generating operational activities.</td>
<td>Increase in baseline ambient noise levels at sensitive receptors.</td>
<td>Magnitude: Minor</td>
<td>Low</td>
<td>Low</td>
<td>Magnitude: Minor</td>
<td>Improbable</td>
<td>Low</td>
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<td></td>
<td></td>
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<td>Duration: Long</td>
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<td>Duration: Long</td>
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<td></td>
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<td>Scale: Local</td>
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<td>Scale: Local</td>
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<tr>
<td>Socio-economic.</td>
<td>Road tankers travelling to and from the proposed facility.</td>
<td>Increased the risk of an accident with a pedestrian and/or another vehicle, resulting in a serious injury or death.</td>
<td>Magnitude: Very high</td>
<td>Medium</td>
<td>Moderate</td>
<td>Magnitude: High</td>
<td>Low</td>
<td>Low</td>
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<td></td>
<td></td>
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<td>Duration: Medium</td>
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<td>Scale: Local</td>
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<td>Scale: Local</td>
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<tr>
<td>Socio-economic.</td>
<td>Storage and handling of flammable liquids.</td>
<td>Risk to individuals (employees and members of the public) as a result of a</td>
<td>Magnitude: Very high</td>
<td>Medium</td>
<td>Moderate</td>
<td>Magnitude: Very high</td>
<td>Low</td>
<td>Moderate</td>
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<td></td>
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<td>Duration: Medium</td>
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<td>Scale: Regional</td>
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<td>Scale: Local</td>
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<tr>
<td>Category</td>
<td>Activity</td>
<td>Potential Impact/ Risk</td>
<td>Impact Assessment Factors</td>
<td>Probability</td>
<td>Significance without mitigation</td>
<td>Impact Assessment Factors</td>
<td>Probability</td>
<td>Significance with mitigation</td>
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<td></td>
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<td>fire or an explosion.</td>
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<tr>
<td>Socio-economic.</td>
<td>Storage and handling of flammable liquids.</td>
<td>Risk to society as a result of a fire or an explosion.</td>
<td>Magnitude: Very high</td>
<td>Medium</td>
<td>Moderate</td>
<td>Magnitude: Very high</td>
<td>Low</td>
<td>Moderate</td>
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<td></td>
<td></td>
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<td>Duration: Medium</td>
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<td>Scale: Regional</td>
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<td><strong>Closure Phase</strong></td>
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<tr>
<td>Socio-economic.</td>
<td>Demolition activities.</td>
<td>Creation of a number of local employment opportunities.</td>
<td>Magnitude: High</td>
<td>Low</td>
<td>Low</td>
<td>Magnitude: High</td>
<td>Medium</td>
<td>Moderate</td>
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<td></td>
<td></td>
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<td>Duration: Short</td>
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<td>Scale: Regional</td>
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<tr>
<td>Socio-economic.</td>
<td>Decommissioning and closure of the facility.</td>
<td>Loss of permanent employment opportunities.</td>
<td>Magnitude: High</td>
<td>Definite</td>
<td>High</td>
<td>Magnitude: High</td>
<td>Medium</td>
<td>Moderate</td>
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<td>Duration: Short</td>
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<td>Scale: Regional</td>
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<tr>
<td>Socio-economic.</td>
<td>Demolition activities.</td>
<td>Dust and fine particulates affecting ambient air quality.</td>
<td>Magnitude: High</td>
<td>Medium</td>
<td>Moderate</td>
<td>Magnitude: Moderate</td>
<td>Medium</td>
<td>Low</td>
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<td></td>
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<td>Duration: Short term</td>
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<td>Duration: Short term</td>
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<td>Scale: Local</td>
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</tbody>
</table>
9.0 POTENTIAL CUMULATIVE IMPACTS IDENTIFIED

As mentioned previously, there are several existing challenges facing the people living and working in the South Durban Basin. Many of these cumulative impacts have been dealt with in the respective specialist reports. These include:

- Air Quality Impact Assessment Report dealt with the cumulative impact of the project on ambient air quality, as well as the associated health risks;
- Noise Impact Assessment Report dealt with the cumulative impact of the proposed Project on ambient noise levels;
- Traffic Impact Assessment Report dealt with the cumulative impact of the project on existing Level of Service of the road infrastructure, considering the contribution of the NOOA Terminal and the other two bulk liquid fuel storage facilities; and
- Major Hazard Installation Risk Assessment dealt with the risk posed by the Project on the adjacent NOOA Terminal.

10.0 ENVIRONMENTAL MANAGEMENT PROGRAMME

This EMPr addresses the management of potential environmental impacts related to the proposed Lanele Oil Terminal 1 (Lot 1) project. The EMPr is used for managing, mitigating, and monitoring of the environmental impacts associated with the construction, operational and rehabilitation phases of the realigned route.

10.1 Objectives

The key objective of the social management plan is to avoid or to minimise the negative impacts on human health, and the environment because of the proposed Project, and, where possible, to enhance the positive.

10.2 Environmental Management and Mitigation Measures Identified

A summary of the identified mitigation measures is presented in Table 10.
### Table 10: Summary of environmental management and mitigation measures

<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Potential impact/risk</th>
<th>Description</th>
<th>Prescribed standards or practices</th>
<th>Mitigation type</th>
<th>Time period</th>
<th>Responsible person</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.2.1</td>
<td>Construction Phases</td>
<td>Socio-economic.</td>
<td>Creation of a number of local employment opportunities.</td>
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<tr>
<td>10.2.1.1</td>
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<td></td>
<td></td>
<td>■ Obtain skills list from South Durban Basin Area Based Management and/or relevant local development agency;</td>
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<td></td>
<td></td>
<td></td>
<td>■ Set targets for local employment in consultation with South Durban Basin Area Based Management and/or relevant local development agency;</td>
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<td>■ Develop and implement a structured on-site training and skills development programme to develop capacity and skills of all employees, and in particular employees from the local community;</td>
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<td></td>
<td></td>
<td></td>
<td>■ Include local employment targets in contractor agreements; and</td>
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<td></td>
<td></td>
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<td>■ Meet set targets for local employment.</td>
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<td></td>
<td>Agreed target for local employment.</td>
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<td>Enhance.</td>
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<td>Duration of construction phase.</td>
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<td></td>
<td></td>
<td></td>
<td>Project Manager.</td>
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</tr>
<tr>
<td>No.</td>
<td>Category</td>
<td>Potential impact/risk</td>
<td>Description</td>
<td>Prescribed standards or practices</td>
<td>Mitigation type</td>
<td>Time period</td>
<td>Responsible person</td>
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</tr>
</tbody>
</table>
| 10.2.1.2 | Socio-economic.        | Construction activities.                   | ■ Identify services and construction materials that can be procured locally;  
■ Set targets for local procurement in consultation with South Durban Basin Area Based Management and/or relevant local development agency;  
■ Include local procurement targets in contractor agreements; and  
| 10.2.1.3 | Socio-economic          | Site clearance activities                  | ■ Areas that have been stripped of vegetation must be dampened periodically to avoid excessive dust;  
■ Construction site to be screened using wooden supports and shade cloth;  
■ Vehicles travelling around site must adhere to the speed limit of 20km/hr unless specified otherwise to avoid creating excessive dust; and  
National Dust Control Regulations.  
No complaints received about dust. | National Dust Control Regulations. | Minimise.                   | Duration of construction phase.   | ECO and/or SHEQ Manager. |
<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Potential impact/risk</th>
<th>Description</th>
<th>Prescribed standards or practices</th>
<th>Mitigation type</th>
<th>Time period</th>
<th>Responsible person</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fine materials being transported must be covered with tarpaulins or equivalent material.</td>
<td>SANS 10103</td>
<td>Minimise</td>
<td>Duration of construction phase</td>
<td>ECO and/or SHEQ Manager</td>
</tr>
<tr>
<td>10.2.1.4</td>
<td>Socio-economic.</td>
<td>Investment into the local economy through purchase of goods and services.</td>
<td>Construction vehicles are to be fitted with standard silencers prior to the beginning of construction; Equipment that is fitted with noise reduction facilities (e.g. side flaps, silencers etc.) must be used as per operating instructions and maintained properly during site operations; Machinery and vehicles are to be kept in good working order for the duration of the project to minimise noise nuisance to neighbours; and Construction workers must be made aware that they are not to make excessive noise (e.g. shouting / hooting).</td>
<td>No complaints received about noise.</td>
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</tr>
<tr>
<td>10.2.1.5</td>
<td>Socio-economic.</td>
<td>Construction vehicles.</td>
<td>Access routes for construction vehicles to the project site, and haulage routes within the site</td>
<td>No complaints received about construction vehicles.</td>
<td>Minimise</td>
<td>Duration of construction phase</td>
<td>ECO and/or SHEQ Manager</td>
</tr>
<tr>
<td>No.</td>
<td>Category</td>
<td>Potential impact/risk</td>
<td>Description</td>
<td>Prescribed standards or practices</td>
<td>Mitigation type</td>
<td>Time period</td>
<td>Responsible person</td>
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</tbody>
</table>
| 10.2.1.6 | Socio-economic | Construction vehicles | boundaries must be identified and agreed by all parties, including the ECO, at the outset of construction;  
Construction vehicles are not permitted to use residential roads; and  
Vehicles travelling to site must adhere to the speed limit, while vehicles on site must adhere to the speed limit of 20km/hr. | No near misses, injuries or fatalities related to construction vehicles reported. | Minimise. | Duration of construction phase. | ECO and/or SHEQ Manager. |
| 10.2.1.7 | Socio-economic | Social tension, and possibly violence. | See 10.2.1.1.                                                                 |                                    |                  |                                  |                                |

**10.2.2 Operational Phase**

<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Description</th>
<th>Prescribed standards or practices</th>
<th>Mitigation type</th>
<th>Time period</th>
<th>Responsible person</th>
</tr>
</thead>
</table>
| 10.2.2.1 | Socio-economic | Creation of a number of local employment opportunities. | Obtain skills list from South Durban Basin Area Based Management and/or relevant local development agency;  
Set targets for local employment in consultation with South Durban Basin Area Based Management and/or relevant local development agency; | Agreed target for local employment. | Enhance. | Duration of the operational phase. | Operations Manager. |
<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Potential impact/risk</th>
<th>Description</th>
<th>Prescribed standards or practices</th>
<th>Mitigation type</th>
<th>Time period</th>
<th>Responsible person</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>10.2.2.1 Socio-economic.</strong> Investment into the local economy through purchase of goods and services.</td>
<td>Include local employment targets in relevant company policies; and Meet set targets for local employment.</td>
<td>Agreed target for local procurement.</td>
<td>Enhance. Duration of the operational phase.</td>
<td>Operations Manager.</td>
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<td><strong>10.2.2.3 Socio-economic.</strong> Fugitive VOC emissions.</td>
<td>See recommendations in Air Quality Impact Assessment Report (Appendix D of EIA Report)</td>
<td>National Ambient Air Quality Standards No complaints received about air quality.</td>
<td>Minimise. Duration of the operational phase.</td>
<td>ECO and/or SHEQ Manager.</td>
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<tr>
<td>No.</td>
<td>Category</td>
<td>Potential impact/risk</td>
<td>Description</td>
<td>Prescribed standards or practices</td>
<td>Mitigation type</td>
<td>Time period</td>
<td>Responsible person</td>
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</tr>
<tr>
<td>10.2.2.4</td>
<td>Socio-economic.</td>
<td>Increase in baseline ambient noise levels at sensitive receptors.</td>
<td>See recommendations in Noise Impact Assessment Report (Appendix K of EIA Report).</td>
<td>SANS 10103</td>
<td>Minimise.</td>
<td>Duration of the operational phase</td>
<td>ECO and/or SHEQ Manager.</td>
</tr>
</tbody>
</table>
| 10.2.2.5 | Socio-economic.     | Increased the risk of an accident with a pedestrian and/or another vehicle, resulting in a serious injury or death. | ■ Tankers are not permitted to use residential roads;  
■ Tankers are not permitted to cause an obstruction to the free flow of traffic in the area by illegally stopping or parking on roads and/or pavements;  
■ Tankers to be allocated a timeslot in which to collect product from the Project site. No tankers to be permitted access to the site outside of this timeslot; and  
■ Vehicles travelling to the Project site must adhere to the speed limit, while vehicles on site must adhere to the speed limit of 20km/hr. | No complaints received about tankers. | Minimise         | Duration of the operational phase | ECO and/or SHEQ Manager                       |
| 10.2.2.6 | Socio-economic      | Risk to individuals (employees and members of the public) as a result of a fire or an explosion. | No near misses, injuries or fatalities related to tankers reported.                                                                                                                                           | Minimise.                         | Duration of the operational phase | ECO and/or SHEQ Manager                      |
| 10.2.2.7 | Socio-economic      | Risk to society as a result of a fire or an explosion.                                | See Major Hazard Installation Risk Assessment for recommended mitigation measures (Appendix I of EIA Report).                                                                                          | MHI Regulations.                  | Minimise.        | Duration of the operational phase | ECO and/or SHEQ Manager.                          |

### 10.2.3 Closure Phase

- No complaints received about noise.
- Minimise. Duration of the operational phase.
- ECO and/or SHEQ Manager.
<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Potential impact/risk</th>
<th>Description</th>
<th>Prescribed standards or practices</th>
<th>Mitigation type</th>
<th>Time period</th>
<th>Responsible person</th>
</tr>
</thead>
</table>
| 10.2.3.1| Socio-economic. | Creation of a number of local employment opportunities.                                | ■ Obtain skills list from South Durban Basin Area Based Management and/or relevant local development agency;  
■ Set targets for local employment in consultation with South Durban Basin Area Based Management and/or relevant local development agency;  
■ Include local employment targets in relevant company policies; and  
| 10.2.3.2| Socio-economic. | Loss of permanent employment opportunities.                                            | ■ Aid local employees to find alternative employment in the area; and  
■ Provide training opportunities to local employees to improve the likelihood of them finding alternative employment in the area.                    | All local employees find alternative employment in the area.               | Minimise.       | Duration of closure phase. | Project Manager. |
<table>
<thead>
<tr>
<th>No.</th>
<th>Category</th>
<th>Potential impact/risk</th>
<th>Description</th>
</tr>
</thead>
</table>
| 10.2.3.3 | Socio-economic. | Dust and fine particulates affecting ambient air quality. | - Areas that have been cleared must be dampened periodically to avoid excessive dust;  
- Demolition site to be screened using wooden supports and shade cloth;  
- Vehicles travelling around site must adhere to the speed limit of 20km/hr unless specified otherwise to avoid creating excessive dust; and  
- Fine materials being transported must be covered with tarpaulins or equivalent material. |
| | | | Prescribed standards or practices |
| | | | National Dust Control Regulations.  
No complaints received about dust. |
| | | | Mitigation type |
| | | | Minimise. |
| | | | Time period |
| | | | Duration of closure phase. |
| | | | Responsible person |
| | | | ECO and/or SHEQ Manager. |
## 10.3 Mechanisms for Monitoring Compliance

Monitoring and reporting requirements are provided in Table 11.

### Table 11: Monitoring and reporting requirements

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Category</th>
<th>Method for monitoring</th>
<th>Time period</th>
<th>Frequency of monitoring</th>
<th>Mechanism for monitoring compliance</th>
<th>Responsible person</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.3.1.1</td>
<td>Socio-economic</td>
<td>Tracking local employment against agreed to target. Duration of construction phase.</td>
<td>Ongoing.</td>
<td></td>
<td>Monthly internal environmental audit report.</td>
<td>Human Resources Manager</td>
</tr>
<tr>
<td>10.3.1.2</td>
<td>Socio-economic</td>
<td>Tracking local procurement against agreed to target. Duration of construction phase.</td>
<td>Ongoing.</td>
<td></td>
<td>Monthly internal environmental audit report.</td>
<td>Financial Manager.</td>
</tr>
<tr>
<td>10.3.1.3</td>
<td>Air quality.</td>
<td>Dust bucket monitoring at the fence line with a minimum of four buckets. Samples to be sent to an accredited laboratory for analysis. Baseline sample 1 month prior to start of pre-construction activities, and for duration of construction phase.</td>
<td>Monthly.</td>
<td></td>
<td>Monthly internal environmental audit report.</td>
<td>ECO and/or SHEQ Manager.</td>
</tr>
<tr>
<td>10.3.1.4</td>
<td>Air quality.</td>
<td>Monitor complaints register held at security gate or administration office for complaints about dust. Duration of construction phase. As and when required (notified immediately of Complaint and actions taken to address complaint about dust recorded in complaints register.</td>
<td>As and when required (notified immediately of Complaint and actions taken to address complaint about dust recorded in complaints register.</td>
<td></td>
<td>ECO and/or SHEQ Manager.</td>
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<tr>
<td>Ref. No.</td>
<td>Category</td>
<td>Method for monitoring</td>
<td>Time period</td>
<td>Frequency of monitoring</td>
<td>Mechanism for monitoring compliance</td>
<td>Responsible person</td>
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<tr>
<td>10.3.1.5</td>
<td>Noise.</td>
<td>Monitor complaints register held at security gate or administration office for complaints about noise.</td>
<td>Duration of construction phase.</td>
<td>As and when required (notified immediately of complaint being lodged).</td>
<td>Complaint and actions taken to address complaint about noise recorded in complaints register.</td>
<td>ECO and/or SHEQ Manager</td>
</tr>
<tr>
<td>10.3.1.6</td>
<td>Traffic.</td>
<td>Monitor incidents register for records of incidents of near-misses, injuries or death from construction vehicles.</td>
<td>Duration of construction phase.</td>
<td>As and when required (notified immediately of incident involving construction vehicle being lodged).</td>
<td>Monthly internal environmental audit report.</td>
<td>ECO and/or SHEQ Manager</td>
</tr>
<tr>
<td>10.3.1.7</td>
<td>Traffic.</td>
<td>Monitor complaints register held at security gate or administration office for complaints about construction vehicles.</td>
<td>Duration of construction phase.</td>
<td>As and when required (notified immediately of complaint being lodged).</td>
<td>Complaint and actions taken to address complaint about construction vehicles recorded in complaints register.</td>
<td>ECO and/or SHEQ Manager</td>
</tr>
</tbody>
</table>

**10.3.2 Operational Phase**
<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Category</th>
<th>Method for monitoring</th>
<th>Time period</th>
<th>Frequency of monitoring</th>
<th>Mechanism for monitoring compliance</th>
<th>Responsible person</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.3.2.1</td>
<td>Socio-economic.</td>
<td>Tracking local employment against agreed to target.</td>
<td>Duration of operational phase.</td>
<td>Ongoing.</td>
<td>Monthly internal SHEQ report.</td>
<td>Human Resources Manager.</td>
</tr>
<tr>
<td>10.3.2.2</td>
<td>Socio-economic.</td>
<td>Tracking local procurement against agreed to target.</td>
<td>Duration of operational phase.</td>
<td>Ongoing.</td>
<td>Monthly internal SHEQ report.</td>
<td>Financial Manager</td>
</tr>
<tr>
<td>10.3.2.4</td>
<td>Traffic.</td>
<td>Monitor incidents register for records of incidents of near-misses, injuries or death from road tankers.</td>
<td>Duration of operational phase.</td>
<td>As and when required (notified immediately of incident involving road tanker being lodged).</td>
<td>Monthly SHEQ report.</td>
<td>SHEQ Manager.</td>
</tr>
<tr>
<td>10.3.2.5</td>
<td>Traffic.</td>
<td>Monitor complaints register held at security gate or administration office for complaints about road tankers.</td>
<td>Duration of operational phase.</td>
<td>As and when required (notified immediately of complaint being lodged).</td>
<td>Monthly SHEQ report.</td>
<td>SHEQ Manager.</td>
</tr>
</tbody>
</table>

**10.3.3 Closure Phase**

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Category</th>
<th>Method for monitoring</th>
<th>Time period</th>
<th>Frequency of monitoring</th>
<th>Mechanism for monitoring compliance</th>
<th>Responsible person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ref. No.</td>
<td>Category</td>
<td>Method for monitoring</td>
<td>Time period</td>
<td>Frequency of monitoring</td>
<td>Mechanism for monitoring compliance</td>
<td>Responsible person</td>
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</tr>
<tr>
<td>10.3.3.2</td>
<td>Air quality.</td>
<td>Dust bucket monitoring at the fence line with a minimum of four buckets. Samples to be sent to an accredited laboratory for analysis.</td>
<td>Duration of closure phase.</td>
<td>Monthly.</td>
<td>Monthly internal environmental audit report.</td>
<td>ECO and/or SHEQ Manager.</td>
</tr>
<tr>
<td>10.3.3.3</td>
<td>Air quality.</td>
<td>Monitor complaints register held at security gate or administration office for complaints about dust.</td>
<td>Duration of closure phase.</td>
<td>As and when required (notified immediately of complaint being lodged).</td>
<td>Complaint and actions taken to address complaint about dust recorded in complaints register.</td>
<td>ECO and/or SHEQ Manager.</td>
</tr>
<tr>
<td>10.3.3.4</td>
<td>Noise.</td>
<td>Monitor complaints register held at security gate or administration office for complaints about noise.</td>
<td>Duration of closure phase.</td>
<td>As and when required (notified immediately of complaint being lodged).</td>
<td>Complaint and actions taken to address complaint about noise recorded in complaints register.</td>
<td>ECO and/or SHEQ Manager.</td>
</tr>
<tr>
<td>10.3.3.5</td>
<td>Traffic.</td>
<td>Monitor incidents register for records of incidents of near-misses, injuries or death from demolition vehicles.</td>
<td>Duration of closure phase.</td>
<td>As and when required (notified immediately of incident involving demolition vehicle being lodged).</td>
<td>Monthly internal environmental audit report.</td>
<td>ECO and/or SHEQ Manager.</td>
</tr>
<tr>
<td>Ref. No.</td>
<td>Category</td>
<td>Method for monitoring</td>
<td>Time period</td>
<td>Frequency of monitoring</td>
<td>Mechanism for monitoring compliance</td>
<td>Responsible person</td>
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<tr>
<td>10.3.3.6</td>
<td>Traffic.</td>
<td>Monitor complaints register held at security gate or administration office for complaints about demolition vehicles.</td>
<td>Duration of closure phase.</td>
<td>As and when required (notified immediately of complaint being lodged).</td>
<td>Complaint and actions taken to address complaint about demolition vehicles recorded in complaints register.</td>
<td>ECO and/or SHEQ Manager.</td>
</tr>
</tbody>
</table>
11.0 DATA GAPS AND ASSESSMENT SHORTCOMINGS

- The absence of up-to-date census data on the local population. The last comprehensive census was undertaken in 2011 and the next one is only scheduled for 2021. While census data used is not up-to-date, it does provide sufficient detail to establish a baseline that is relatively accurate in terms of orders of magnitude and allows for the establishment of trends; and

- The absence of a comprehensive, up-to-date database of educational facilities, health care facilities, places of worship, and cultural historical sites. While not every facility or site may have been accounted for, the data does provide sufficient detail to determine quantity, in terms of order of magnitude, and the relative distribution of the facilities and/or sites within the regional study area.
12.0 CONCLUSION

The population of the regional study area in 2018 was estimated to be 375,113 with an annual growth rate of 1.6%, while the population of the local study area was estimated to be 28,057 in 2018 with an average annual growth rate of 1.7%. The population density of the regional study area was higher with 2,842 persons/km², compared to the local study area with 1,100 persons/km². Both the regional and local study areas have contracting populations, with most of the population between the ages of 15 and 40.

There are marginally more females than males in both the regional and local study areas, with Black Africans being the largest population group, followed by Indians/Asians, Whites, and Coloureds. Most of the population living in the regional and local study areas were born in KwaZulu-Natal. In terms of education, most of the population in regional and local study areas have completed Grade 12/Std. 10 or some form of secondary education. Only 14.3% of the population in the regional and 16.9% of the population in the local study area have completed some form of higher education.

In the regional study area, approximately 36% of the population is employed, while 10% of the population is unemployed and 2% are discouraged work seekers. Similarly, in the local study area, approximately 37% of the population is employed, while 11% of the population is unemployed and 3% are discouraged work seekers. The remaining population are either not economically active or their status is not applicable. Most of the employed population are working in the formal sector, with only a small percentage reporting working in the informal sector.

There are several education and health facilities, cultural/heritage sites, and places of worship in the residential areas surrounding the Project site.

Based on a review of relevant documentation, there are several existing socio-economic impacts affecting communities in the South Durban Basin. This includes environmental degradation, poor urban environmental quality, deteriorating air quality and associated health risk, land use conflicts, concentration of MHIs, infrastructure limitations to growth, and traffic congestion.

During the construction phase, and with the implementation of the recommended mitigation measures, the proposed Project will result in several positive impacts, including local job opportunities (moderate) and local procurement (moderate). The proposed Project will also result in several negative impacts, including dust impacts (low), noise impacts (low), traffic congestion (low), increased risk to pedestrians and other vehicles on the road (low), and social tension with the use of workers from outside the area (moderate).

During the operational phase, and with the implementation of the recommended mitigation measures, the proposed Project will result in several positive impacts, including local job opportunities (moderate), local procurement (moderate), and national economic development (moderate). The proposed Project will, however, result in a number of negative impacts, including fugitive VOC emissions (moderate), noise impacts (low), traffic congestion (low), increased risk to pedestrians and other vehicles on the road (low), and the risk to individuals on site, people in the surrounding industrial and residential areas, and other MHIs with a tank leak or rupture (low).

While the closure and decommissioning of the proposed Project will create a number of temporary employment opportunities (moderate), it will also result in the loss of a number of permanent employment opportunities (low) and dust impacts (low).

With the implementation of the recommended mitigation measures, the potential socio-economic impacts of the proposed Project can to a large extent be mitigated. Therefore, it is highly unlikely that there will be any residual socio-economic impacts of high or very high significance. Furthermore, with the implementation of the recommended mitigation measures, the positive benefits can be further enhanced.
It is the opinion of this specialist that the proposed Project should be authorised, subject to the implementation of the recommended mitigation measures and mechanisms for monitoring compliance.
13.0 SPECIALISTS

This SIA report was prepared by Michael Van Niekerk, and the report reviewed by Antoinette Pietersen, of Golder. The details of the specialist’ qualifications and experience are provided in Table 12 below:

Table 12: Qualifications and experience of the specialists

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Qualifications and Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental practitioner</td>
<td>Michael Van Niekerk</td>
<td>• MSc Geography and Environmental Management;</td>
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<tr>
<td></td>
<td></td>
<td>• Member International Association for Impact Assessment South Africa (IAIAsa); and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Michael has over 10 years’ experience in environmental impact assessment.</td>
</tr>
<tr>
<td>Social Management Services</td>
<td>Antoinette Pietersen</td>
<td>• BA (Hons) Psychology;</td>
</tr>
<tr>
<td>Group Lead</td>
<td></td>
<td>• Member of International Association for Public Participation (IAP2); and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Antoinette has more than 20 years’ experience in stakeholder engagement and social impact assessment.</td>
</tr>
</tbody>
</table>

Neither Golder nor the specialists that prepared this report has any vested interest in the proposed Lanele Oil Terminal 1 (Lot 1) project other than fair remuneration for professional services rendered. The findings presented in this specialist report are those of the specialists, without influence from any other parties.
14.0 REFERENCES


Signature Page

Golder Associates Africa (Pty) Ltd.

Michael Van Niekerk
Environmental Scientist

Antoinette Pietersen
Public Participation Manager

MVN/AP/

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APPENDIX A

Specialist CVs
Midrand

*Environmental Assessment Practitioner*

Michael is an Environmental Assessment Practitioner in the Mine Environment Division of Golder Associates Africa. He generally specialises in field of strategic environmental planning, as well as integrated environmental management, particularly ESIAs / EIAs, BAs, and ESMPs / EMPrs, environmental auditing, and WML, Amendment and S24G applications.

In the last 10 years he has however developed skills and expertise in a number of related fields. This includes ecosystem services assessments, climate change and energy efficiency, greenhouse gas assessments, and sustainable waste management.

His clients have ranged from small residential developers to large-multinational organisations, including local and provincial government. Michael's work has also ranged from small housing developments, to fuel filling stations, wastewater treatment works, liquid fuel storage terminals, fertiliser plants, and iron ore, coal, copper and gold mines. He has also authored and co-authored a number of guideline documents mainly focussed on energy efficiency.

Michael has environmental project experience in South Africa, Kenya, Ethiopia, Uganda, Mali, Democratic Republic of Congo, Ghana, Lesotho and Norway.

**Employment History**

*FutureWorks – Kloof*

*Senior Environmental Consultant (2008 to 2015)*

Michael joined FutureWorks in 2008 after completing his MSc at the University of KwaZulu-Natal. During his 6 years at FutureWorks, Michael worked on a number of EIAs, BAs, WMLs, S24G applications, and amendment applications, strategic planning projects (e.g. EMFs, SDFs and LAPs), and ecosystem services assessments.
PROJECT EXPERIENCE – ENVIRONMENTAL ASSESSMENT

ESIA - OCP Ammonia and Fertiliser Plant
Dire Dawa, Ethiopia
For the proposed development of an Ammonia, Fertiliser and Urea Plant in Dire Dawa, as well as 30 km water pipeline and 50 km gas pipeline.

ESIA - Metalkol Roan Tailings Reclamation Project
Kolwezi, Democratic Republic of Congo
For the reclamation of copper and cobalt from the Kingamyambo and Musonoi/Kasobantu tailings dams, near the town of Kolwezi.

ESIA - Tulu Kapi Gold Mine Phase 2
West Wollega Zone, Ethiopia
For the proposed development of gold mine and associated infrastructure, including a processing plant, in the Tulu Kapi region of Ethiopia. This included updating the ESIA and ESMP as part of the DSF.

ESIA - Delonex 2D Seismic Survey
Abred-Ferfer region, Ethiopia
For the proposed 2D seismic survey of Blocks 18, 19 and 21 in the Abred-Ferfer region of Ethiopia.

ESIA - Vopak-Reatile Fuel Storage Facility
Richards Bay, KwaZulu-Natal, South Africa
For the proposed development of 300,000 litre fuel storage facility in the Port of Richards Bay on the KwaZulu-Natal north coast.

ESIA - Jindal Iron Ore Mine and Processing Plant
Melmoth, KwaZulu-Natal, South Africa
For the proposed development of an iron ore mine and associated infrastructure, as well as processing plant, in the Melmoth region of KwaZulu-Natal. Two separate EIA applications are being undertaken in parallel for the mine and the processing plant.

Basic Assessment - Expansion of Natal Solvents Recovery Facility
eThekwini Municipality, KwaZulu-Natal, South Africa
For the proposed expansion of the existing Natal Solvents Recovery Facility, to increase throughput capacity, on-site storage, and introduce new waste stream. The Project included three applications; amendment of the existing WML, registration of storage of hazardous waste on-site, and application for WML for proposed expansion of the existing facility.

EMP - Richards Bay Minerals
Richards Bay, KwaZulu-Natal, South Africa
Amendment of and consolidation of RBM's Environmental Management Plan. This included a gap analysis, amendment of the EMP, and consolidation of the existing EMP and previous Amendments.

PROJECT EXPERIENCE – ENVIRONMENTAL CONTROL OFFICER

Vopak-Reatile Terminal Lesedi
Heidelberg, South Africa
Undertake quarterly audits during the construction phase of the Vopak-Reatile Fuel Storage Terminal Lesedi
Curriculum Vitae

MICHAEL VAN NIEKERK

Fischer Rd WWTW, Hillcrest
eThekwini Municipality, KwaZulu-Natal, South Africa

Independent ECO during expansion of Fischer Rd WWTW in Hillcrest.

Cotswold Energy Centre, Hillcrest.
eThekwini Municipality, KwaZulu-Natal, South Africa

Independent ECO during construction phase of Cotswold Energy centre, a fuel filling station on Inanda Road in Hillcrest.

Langford Country Estate, Hillcrest
eThekwini Municipality, KwaZulu-Natal, South Africa

Independent ECO during expansion of Langford Country Estate's WWTW in Hillcrest.

Ingane Yami Children's Village, Stockville
eThekwini Municipality, KwaZulu-Natal, South Africa

Independent Environmental Control Officer during construction and operational phases of Ingane Yami Children's Village, an orphanage for 100+ children situated in Stockville valley.

101 Acutts, Hillcrest
eThekwini Municipality, KwaZulu-Natal, South Africa

Independent ECO during construction phase of 101 Acutts, a residential estate comprising 135 freehold properties, situated in Hillcrest.

PROJECT EXPERIENCE – ENVIRONMENTAL MANAGEMENT

Project Manager's Guide to Managing EIA Processes
eThekwini Municipality, KwaZulu-Natal, South Africa

Co-authored guideline document entitled "Municipal Project Manager's Handbook: Managing Environmental Impact Assessment Processes", to assist municipal officials in managing EIA processes more effectively. This included a revision of the guideline with change in EIA Regulations in 2010.

PROJECT EXPERIENCE – WASTE

South Africa State of Waste Report South Africa

Snapshot of the current quantities of general and hazardous waste generated in South Africa, and the management thereof.

Kamoto Copper Company Waste Management Plan Kolwezi, Democratic Republic of Congo

Compile an up-to-date inventory of general and hazardous wastes (excl. mining wastes), and development of a five-year strategy and action plan for the management of these waste streams.

Hazardous Waste Management Assessment of Uganda Uganda

Assessment of Uganda's capacity to transport, store and treat / dispose of hazardous waste produced by the oil and gas industry.
# Curriculum Vitae

**MICHAEL VAN NIEKERK**

## Feasibility Assessment of Alternative Waste Treatment Technologies in the City of Tshwane, Gauteng, South Africa

A detailed assessment of the feasibility of alternative waste treatment technologies in the City of Tshwane. This included numerous technologies such as source-separation, composting, material recovery facilities, anaerobic digesters, landfilling and incineration.

## PROJECT EXPERIENCE – ECOSYSTEM SERVICES ASSESSMENTS

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mayoko Iron Ore Project</strong>&lt;br&gt;Mayoko, Republic of Congo</td>
<td>Ecosystem services supply and demand assessment for Exxaro's Mayoko Iron Ore Project in Republic of Congo.</td>
</tr>
<tr>
<td><strong>Kamoa Copper Project</strong>&lt;br&gt;Kamoa, Democratic Republic of Congo</td>
<td>Ecosystem services supply and demand assessment for Ivanhoe's Kamoa Copper Project in DRC.</td>
</tr>
<tr>
<td><strong>Nimba Mountain Iron Ore Mine</strong>&lt;br&gt;Nimba, Guinea</td>
<td>Ecosystem services supply and demand assessment for BHP Billiton's Nimba Mountain Iron Ore Mine in Guinea.</td>
</tr>
<tr>
<td><strong>Kwale Mineral Sands Mine</strong>&lt;br&gt;Kwale, Kenya</td>
<td>Ecosystem services supply and demand assessment as part of the ESIA for Base Titanium's Kwale Mineral Sands Mine in Kenya.</td>
</tr>
<tr>
<td><strong>Tenke &amp; Kisanfu Projects</strong>&lt;br&gt;Tenke, Democratic Republic of Congo</td>
<td>Ecosystem services supply and demand assessment as part of the ESIA for Freeport-McMoRan's Tenke &amp; Kisanfu Projects in DRC.</td>
</tr>
<tr>
<td><strong>New Vaal Interim Closure Plan</strong>&lt;br&gt;Sasolburg, Free State, South Africa</td>
<td>An economic analysis of alternative land use options, from an ecosystem services perspective, for Anglo American's New Vaal Interim Closure Plan.</td>
</tr>
<tr>
<td><strong>Lake Nhlabane Sustainability Report</strong>&lt;br&gt;Umhlatuzan Municipality, KwaZulu-Natal, South Africa</td>
<td>Ecosystem services supply and demand assessment for RMB's Lake Nhlabane Sustainability Report. The purpose of this project was to assess the risk to ecosystem services with range of different land use and management scenarios.</td>
</tr>
<tr>
<td><strong>Elders Colliery</strong>&lt;br&gt;Mpumalanga, South Africa</td>
<td>Ecosystem services supply and demand assessment as part of the ESIA for Anglo American's Elders Colliery in Mpumalanga.</td>
</tr>
<tr>
<td><strong>Zulti South Project</strong>&lt;br&gt;Umhlatuzan Municipality, KwaZulu-Natal, South Africa</td>
<td>Ecosystem services supply and demand assessment as part of the ESIA for RBM's Zulti South Mineral Sands Project in Richards Bay.</td>
</tr>
<tr>
<td><strong>Knysna Estuary and Catchment</strong>&lt;br&gt;Knysna, Western Cape, South Africa</td>
<td>Ecosystem services supply and demand assessment for Knysna Estuary and Catchment, Knysna. The purpose of this project, which was funded by SANParks, was to build local government, and key stakeholder, capacity on ecosystem services.</td>
</tr>
<tr>
<td>Project</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Zonnebloem Coal Mine</td>
<td>Ecosystem services supply and demand assessment as part of the EIA for Xstrata's Zonnebloem Coal Mine in Mpumalanga.</td>
</tr>
<tr>
<td>Kriel Life Expansion Project</td>
<td>Ecosystem services supply and demand assessment as part of the ESIA for Anglo American's Kriel Coal Mine Life Expansion Project in Mpumalanga.</td>
</tr>
<tr>
<td>Thabametsi Project</td>
<td>Ecosystem services supply and demand assessment as part of the ESIA for Exxaro's Thabametsi Coal Mine Project in Limpopo.</td>
</tr>
<tr>
<td>Mondi's Iswepe Forests</td>
<td>Ecosystem services supply and demand assessment for Mondi's Iswepe Forests in Mpumalanga. The purpose of this assessment was to build capacity of staff around ecosystem services.</td>
</tr>
<tr>
<td>Kokstad Integrated Sustainable Development Plan</td>
<td>Ecosystem services supply and demand assessment for the Kokstad Integrated Sustainable Development Plan.</td>
</tr>
<tr>
<td>Biophysical Assessment of Umbilo and Umhlangane Catchments</td>
<td>Ecosystem services supply and demand assessment for Umbilo and Umhlangane Catchments. The purpose of this project was to pilot an approach to determining the safe operating space for these catchments from an ecosystem services perspective.</td>
</tr>
<tr>
<td>Mafube Life Expansion Project</td>
<td>Ecosystem services supply and demand assessment as part of the ESIA for Anglo Coal's Mafube Life Expansion Project in Mpumalanga.</td>
</tr>
<tr>
<td>Sappi's Forestry Estates in KwaZulu-Natal and Mpumalanga</td>
<td>Ecosystem services supply and demand assessment for Sappi's Forestry Estates in KwaZulu-Natal and Mpumalanga. The outcomes of this assessment were used in Sappi's Sustainability Report.</td>
</tr>
<tr>
<td>Sappi's Clairmont Estate</td>
<td>Ecosystem services supply and demand assessment for Sappi Forestry's Clairmont Estate near Bulwer. The outcomes of this assessment were used to inform future management of the Estate.</td>
</tr>
<tr>
<td>Phase 2 of Sani Pass Upgrade</td>
<td>Ecosystem services supply and demand assessment as part of the ESIA for KZN Department of Transport's Phase 2 of Sani Pass Upgrade.</td>
</tr>
<tr>
<td>Risk Assessment for Hawaan Forest, Durban</td>
<td>Assess the risk to ecosystem services with a range of management scenarios for the Hawaan Forest for Tongaat Hullet.</td>
</tr>
</tbody>
</table>
Curriculum Vitae

MICHAEL VAN NIEKERK

Ezemvelo KZN Wildlife
Protected Area’s Ecosystem Services Assessment
KwaZulu-Natal, South Africa

Assess the supply and estimate the value of ecosystem services generated by selected Ezemvelo KZN Wildlife’s Protected Area. The outcomes of this study were used by EKZNW to lobby for continued funding of these protected areas.

Baviaanskloof Payment for Ecosystem Services Assessment
Eastern Cape, South Africa

Feasibility assessment for implementation of Payment for Ecosystem Services in Baviaanskloof.

Phongola River Ecosystem Services and Poverty Alleviation Project
Jozini Municipality, KwaZulu-Natal, South Africa

Estimate the economic value of selected industries, namely tourism and agriculture that are highly dependent on ecosystem services supplied by Phongola River as part of the Phongola River Ecosystem Services and Poverty Alleviation Project.

WRC Umngeni Catchment Project, KwaZulu-Natal, South Africa

Ecosystem services supply and demand assessment for the WRC Umngeni Catchment Project, KwaZulu-Natal.

PROJECT EXPERIENCE – ENVIRONMENTAL MANAGEMENT

Project Manager’s Guide to Managing EIA Processes
eThekwini Municipality, KwaZulu-Natal, South Africa

Co-authored guideline document entitled "Municipal Project Manager’s Handbook: Managing Environmental Impact Assessment Processes", to assist municipal officials in managing EIA processes more effectively. This included a revision of the guideline with change in EIA Regulations in 2010.

TRAINING

Carbon Footprint Analyst Course
Terra Firma Academy, 2018

Programme in Project Management
USB-ED University of Stellenbosch Business School, 2011

Training Course on Real World EIA
Vicki King of Metamorphosis Environmental, 2008

SUPPLEMENTAL SKILLS

Basic Fire Fighter
F2 Fire Fighting Course
PROFESSIONAL AFFILIATIONS

Member of International Association for Impact Assessment South Africa (IAIAsa)

PUBLICATIONS

Web Documents


Golder Associates Africa (Pty.) Ltd. – Johannesburg

Stakeholder Engagement Lead / Trainer
Toni has nearly 20 years’ experience in designing, facilitating and managing stakeholder engagement processes ranging from information sharing to collaboration with stakeholders. Her experience encompass providing strategic advice to clients on a suite of communication, engagement and surveying tools, of which key areas include managing stakeholder expectations, early identification of social risk and providing strategies for the management of outrage. Her experience cross-cuts a number of industrial disciplines and includes working on projects within the mining, industrial, oil and gas, water, power generation/energy/renewable energy, environmental, property development, funding agencies, waste management, infrastructure and government/institutional sectors. Toni is an expert facilitator and she thrives in challenging environments, often where public emotion and outrage have to be managed. As discipline leader, Toni excels when working in a team of highly competent and technically skilled specialists. Toni is a seasoned trainer in stakeholder engagement and conflict management. She is one of a panel of postgraduate lecturers in social impact assessment, stakeholder engagement and beneficiary assessment at the University of Johannesburg.

Employment History

Golder Associates Africa – Midrand, Johannesburg, South Africa
Stakeholder Engagement Lead / Trainer (2010 to Present)
Responsible for business development within the social sciences discipline. Manages a team of social sciences experts and ensures technical excellence and quality of project deliverables. Assists clients to secure their social licence to operate within the context of challenging social environments. Leads the design, management and facilitation of integrated social assessments in the mining, industrial, oil and gas, manufacturing, water and waste, and power generation/renewable energy industries. Presents Africancentric course in stakeholder engagement, social impact assessment and conflict management.

Ferret Mining and Environmental Services (Pty) Ltd (FERRET) – Pretoria, South Africa
Specialist Public Participation Practitioner / Trainer (2008 to 2010)
Provided strategic advice to clients with regards to public participation / communication relevant to applicable legislation. Established a fully functional public participation / communication unit within FERRET. Designed public participation processes. Managed and co-ordinated all public participation/communication projects. Facilitated public events. Compiled and edited public documents. Presented the international certificate course in public participation training. Designed tailor-made training courses, including for relevant educational institutions in South Africa. Client care / relationships. Quality control and review of documents / public participation processes. Also responsible for marketing, proposals/tender compilation and research with regards to public participation.

Strategic Environmental Focus (SEF) – Pretoria, South Africa
Resumé

ANTOINETTE (TONI) PIETERSEN

Unit Manager: Environmental Services Division (2007 to 2008)
Management and co-ordination of the Environmental Services Division (ESD) of which the Communication and Training Unit forms part. Allocation of new projects; tenders and proposals to staff. Management of the ESD, including Human Resources; financial data; debtor- and creditor control; recruitment; performance management; change management; client relationships. Strategic guidance on projects, tenders and proposals. Quality control and review of documents. Training on public participation. Marketing both the company’s services and products.

Strategic Environmental Focus (SEF) – Pretoria, South Africa
Unit Manager: Communication and Training (2006 to 2007)
Management and co-ordination of the Communication and Training Unit. Co-ordination and facilitation of public participation processes, as required in terms of the ECA, NEMA (as amended), MPRDA and International Best Practice Principles, including the compilation of proceedings and correspondence with I&APs. Training and awareness raising on public participation. Marketing both the company’s services and products. Client care and project proposals and tenders.

Golder Associates Africa – Midrand, Johannesburg, South Africa
Leader: Communication Discipline, Environmental and Social Division and Project Manager: Public Participation and other projects (2005 to 2006)
Managed all aspects related to the Communication Discipline, including divisional business plan, marketing strategy and implementation of divisional and personal balanced scorecards. Acted as line manager for a group of staff and mentored staff in public participation practices, project management and event coordination. Managed multi-party, multi-sectoral and multi-country public participation and other projects. Presented and co-presented public participation training courses.

Golder Associates Africa – Midrand, Johannesburg, South Africa
Operations Manager: Public Participation Division and Project Manager: public participation and other projects (2002 to 2005)
Managed the operation of the Public Participation Division aimed at financial monitoring, systems implementation, human resource management and career planning, monitoring line management issues, budgeting of time and capital, resourcing and implementation of divisional business plan and marketing strategy. Managed multi-party, multi-sectoral and multi-country public participation and other projects. Co-presented public participation training courses.

Wates, Meiring and Barnard – Midrand, Johannesburg, South Africa
Project Manager: Public Participation (2001 to 2002)
L&W Environmental merged with Wates, Meiring and Barnard. Toni continued to manage multi-party, multi-sectoral and multi-country public participation and other projects. Advised clients on stakeholder involvement during public participation processes and provided objective evaluation of outcome of processes for future reference.

L&W Environmental (Pty) Ltd – Midrand, Johannesburg, South Africa
Project Manager: Public Participation (2000 to 2001)
Managed and coordinated public participation, communication and awareness creation projects for several Environmental Management Programme Reports and Environmental Impact Assessment processes. Coordinated numerous workshops, public meetings, forum meetings and other events, focusing on a wide range of topics (industrial development, mine closure, mining expansions, environmental issues, natural resource management, water management and others). Compiled and edited discussion documents, newsletters and fact sheets for several industrial projects and water-related initiatives. Summarized technical reports for presentation to stakeholders. Recorded and compiled proceedings of workshops and conferences.

**BKS Consulting Engineers – Pretoria, South Africa**  
*Project Manager / Assistant (1999 to 2000)*  
Responsible for management, compilation and administration of budgets and liaison components of several multi-million rand projects relating to water engineering and responsible for the production of several reports during project implementation.

**Manyaka Greyling Meiring (Pty) Ltd – Pretoria, South Africa**  
*Project Manager / Assistant (1996 to 1999)*  
Assisted in the development of communication strategies for various awareness creation and public participation projects; coordinated the entire production cycle of various publications respectively aimed at sustainability, sound environmental practices, health, safety, water quality management and many more for different sectors of society; managed multi-project schedules, budgets and implementation of tasks throughout South Africa, including media campaigns and produced evaluation reports of communication awareness campaigns and public participation processes.

**Department of Water Affairs and Forestry – Pretoria, South Africa**  
*Communications Officer (1995 to 1996)*  
When employed by the Department of Water Affairs and Forestry Toni was the Editor of the Department’s internal and external newsletters, responsible for media liaison, including preparation of media releases and radio interviews and, event coordination, including press conferences, ministerial functions, etc. She also convened and participated in many radio and media interviews on behalf of the Department.

**ABSA Bank – Centurion, Pretoria, South Africa**  
*Information Officer (1993 to 1995)*  
Responsible for client liaison, information research and assistance to clients with investments.
PROJECT EXPERIENCE – TRAINING

New African Power
Gauteng, South Africa
Provided individual training to a newly appointed Community Liaison Project Officer of New African Power on practical aspects of stakeholder engagement, social impact assessment, evaluation and monitoring and administrative systems management.

Konkola Copper Mines plc (Vendanta)
Konkola, Zambia
Delivered the internationally certified IAP2 courses: Foundations (five days) and Strategies to deal with outrage in public participation (two days) to senior management delegates representing various departments at Konkola Copper Mines (KCM) in 2017. Developed tailor-made case studies to suit the context of the mine and address issues that the mine is facing.

Shell South Africa
Cape Town, South Africa
Conducted a two-day internationally certified course in managing stakeholder emotion and outrage to senior Shell personnel.

University of Johannesburg
Gauteng, South Africa
Conduct annual training on stakeholder engagement and beneficiary assessment, project management principles for social assessments, identification of impacts when undertaking social impact assessments and the differences between Social Impact Assessment and Stakeholder Engagement to the post-graduates doing their Masters in Social Impact Assessment. Marking of assignment essays.

Platreef Resources and Ivanhoe Platinum
Limpopo Province, South Africa
Convened a two-day capacity building programme, focussed on practical application of communication tools in every-day situations. The session was attended by the Platreef Community Liaison Officers and members from Head Office. The capacity building programme was done after attendees completed the internationally certified course in the Foundations of Public Participation.

DMC Iron Congo SA (Exxaro Resources)
Pointe Noire, Republic of Congo
Conducted multi-lingual training (French and English) of the International Certificate Course in Public Participation with customised case studies for Exxaro Mayoko Iron Ore project. Participants included members from intermediate and senior management level as well as Community Liaison Officers. Course participants attended from the Republic of Congo and South Africa.

Platreef Resources and Ivanhoe
Limpopo Province, South Africa
Conducted training of the International Certificate Course in Public Participation with customised case studies for Platreef Resources', Community Liaison Officers, Sub-consultants and HR Staff Members. Also co-presented the IAP2 Decision-makers Course to Ivanhoe Senior Management.

Bayer Environmental Science
Entabeni Game Lodge, South Africa
Conducted training of the international certificate course in public participation with customised case studies for Bayer Environmental Science. Bayer was represented by participants from the USA, Europe, Australasia, India and Africa.

Nelson Mandela Metropolitan Municipality
Eastern Cape Province, South Africa
Conducting training of the international certificate course in public participation for the Nelson Mandela Metropolitan Municipality.

University of Pretoria
Pretoria, South Africa
Conducted training for post-graduates at the University of Pretoria on the application of public participation as a tool in strategic integrated environmental assessment, November 2010.
Resumé

ANTOINETTE (TONI) PIETERSEN

**Department of Environmental Affairs**  
Country wide, South Africa

Conducted training in public participation and evaluation of public participation processes as part of EIAs for more than 300 Government officials at the Department of Environmental Affairs on national and provincial levels between November 2009 and February 2010.

**Various Clients**  
Country wide, Global, Global

Conducts on an ongoing basis the IAP2 international certificate training course on public participation as follows: Planning for Effective Public Participation (two-day course); Effective Communication for Public Participation (one-day course) and Techniques for Effective Public Participation (two-day course).

**Strategic Environmental Focus**  
Pretoria, South Africa

Conducted training: Strategic Environmental Focus workshop on Public Participation Logistics Management and Communication.

**IQPC**  
Johannesburg, South Africa

Conducted training: IQPC workshop on Public Participation Best Practice Principles.

**Golder Associates**  
Midrand, South Africa

Conducted training: Golder workshop on Public Participation Logistics Management.

**SADC**  
Windhoek, Namibia

Co-trained a two-day pilot workshop on Public Participation in Environmental Impact Assessment in the Southern African Development Community (SADC) Region in Namibia. The workshop was attended by 27 selected candidates from the SADC Region (SAIEA).

**West Africa**  
Accra, Ghana

Delivered the international certificate course in public participation in Accra, Ghana to representatives of various mining houses (Newmont Gold, Golden Star).

**PROJECT EXPERIENCE – COMMUNICATION AND AWARENESS CREATION**

Communication and awareness creation projects include projects involving public disclosure on sensitive matters, the development of public sensitivity programs, risk communication and general awareness creation programs that include event coordination, media management and liaison, coordination of conferences/symposia, workshops and programs to sensitize society about a particular topic.

**Central Rand Gold**  
Johannesburg, South Africa

Strategic advice and development of a Risk Communication Plan for Central Rand Gold South Africa.

**Investec Bank**  
Huddle Park, South Africa

Project Manager for developing a Risk Communication Plan for Investec Bank’s high-profile golf estate development.

**Department of Public Works**  
Edenvale, Johannesburg, South Africa

Project Manager/Risk Communication Advisor for the Department of Public Works for a public sensitivity analysis of a proposed health precinct in Edenvale, Johannesburg.

**BHP Billiton**  
Middelburg, South Africa

Project Assistant towards developing a public disclosure plan for BHP Billiton’s Tubatse Ferrochrome in Middelburg on a sensitive matter (BHP Billiton).
**Resumé**

<table>
<thead>
<tr>
<th>Antoinette (Toni) PieterSEN</th>
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</table>

| **Sappi Enstra** | Project Assistant towards developing a public disclosure plan for Sappi Enstra, Springs on a sensitive matter (Sappi). |
| **Park Hyatt Hotel** | Project Manager for the national launch of the production of an HIV/AIDS Toolkit for the mining industry at the Park Hyatt Hotel, Rosebank, including arranging national media coverage (International Finance Corporation). |
| **Department of Water Affairs and Forestry** | Project Assistant to the country-wide Working for Water Program (Department of Water Affairs and Forestry). |
| **Department of Water Affairs and Forestry** | Project Manager for awareness creation for National Water Week (Department of Water Affairs and Forestry). |
| **Department of Land Affairs** | Project Manager for the national media campaign for the Department of Land Affairs on land restitution matters (Department of Land Affairs). |
| **World Health Organisation** | Project Manager for a national Environment Day Poster schools competition (World Health Organisation). |
| **Department of Water Affairs and Forestry** | Project Manager of the Jukskei Eco-Monitoring schools competition, awareness creation and the publication of a competition booklet (Department of Water Affairs and Forestry). |

**PROJECT EXPERIENCE – WATER RESOURCES**

| **Department of Water and Sanitation** | Stakeholder engagement process lead for the project to develop an Integrated Water Quality Management Plan for the Olifants River. The project spanned the Gauteng, Mpumalanga and Limpopo Provinces. |
| **Worley-Parsons** | Public Participation Manager for the Vaal-Gamagara Pipeline Groundwater Assessment in the Northern Cape. |
| **Department of Water Affairs and Forestry** | Public Participation Manager for the development of Water Use License Applications for clients in the mining and industrial sectors. |
| **Department of Water Affairs and Forestry** | Public Participation Manager for the development of a national guideline on dolomitic aquifers (Department of Water Affairs and Forestry). |
| **Department of Water Affairs and Forestry** | Public Participation Manager/Communication Advisor for the development of an Integrated Water Resources Management Plan for the Kgalagadi District, Kuruman, Northern Cape (Department of Water Affairs and Forestry). |
| **Department of Water Affairs and Forestry** | Public Participation Manager/Communication Advisor for the Department of Water Affairs and Forestry’s cross-provincial Olifants River Water Resources Development Project’s Environmental Impact Assessment (Department of Water Affairs and Forestry). |
Resumé

ANTOINETTE (TONI) PIETERSEN

**Department of Water Affairs and Forestry**
Country wide, South Africa

Public Participation Manager for the national public consultation process in the establishment of a First Edition National Water Resource Strategy (NWRS), (Department of Water Affairs and Forestry).

**SAPPi**
Stanger, KwaZulu-Natal, South Africa


**SAPPi**
Mandeni, KwaZulu-Natal, South Africa


**eMalahleni Municipality**
eMalahleni, South Africa

Public Participation Manager for the upgrade of four different sewerage treatment plants in eMalahleni, Mpumalanga (eMalahleni Municipality).

**PROJECT EXPERIENCE – MINING & INDUSTRY**

**Seriti Coal**
Free State, South Africa

Stakeholder engagement and social impact assessment task lead for the proposed new underground coal mine for Seriti Coal near Sasolburg.

**Sasol Mozambique**
Sofala, Inhambane, Maputo, Mozambique

Stakeholder engagement task lead responsible for the planning and implementation of the stakeholder engagement process towards regulatory authorisation for seismic activities in Block 16 and 19 spanning the Sofala and Inhambane Provinces. The project complies with local regulatory and IFC PS requirements.

**LAPSSET**
Turkana, Samburu, Isiolo, Meru, Lamu, Garissa and Nairobi, Kenya

Provision of support from the Golder Africa office to execute the stakeholder engagement process. Support included team training in Nairobi, support with the development of visual project materials, development of key messages during the baseline and impact assessment phases of the ESIA, planning of stakeholder meeting schedules, coordinating support to field teams from the anchor office in SA, review of documents, including Stakeholder Engagement Plan, Stakeholder Engagement Report, Comment and Response Report.

**CNOOC**
Uganda

Social and stakeholder engagement lead overseeing the social impact assessment and stakeholder engagement process for the ESIA update process.

**Eurasian Resource Group (Pty) Ltd**
Katanga, DRC

Social assessment and stakeholder engagement reviewer of two projects carried out to local regulatory requirements and the IFC PSs, namely Metalkol and Comide.

**De Beers Consolidated**
North West, South Africa

Stakeholder Engagement Task Leader and facilitator for six prospecting right applications in different study areas in the North-West Province.

**Newmont Gold**
Ghana

Stakeholder consultation towards the development of the social impact assessment and development of an Influx Management Plan for the proposed new Ahafo South gold mine.

**Newmont Gold**
Ghana

Develop a strategic stakeholder engagement strategy for Newmont Ghana’s Akyem Mining operations in support of the groundwater study undertaken by Golder.
<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africary</td>
<td>Free State, South Africa</td>
<td>Develop a strategic stakeholder engagement strategy for Newmont Ghana’s Akyem Mining operations in support of the groundwater study undertaken by Golder. Stakeholder Engagement Task Leader for the update of the EIA for an underground coal gasification process near Theunissen in the Free State.</td>
</tr>
<tr>
<td>NCP Chlorchem</td>
<td>Gauteng, South Africa</td>
<td>Public Participation Manager for NCP Chlorchem’s project to apply for Section 24G Rectification for an unlawful activity. Public Participation Manager for NCP Chlorchem’s basic environmental assessment for Phase 2 of the expansion project to increase the production of chlorine. Public Participation Manager/Communication advisor of the proposed Effluent Treatment Infrastructure EIA for NCP Chlorchem, Chloorkop near Kempton Park.</td>
</tr>
<tr>
<td>Exxaro Arnot Coal Mine</td>
<td>Mpumalanga, South Africa</td>
<td>Stakeholder Engagement Task Lead for various projects: the development of a consolidated EMP for Exxaro’s Arnot Coal Mine operations near Middelburg, Mpumalanga; EIA and amendment to the EMPR for the expansion of the coal mine; application for a Water Use Licence.</td>
</tr>
<tr>
<td>Richards Bay Minerals</td>
<td>KwaZulu-Natal, South Africa</td>
<td>Stakeholder Engagement Task Lead for the EIA for Richards Bay Minerals’ proposed tailings treatment plant tails disposal project.</td>
</tr>
<tr>
<td>Shell Exploration Company B.V.</td>
<td>Western, Northern and Eastern Cape, South Africa</td>
<td>Stakeholder Engagement Task Lead for the development of three gas exploration licence applications in the South Western Karoo Basin spanning the Western, Northern and Eastern Cape provinces for Shell Exploration Company B.V.</td>
</tr>
<tr>
<td>Aquarius Mine</td>
<td>Rustenburg, South Africa</td>
<td>Stakeholder Engagement Task Leader for the EIA for proposed expansion of the Aquarius Mine, near Rustenburg.</td>
</tr>
<tr>
<td>Zululand Anthracite Colliery</td>
<td>KwaZulu-Natal (Zululand), South Africa</td>
<td>Stakeholder Engagement Task Leader for the Basic Assessment for the proposed expansion of an open cast coal mine.</td>
</tr>
<tr>
<td>Ivanhoe Platinum - Kamoa Copper Mine</td>
<td>Katanga Province, DRC</td>
<td>Stakeholder Engagement Task Leader: providing strategic guidance and advice in terms of local regulatory requirements and IFC Performance Standards; Conceptualisation and development of community consultation materials; Leading capacity building process. Facilitate integration between various specialists' disciplines.</td>
</tr>
<tr>
<td>Mayoko Iron Ore Mine (Exxaro Resources)</td>
<td>Niari Department, Republic of Congo</td>
<td>Stakeholder Engagement Task Leader: providing strategic guidance and advice in terms of local regulatory requirements and IFC Performance Standards; Conceptualisation and development of community consultation materials; Leading capacity building process. Facilitate integration between various specialists' disciplines. Also responsible for Indigenous People Consultation as per IFC Performance Standards.</td>
</tr>
</tbody>
</table>
**Resumé**

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<thead>
<tr>
<th>Company/Project</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SacOil Malawi</td>
<td>Stakeholder Engagement Task Leader for the prospecting right application for petroleum in the North of the country. Working to Malawian environmental regulatory requirements. Responsible for consultation with the relevant authorities, spheres of government, traditional authorities and stakeholders in the Northern Region of the country in partnership with in-country consultants.</td>
</tr>
<tr>
<td>Shell Exploration Company B.V. Western, Northern &amp; Eastern Cape Provinces, South Africa</td>
<td>Stakeholder Engagement Task Lead for the development of three gas exploration licence applications in the South Western Karoo Basin spanning the Western, Northern and Eastern Cape provinces for Shell Exploration Company B.V.</td>
</tr>
<tr>
<td>Mayoko Iron Ore Mine Niari Department, Democratic Republic of Congo</td>
<td>Stakeholder Engagement Task Leader: providing strategic guidance and advice in terms of local regulatory requirements and IFC Performance Standards; Conceptualisation and development of community consultation materials; Leading capacity building process. Facilitate integration between various specialists' disciplines. Also responsible for Indigenous People Consultation as per IFC Performance Standards.</td>
</tr>
<tr>
<td>Kamoa Copper Mine Katanga Province, Democratic Republic of Congo</td>
<td>Stakeholder Engagement Task Leader: providing strategic guidance and advice in terms of local regulatory requirements and IFC Performance Standards; Conceptualisation and development of community consultation materials; Leading capacity building process. Facilitate integration between various specialists' disciplines.</td>
</tr>
<tr>
<td>Zululand Anthracite Colliery Zululand, South Africa</td>
<td>Stakeholder Engagement Task Leader for the Basic Assessment for the proposed expansion of an open cast coal mine.</td>
</tr>
<tr>
<td>Aquarius Mine Rustenburg, South Africa</td>
<td>Stakeholder Engagement Task Leader for the EIA for proposed expansion of the Aquarius Mine, near Rustenburg.</td>
</tr>
<tr>
<td>Richards Bay Minerals Richards Bay, South Africa</td>
<td>Stakeholder Engagement Task Lead for the EIA for Richards Bay Minerals’ proposed tailings treatment plant tails disposal project.</td>
</tr>
<tr>
<td>Exxaro, Arnot Coal Mine Middelburg, Mpumalanga, South Africa</td>
<td>Stakeholder Engagement Task Lead for the development of a consolidated EMP for Exxaro’s Arnot Coal Mine operations near Middelburg, Mpumalanga.</td>
</tr>
</tbody>
</table>
Resumé

ANTOINETTE (TONI) PIETERSEN

**Exxaro, Arnot Coal Mine**
Mooifontein, Mpumalanga, South Africa

Stakeholder Engagement Task Lead for the development of an EIA and EMP Amendment for Exxaro Arnot Coal's expansion of coal mine activities on the farm Mooifontein in Mpumalanga.

**NCP Chlorchem**
Chloorkop, South Africa

Public Participation Manager for NCP Chlorchem's project to apply for Section 24G Rectification for an unlawful activity.

**NCP Chlorchem**
Chloorkop, South Africa

Public Participation Manager for NCP Chlorchem's basic environmental assessment for Phase 2 of the expansion project to increase the production of chlorine.

**NCP Chlorchem**
Chloorkop, South Africa

Public Participation Manager/Communication advisor of the proposed Effluent Treatment Infrastructure EIA for NCP Chlorchem, Chloorkop near Kempton Park.

**Central Rand Gold South Africa (Pty) Ltd**
Central Rand, Johannesburg, South Africa

Public Participation Manager/Communication Advisor for the Mining Right Application process for the proposed mining of gold in the Central Rand, Johannesburg, for Central Rand Gold South Africa (Pty) Ltd.

**Huddle Park Residential Golf Estate**
Linksfield, Johannesburg, South Africa

Public Participation Manager/ Communication advisor for the Huddle Park Residential Golf Estate project in Linksfield, Johannesburg.

**Eskom**
Mpumalanga, South Africa

Provided strategic guidance/advice to several linear projects for Eskom (Eskom Komati Water Augmentation Scheme; Eskom Hendrina Power Station; Eskom Tabor-Witkop Transmission Lines; Eskom Tabor-Spencer Transmission Lines).

Public Participation Manager for a variety of BAs for the industrial and development sectors.

**Afrisam**
Roodepoort, Gauteng, South Africa

Public Participation Manager for Afrisam’s proposed new clinker mill and cement blending facility in Roodepoort, Gauteng (Afrisam).

**Anglo Coal**
Heidelberg, Gauteng, South Africa

Public Participation Manager for Anglo Coal’s proposed new open cast coal mine near Heidelberg, Gauteng (Anglo Coal).

**Sappi**
Ngodwana, Nelspruit, South Africa

Public Participation Manager for the establishment of an Environmental Liaison Committee for Sappi, Ngodwana, Nelspruit (Sappi).

**Anglo Coal’s Maccavueli West Mine**
Maccavueli West, South Africa

Public Participation Manager for the development of an Addendum to an EMP for Anglo Coal’s Maccavueli West mine to expand its mining operation (Anglo Coal).

**South African National Roads - N17**
Gauteng & Mpumalanga Provinces, South Africa

Public Participation Manager/Communication Advisor for the EIA for the proposed upgrade, rehabilitation and construction of new sections of N17 traversing the Gauteng & Mpumalanga Provinces (South African National Roads).
### PROJECT EXPERIENCE – PUBLICATIONS

**Western Cape Department of Environment, Agriculture, Development and Planning**  
Cape Town, South Africa  

**Training**  
Reviewed the development of EIA Regulations training for the Western Cape Department of Environment, Agriculture, Development and Planning and acted as editor of the training material.

**Southern African Institute for Environmental Assessment (SAIEA)**  
Windhoek, Namibia  

**Championed**  
Championed the development and compilation of a training workbook for participants as well as a train-the-trainer manual on Public Participation in Environmental Impact Assessment in the Southern African Development Community (SADC) Region as part of SAIEA’s Calabash project (Southern African Institute for Environmental Assessment (SAIEA), Windhoek, Namibia).

**Compiled various training courses on logistical management, public participation best practice principles; event coordination; conveying technical information to lay people.**

**Department of Water Affairs and Forestry**  
Pretoria, South Africa  

**NATURAL RESOURCES**  

**Sasol Coal**  
Secunda, South Africa  

**Project Manager/Editor for the production of the first Safety, Health and Environment Report for Sasol Coal, Secunda.**

**Department of Water Affairs and Forestry**  
Pretoria, South Africa  

**Project Manager/Editor for the production of the water quality guideline for domestic purposes as a joint effort by the Departments of Water Affairs and Forestry, Health and the Water Research Commission.**

**International Finance Corporation**  
Cape Town, South Africa  

**Acted as head scribe at a two-day international workshop to review the International Finance Corporation’s safeguard policies.**

**Mozal Aluminium Smelter**  
Mozaal, Mozambique  

**Acted as head scribe at a one-day multi-stakeholder public meeting, presented in Portuguese and simultaneously translated into English to provide stakeholders with feedback on progress and environmental management at the Mozal Aluminium Smelter, Mozambique (Mozaal).**
TRAINING

Writing

Basic Public Relations
Public Relations Institute of South Africa (PRISA), 1995

Project Management
Golder Associates Africa, 2005

Effective Techniques for Public Participation
International Association for Public Participation, 2003

Effective Communications for Public Participation
International Association for Public Participation, 2003

Effective Planning for Public Participation
International Association for Public Participation, 2003

Train-the-Trainer: International Certificate Course on Public Participation
International Association for Public Participation, 2006

Facilitation
International Association for Public Participation, 2009

Emotion, Outrage and Public Participation
International Association for Public Participation, 2010

Elected to become a trainer for the Emotion, Outrage and Public Participation Course
International Association for Public Participation, 2010

SUPPLEMENTAL SKILLS

Development of Social and Labour Plans
According to the Minerals and Petroleum Resources Development Act (Act No 28 of 2002), mining houses wishing to obtain a Mining Right must also submit to the Department of Mineral Resources a Social and Labour Plan. This plan must indicate how the mining house will conduct its business in a sustainable manner with regards to employment, skills development, recruitment of employees, retrenchment procedures and upliftment of the local communities that are, or will be impacted. The Social and Labour Plan (S&LP) must also indicate the financial resources that will be invested to contribute to the social upliftment of the environment where it will operate.

Determination of the Human Reserve
The Human Reserve is determined as part of the Reserve Determination process as required by the National Water Act (Act 36 of 1998).

PROFESSIONAL AFFILIATIONS

International Association for Public Participation (IAP2)
International Association for Impact Assessment South Africa (IAIAsa)
APPENDIX B

Specialist Declarations
# DETAIL OF SPECIALIST AND DECLARATION OF INTEREST

**File Reference Number:**

**NEAS Reference Number:**

**Date Received:**

Application for an environmental authorisation in terms of section 24(2) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) or for a waste management licence in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

## PROJECT TITLE

Application for EA, AEL and GA for the proposed Lanele Oil Terminal 1 (Lot 1) Project at Ambrose Park, in Bayhead, Durban

<table>
<thead>
<tr>
<th>Specialist:</th>
<th>Michael Van Niekerk (Golder Associates Africa (Pty) Ltd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact person:</td>
<td>Michael Van Niekerk</td>
</tr>
<tr>
<td>Postal address:</td>
<td>P.O. Box 6001, Halfway House</td>
</tr>
<tr>
<td>Postal code:</td>
<td>1685</td>
</tr>
<tr>
<td>Telephone:</td>
<td>011 254 4800</td>
</tr>
<tr>
<td>Cell:</td>
<td>078 388 6311</td>
</tr>
<tr>
<td>Fax:</td>
<td></td>
</tr>
<tr>
<td>E-mail:</td>
<td><a href="mailto:MicVanNiekerk@golder.co.za">MicVanNiekerk@golder.co.za</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Consultant:</th>
<th>Golder Associates Africa (Pty) Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact person:</td>
<td>Natalie Kohler</td>
</tr>
<tr>
<td>Postal address:</td>
<td>P.O. Box 6001, Halfway House</td>
</tr>
<tr>
<td>Postal code:</td>
<td>1685</td>
</tr>
<tr>
<td>Telephone:</td>
<td>011 254 4800</td>
</tr>
<tr>
<td>Cell:</td>
<td>079 316 0920</td>
</tr>
<tr>
<td>Fax:</td>
<td></td>
</tr>
<tr>
<td>E-mail:</td>
<td><a href="mailto:NKohler@golder.co.za">NKohler@golder.co.za</a></td>
</tr>
</tbody>
</table>
4.2 The specialist appointed in terms of the Regulations_

I, Michael Van Niekerk, declare that --

General declaration:

- I act as the independent specialist in this application;
- do not have and will not have any vested interest (either business, financial, personal or other) in the undertaking of the proposed activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I am aware that a person is guilty of an offence in terms of Regulation 48 (1) of the EIA Regulations, 2014, if that person provides incorrect or misleading information. A person who is convicted of an offence in terms of sub-regulation 48(1) (a)-(e) is liable to the penalties as contemplated in section 49B(1) of the National Environmental Management Act, 1998 (Act 107 of 1998).

Signature of the specialist:

Golder Associates Africa (Pty) Ltd

Name of company (if applicable):

10 September 2019

Date:
DETAILS OF SPECIALIST AND DECLARATION OF INTEREST

File Reference Number: 
NEAS Reference Number: 
Date Received: 

(For official use only)
DC/

Application for an environmental authorisation in terms of section 24(2) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) or for a waste management licence in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008).

PROJECT TITLE
Application for EA, AEL and GA for the proposed Lanele Oil Terminal 1 (Lot 1) Project at Ambrose Park, in Bayhead, Durban

Specialist: Antoinette Pietersen (Golder Associates Africa (Pty) Ltd) 
Contact person: Antoinette Pietersen 
Postal address: P.O. Box 6001, Halfway House 
Postal code: 1685 
Telephone: 011 254 4800 
Cell: 078 388 6311 
Fax: 
E-mail: apietersen@golder.co.za 
Professional affiliation(s) (if any): 

Project Consultant: Golder Associates Africa (Pty) Ltd 
Contact person: Natalie Kohler 
Postal address: P.O. Box 6001, Halfway House 
Postal code: 1685 
Telephone: 011 254 4800 
Cell: 079 316 0920 
Fax: 
E-mail: NKohler@golder.co.za
Specialist Declaration

4.2 The specialist appointed in terms of the Regulations.

I, Antoinette Pietersen, declare that --

General declaration:

- I act as the independent specialist in this application;
- I do not have and will not have any vested interest (either business, financial, personal or other) in the undertaking of the proposed activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I am aware that a person is guilty of an offence in terms of Regulation 48 (1) of the EIA Regulations, 2014, if that person provides incorrect or misleading information. A person who is convicted of an offence in terms of sub-regulation 48(1) (a)-(e) is liable to the penalties as contemplated in section 49B (1) of the National Environmental Management Act, 1998 (Act 107 of 1998).

Signature of the specialist:

Golder Associates Africa (Pty) Ltd

Name of company (if applicable):

10 September 2019

Date: