

## **SHIELD CHEMICALS (PTY) LTD**

### **NEMA BASIC ASSESSMENT PROCESS**

ESTABLISHMENT OF EIGHT (8) 33M<sup>3</sup> TANKS WITH ALCOHOL,  
BENZINE AND KEROSENE RESPECTIVELY ON ERVEN 265 &  
266 APEX X4, CORNER LONDON AND ANTWERP STREETS,  
BENONI, CITY OF EKURHULENI, GAUTENG PROVINCE

**JULY 2023**

**DRAFT**

**REFERENCE: GAUT 002/23-24/E3661**



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### **Appendix A: EAP**

- Curriculum vitae: Ms Paulette Jacobs
- Qualification & Professional affiliations (SACNASP, EAPASA, WISA, IAIAsa)

### **Appendix B: Applicant & property information**

- Applicant information
  - CIPC: Shield Chemicals (Pty) Ltd
  - Identity document: Jayson Clark
- Property information
  - Property ownership
  - Lease agreement

### **Appendix C: Photographs**

### **Appendix D: Site Development Plan (SDP)**

### **Appendix E: Public participation**

- Newspaper notice
- Email notification
- I&APs details (confidential) – only provided to authority
- Comments & responses

### **Appendix F: Specialist**

- Biodiversity
- Palaeontology
- Heritage

## LIST OF ACRONYMS AND ABBREVIATIONS AND DEFINITIONS

<b>AIS</b>	Alien and Invasive Species
<b>Biodiversity</b>	Diversity of genes, species and ecosystem on earth, and the ecological and evolutionary processes that maintain this diversity.
<b>BPG</b>	Best Practice Guidelines
<b>CARA</b>	Conservation of Agriculture Resources Act, 1983 (Act 43 of 1983)
<b>CBA</b>	Critical Biodiversity Area (terrestrial and aquatic areas required to meet biodiversity targets for ecosystems, species or ecological processes, as identified in a systematic biodiversity plan)
<b>CBD</b>	Central Business District (centre of a town/city)
<b>COE</b>	City of Ekurhuleni
<b>C-Plan</b>	2011 Gauteng Conservation Plan 3.3
<b>CRSA</b>	Constitution of the Republic of South Africa, 1996 (Act 108 of 1996) – Section 24 relates to environment
<b>CSIR</b>	Council for Scientific and Industrial Research
<b>DFFE</b>	Department of Forestry, Fisheries and the Environment (national authority responsible for environmental protection and implementation of NEMA)
<b>DOL</b>	Department of Labour
<b>DTI</b>	Department of Trade and Industry
<b>DWS</b>	Department of Water and Sanitation (national authority responsible for water protection and implementation of NWA, custodian of South Africa's water resources)
<b>EAP</b>	Environmental Assessment Practitioner (independent consultant administering NEMA processes on behalf of applicant)
<b>EAPASA</b>	Environmental Assessment Practitioner Association of South Africa
<b>ECA</b>	Environment Conservation Act, 1989 (Act 73 of 1989) – preceded NEMA
<b>ECO</b>	Environmental Control Officer
<b>EIA</b>	Environmental Impact Assessment (process required in terms of NEMA to obtain authorisation for listed activities)
<b>EMF</b>	Environmental Management Framework
<b>EMP</b>	Environmental Management Programme/Plan
<b>EMS</b>	Emergency Management Services
<b>EO</b>	Environmental Officer

<b>ERAP</b>	Emergency Response Action Plan
<b>ESA</b>	Ecological Support Area (terrestrial and aquatic areas that are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of one or more Critical Biodiversity Areas; or in delivering ecosystem services.
<b>GDARD</b>	Gauteng Department of Agriculture & Rural Development
<b>GIS</b>	Geographic Information System
<b>GNR</b>	Government Notice Regulation (notices published in Government Gazette in terms of already promulgated laws, legislated by government)
<b>GNR 324</b>	Amendment of GNR 985 - Listing 3 deals with activities requiring environmental authorisation due to sensitive locations (preceded by GNR 546 of 2010)
<b>GNR 325</b>	Amendment of GNR 984 - Listing 2 deals with activities requiring environmental authorisation due to expected higher environmental impact – requires full EIA (scoping and EIA) (preceded by GNR 545 of 2010 and GNR 387 of 2006)
<b>GNR 326</b>	Amendment of GNR 982 - EIA regulations – procedures / requirements
<b>GNR 327</b>	Amendment of GNR 983 - Listing 1 deals with activities requiring environmental authorisation due to expected lower environmental impact – requires Basic Assessment only (preceded by GNR 544 of 2010 and GNR 386 of 2006)
<b>GPS</b>	Global Positioning System
<b>HCS</b>	Hazardous Chemical Substance
<b>IAIA</b>	International Association of Impact Assessment
<b>IBA</b>	Important Bird (and Biodiversity) Area – of international significance for conservation of birds as identified by BirdLife International.
<b>I&amp;APs</b>	Interested and Affected Parties (as identified during the Public Participation Process)
<b>IDP</b>	Integrated Development Plan
<b>Listed Activities</b>	Activities identified in terms of NEMA Sections 24 and 24D, which require environmental authorisation prior to commencement due to their potential environmental impacts. See GNR 324, 325, 326, 327
<b>MAE</b>	Mean Annual Evaporation
<b>mamsl</b>	Metres Above Mean Sea Level
<b>MAP</b>	Mean Annual Precipitation
<b>MHI</b>	Major Hazard Installation

<b>MSDS</b>	Material Safety Data Sheets
<b>NEMA</b>	National Environmental Management Act, 1998 (Act 107 of 1998) – overarching environmental legislation in South Africa
<b>NEM:AQA</b>	National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)
<b>NEM:BA</b>	National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)
<b>NEM:PAA</b>	National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003)
<b>NEM:WA</b>	National Environmental Management: Waste Act, 2008 (Act 59 of 2008)
<b>NFEPA</b>	National Freshwater Ecosystems Priority Area
<b>NHRA</b>	National Heritage Resources Act, 1999 (Act 25 of 1999)
<b>NWA</b>	National Water Act, 1998 (Act 36 of 1998)
<b>OHSA</b>	Occupational Health and Safety Act, 1993 (Act 85 of 1993)
<b>PRECIS</b>	National Herbarium Pretoria (PRE) Computerised Information System
<b>PPE</b>	Personal Protective Equipment
<b>PPP</b>	Public Participation Process
<b>QDGC</b>	Quarter Degree Grid Cell
<b>SACNASP</b>	South African Council for Natural Scientific Professions (body for the registration of professional natural scientists)
<b>SAHRA</b>	South African Heritage Resources Agency (authority responsible for implementation of NHRA)
<b>SAHRIS</b>	South African Heritage Resources Information System (electronic system onto which reports are loaded for comments from SAHRA)
<b>SANBI</b>	South African National Biodiversity Institute
<b>SABS</b>	South African Bureau of Standards
<b>SANS</b>	South African National Standards
<b>SCC</b>	Species of Conservation Concern
<b>SDF</b>	Spatial Development Framework
<b>SDP</b>	Site Development Plan
<b>SHEQ</b>	Safety, Health, Environment & Quality
<b>SoE</b>	State of the Environment Report
<b>SPLUMA</b>	Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013)
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organisation



**WISA**      Water Institute of Southern Africa

## 1 ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

### 1.1 Details

<b>Company:</b>	HydroScience CC
<b>Registration Number:</b>	2008/056910/23 14 March 2008
<b>Email address:</b>	paulette@hydroscience.co.za
<b>Telephone number:</b>	+ 27 (0) 82 850 5482
<b>Fax number:</b>	+ 27 (0) 86 692 8820
<b>Contact person:</b>	Ms Paulette Jacobs I.D. 680526 0104 08 4
<b>Professional registration:</b>	South African Council for Natural Scientific Professions (SACNASP): 400005/07 Environmental Assessment Practitioner Association of South Africa (EAPASA): 2020/357
<b>Membership:</b>	Water Institute of Southern Africa (WISA): Fellow member 24906 International Association of Impact Assessment (IAIAsa): Member 5266

### 1.2 Experience and expertise

HydroScience CC was established in 2008 after Ms Paulette Jacobs acted as an independent consultant (sole proprietor) since 2000. HydroScience is an environmental, water and waste management solutions provider. Refer to website [www.hydroscience.co.za](http://www.hydroscience.co.za).

Ms Paulette Jacobs obtained her qualifications from the Rand Afrikaans University in Johannesburg in 1990 and has been in the water, waste and environmental field for the last 33 years, first in research for seven (7) years at the Council for Scientific and Industrial Research (CSIR) and since then in consulting (Pulles, Howard and De Lange Water Quality Management Consultants, SRK Consulting, sole proprietor, HydroScience). Refer to Appendix A for Curriculum Vitae of Ms Paulette Jacobs. Ms Paulette Jacobs assisted Department of Water Affairs and Forestry (now Department of Water and Sanitation, DWS) to compile the Best Practice Guidelines for water resource protection in the mining industry and has successfully completed many Water Use Licence (WUL) Applications in terms of the National Water Act (NWA), 1998 (Act 36 of 1998) as well as Environmental Impact Assessments (EIA) in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) as amended for the mining, industrial, retail, tourism, commercial/business, institutional, educational and residential sectors to obtain environmental authorisations, Atmospheric Emissions Licenses (AEL) and Waste Management Licenses (WML) over the last 23 years.

### 1.3 Supporting information

Appendix A contains:

- Curriculum vitae: Ms Paulette Jacobs
- Qualifications: Ms Paulette Jacobs
- Professional affiliations: Ms Paulette Jacobs

### 1.4 Assumptions, limitations, disclaimer and copyright

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information at the time of compilation (June 2023). The report is based on review and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken (Basic Assessment Process) and HydroScience and its staff reserve the right to modify aspects of the report if and when new information may become available from changes in legislation, on-going research or further work in this field, or pertaining to this investigation.

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Shield Chemicals (Pty) Ltd is responsible for the implementation of recommendations and HydroScience cannot and will not take responsibility for its actions or lack thereof.

### 1.5 Declaration of independence

I, **Paulette Jacobs**, declare that –

- I act as an independent environmental, water and waste consultant in this investigation;
- I have expertise in water, waste and environmental management, including knowledge of the relevant Acts, Regulations and any guidelines that have relevance to the investigation;
- I have performed the work relating to this investigation in an objective manner, even if this results in views and findings that are not favourable to any party involved;
- I have included the specialist studies provided to me in Appendices as well as summarised findings and recommendations in this report;
- I have recorded and included comments received from stakeholders and interested and affected parties in the report;

- I undertake to disclose all material information in my possession that reasonably has or may have the potential to influence this investigation, unless access to that information is protected by law, in which case it will be indicated that such information exists;
- I do not have any vested interest (either business, financial, personal or other) in the investigation other than fair remuneration for work performed; and
- I will provide the parties with access to all information at my disposal regarding the investigation, whether such information is favourable or not.



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Signature: Paulette Jacobs

## 2 APPLICANT / PROPONENT

### 2.1 Details

<b>Applicant (individual):</b>	Shield Chemicals (Pty) Ltd
<b>Registration Number:</b>	1985/005072/07 8 November 1985
<b>Postal address:</b>	P.O. Box 1939 Benoni 1500
<b>Physical address:</b>	9 London Road, Apex Benoni
<b>Web address:</b>	<a href="http://www.shieldchem.co.za">www.shieldchem.co.za</a>
<b>Telephone number:</b>	(011) 421 7111
<b>Fax:</b>	(011) 421 0475
<b>Representative:</b>	Jayson Clark Cellular number: 083 442 0450 Email address: <a href="mailto:jclark@shieldchem.co.za">jclark@shieldchem.co.za</a>

### 2.2 Supporting information

Appendix B contains details on the applicant and property.

### 3 PROPERTY

#### 3.1 Locality details

<b>Province:</b>	Gauteng
<b>Municipality:</b>	City of Ekurhuleni (CoE)  <u>Head Office:</u> Cnr Rose and Cross Streets Germiston Telephone number: 011 999 0156  <u>Contact person:</u> Daniel Masemola Tel: 011 999 3136 Email: Daniel.Masemola@ekurhuleni.gov.za
<b>Ward:</b>	Ward 73 Ward councillor: Samuel Siphon Ngobese Cellular number: 076 220 9077 Email: Siphon.Ngobese@ekurhuleni.gov.za
<b>Surrounding towns / suburbs:</b>	Located in: Benoni Industrial area North: Dewald Hattingh Park, MacKenzie Park West: Apex, R23 South: Leachville East: Government Gold Mine Areas Consolidated Benoni Central Business District (CBD): approximately 2.7km north west
<b>Roads:</b>	London Street Antwerp Street
<b>Property description:</b>	Erven 265 & 266 Apex X4  Address: Corner London and Antwerp Streets
<b>Surveyor General Code:</b>	T0IR00190000026500000 T0IR00190000026500000
<b>Coordinates (WGS84):</b>	26° 12' 32.63" South 28° 19' 58.53" East

See Figure 3.1 below.

### 3.2 Property details

<b>Property description:</b>	Erven 265 & 266 Apex X4  Address: Corner London and Antwerp Streets
<b>Property ownership:</b>	Hoganite Manufacturing (Pty) Ltd 2013/232854/0723  Shield (Pty) Ltd leases property (see lease agreement in Appendix B)
<b>Sizes:</b>	Property: ± 0.4ha
<b>Access:</b>	From Antwerp or London Street
<b>Current land use:</b>	Industrial
<b>Previous land use:</b>	Industrial – La Farge Cement site
<b>Future land use:</b>	Industrial – Chemical storage and blending (Alcohol, Benzine and Kerosene) storage
<b>Existing structures:</b>	Concrete base
<b>New structures:</b>	8 X 33m <sup>3</sup> tanks 1 600m <sup>2</sup> building (housing raw materials) Decanting facility for offloading and storage of flammable liquids.
<b>Surrounding land use / character:</b>	North: Shield Chemicals (Pty) Ltd on London Street East: Shield Chemicals (Pty) Ltd on London Street South: Antwerp street West: The Glass Resorting Company and Goldwins Enterprises Cc  The site is located within a built-up urban area dominated by industrial land-use
<b>Gauteng Environmental Management Framework (EMF):</b>	Zone 2
<b>Sensitivity (DFFE screening tool):</b>	<b>Archaeological and Cultural Heritage Theme:</b> Very high - within 5km of a Grade I Heritage site (specialist input provided - outdated data or refer to wider area.)  <b>Paleontology Theme:</b> Very high - Features with a Very High paleontological sensitivity (specialist input provided – no fossils, disturbed by built environment)

	<p><b>Terrestrial Biodiversity Theme:</b> Very High - Vulnerable Ecosystem (specialist input provided – site void of vegetation, built-up area)</p>
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### 3.3 Supporting information

Appendix C includes photographs.

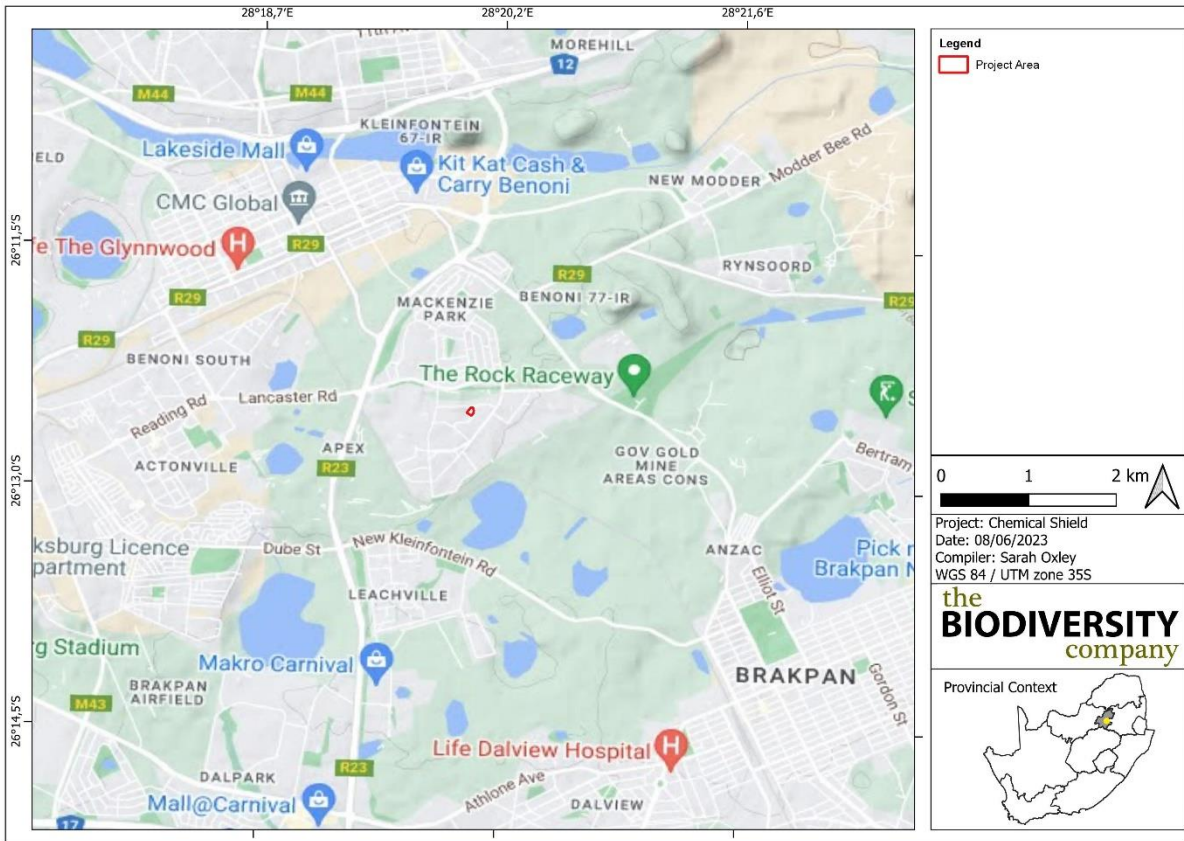


Figure 3-1: Regional locality map (TBC, 2023)



## 4 PROJECT

### 4.1 Details

Project title:	Establishment of eight (8) 33m <sup>3</sup> tanks with Alcohol, Benzene and Kerosene respectively on Erven 265 & 266 Apex X4, corner London and Antwerp streets, Benoni, City of Ekurhuleni, Gauteng Province.
Type of industry / sector:	Chemical Storage & blending
Project description:	<p>Eight (8) 33m<sup>3</sup> tanks with Alcohol, Benzene, Kerosene respectively, will be established. The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80m<sup>3</sup> or more but not exceeding 500m<sup>3</sup> is a listed activity (Listing 1, Activity 14) requiring environmental authorisation. The Department of Environment, Fisheries and Forestry (DFFE) screening tool indicates sensitivity in terms of archaeology, palaeontology and terrestrial biodiversity (vulnerable ecosystem).</p> <p>Iso-tanks will be double insulated. Off-loading via three (3) pumps from road tankers of 50 m<sup>3</sup> tankers at 1 delivery per week. The bin store has combined 80 m<sup>3</sup> of Toluene and same as above 3 products. The tanks will pump the products to the building via 8 pumps (each tank has its own pump). The building (1 600m<sup>2</sup>) will be processing these products into day tanks.</p>
Access:	From London or Antwerp street
Project area:	<p><u>Property:</u> North western corner: 26° 12' 33.18" South 28° 19' 57.01" East South western corner: 26° 12' 34.24" South 28° 19' 58.88" East North eastern corner: 26° 12' 31.11" South 28° 19' 58.44" East Eastern corner: 26° 12' 31.12" South 28° 19' 59.36" East South eastern corner: 26° 12' 33.12" South</p>

	28° 19' 59.54" East
Emissions expected:	None under normal operating conditions.
Electrical power supply:	CoE
Noise expected:	Trucks moving into, through and off premises. One (1) delivery per week.
Water supply:	CoE
Solid waste management:	CoE
Wastewater management:	CoE
Groundwater impacts:	None, under normal operating conditions. Isotainers above ground
Characteristics of dangerous goods stored & handled: <ul style="list-style-type: none"> <li>Organic compounds</li> <li>Liquids</li> <li>Flammable</li> </ul>	<p><u>Alcohol (ethanol):</u> C<sub>2</sub>H<sub>6</sub>O. Volatile, flammable, colourless.</p> <p><u>Benzene:</u> C<sub>6</sub>H<sub>6</sub>. Benzene is a natural constituent of petroleum. Elementary petrochemical. An aromatic hydrocarbon. Highly flammable, colourless liquid with a sweet smell (responsible for aroma of gasoline).</p> <p><u>Kerosene:</u> Combustible hydrocarbon liquid which is derived from petroleum.</p>
Inherent risk:	Flammable

## 4.2 Screening

The Department of Forestry, Fisheries and the Environment (DFFE) screening tool was used and a screening report generated. The following came from the report:

Aspect:	Sensitivity:	Requirement from other recent studies conducted on the site:
Environmental Management Framework (EMF)		Gauteng EMF Zone 2
Agricultural	Medium	Land capability: 06. Low-Moderate 07. Low-Moderate 08. Moderate  <u>Comments:</u> No agricultural activities based on historic Google earth™ images, no agriculture in this area. Industrial area.
Animal	Medium	Mammalia: <i>Chrysofalax villosus</i> (Rough-haired Golden Mole)

Aspect:	Sensitivity:	Requirement from other recent studies conducted on the site:
		<p><i>Crocidura maquassiensis</i> (Makwassie Musk Shrew)  <i>Dasymys robertsii</i> (African March Rats) – no wetlands  <i>Hydricis maculicollis</i> (Spot-necked Otter) – no wetlands</p> <p>Invertebrate:  <i>Clonia uvarovi</i> (Bush cricket)</p> <p><u>Comments:</u>            No fauna – developed site.            Specialist statement - Refer to TBC, 2023 in Appendix F.</p>
Aquatic biodiversity	Low	No concern
Archaeological and Cultural Heritage	Very High	<p>Within 5km of a Grade I Heritage site</p> <p><u>Comments:</u>            No sites were identified – developed site.            Specialist opinion - Refer to Archaetnos Culture &amp; Cultural Resource Consultants, 2023 in Appendix F.</p>
Civil aviation	High	<p>Within 15 km of a civil aviation radar.            Within 8 km of other civil aviation aerodrome</p> <p><u>Comments:</u> No concern, no impact based on planned project.</p>
Defence	Low	No concern, no impact.
Palaeontology	Very High	<p>Features with a Very High paleontological sensitivity.</p> <p><u>Comments:</u>            No fossils were identified – developed site.            Specialist report - Refer to Durand, 2023 in Appendix F.</p>
Plant	Low	No concern, site void of vegetation.
Terrestrial biodiversity	Very High	<p>Vulnerable ecosystem.</p> <p><u>Comments:</u>            Disputed, no biodiversity (developed site)            Specialist statement - Refer to TBC, 2023 in Appendix F.</p>

### 4.3 Need and Desirability / Motivation

Addressing need and desirability is a way of ensuring sustainability. Therefore, the project must be ecologically sustainable and socially and economically justifiable.

#### 4.3.1 Socio-Economic

Economic: Financial investment by applicant:	R20 million for this project
Employment:	Shield Chemicals (Pty) Ltd currently employs about 400 people at its existing facilities. 18 additional people will be employed for this project: <ul style="list-style-type: none"> <li>• 10 men</li> <li>• 8 women</li> </ul>
Social: Need for applicant:	Shield Chemicals (Pty) Ltd requires these facilities to support its existing operational facilities.

#### 4.3.2 Services

The site receives services from CoE.

#### 4.3.3 Municipal planning

2022/23 – 2026/27 Integrated Development Plan (IDP) for the City of Ekurhuleni:

Purpose: To provide a framework for implementing the Back-to-basics approach towards infrastructure investment and renewal; sustainable economic growth and job creation for the municipal area.

Review: First revision approved in May 2022.

Development: Strengthening industrial competitiveness of the CoE through modern industrial systems and infrastructure development, including the development of new value chains, markets and their associated products and influencing broader access and participation (especially by small and medium enterprises) in the economic activities of the region is the hallmark of the City's economic development endeavours.

The city has made great strides in the implementation of the economic 10-Point Plan which include the following:

- A clear roadmap for the effective implementation of the Aerotropolis Master Plan;
- Revitalisation of the manufacturing sector;
- Enabling public transport system;
- Acceleration of Industrial Development Zone (IDZ) / Special Economic Zone (SEZ) programme;
- Land availability for strategic development;
- Implementation of Township Economy Strategy;
- Empowerment and support of SMMEs through public procurement;
- Massive infrastructure investment;

- Promote support of local products (Buy Local);
- Skills and capacity development;
- Increase investment attraction.

***Shield Chemicals (Pty) Ltd is in the manufacturing sector.***

Regional Spatial Development Framework (SDF): Region D:

Region D is located favourably in terms of economic activity and employment and can be described as a multi-centred region as it has multiple locations of economic activity (business and industrial) and human settlements.

Industrial development occurs predominantly along the eastern (Geduld Proprietary Mines, Enstra), southern (Fulcrum, New Era and Vulcania) and western (Benoni South and Apex) boundaries of Region D.

***The facility falls within a preferred urban growth area and therefore supports the spatial development plans to overcome the fragmented nature of the city and to develop a continuous urban structure in support of engineering, social and business services.***

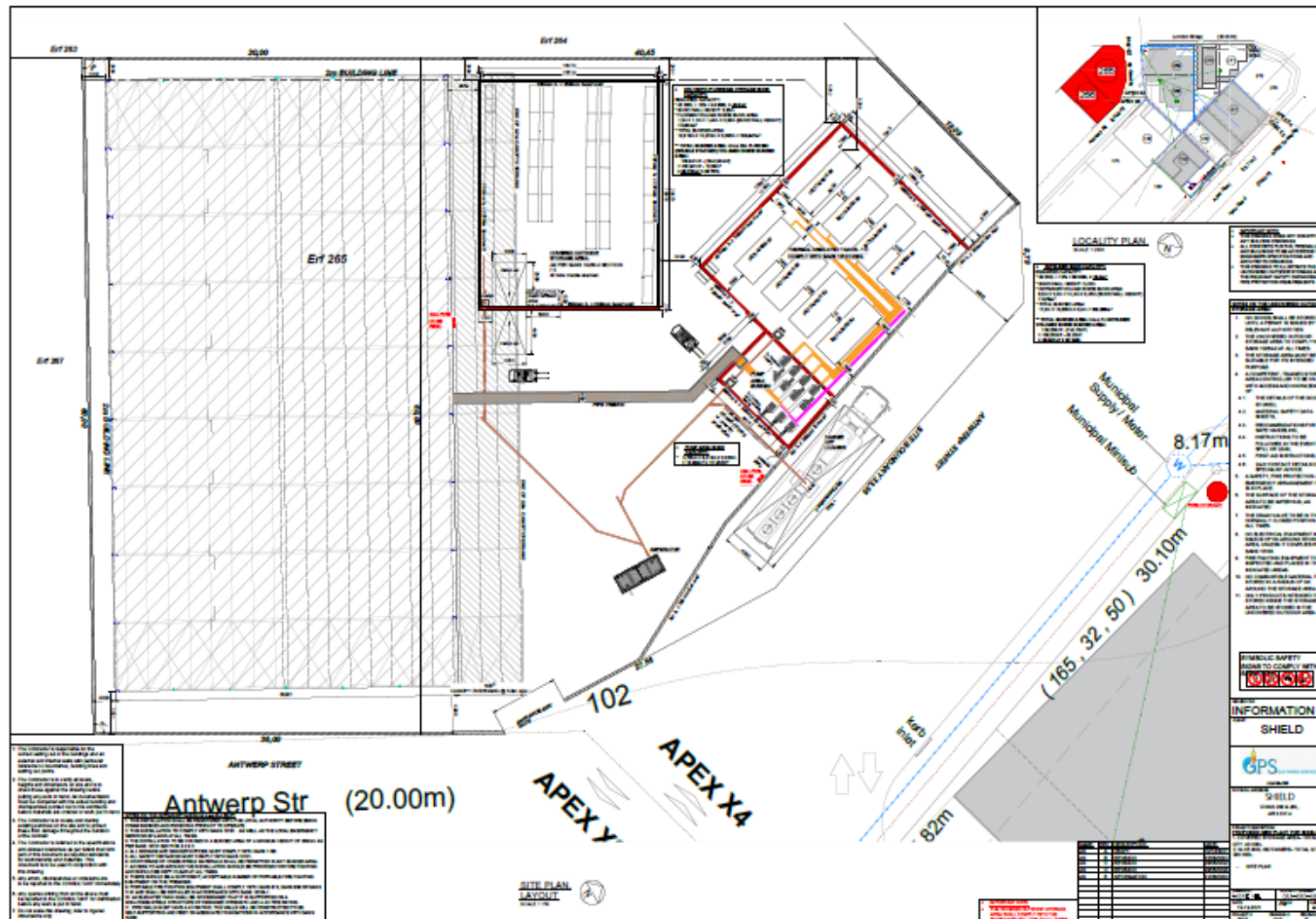


Figure 4-1: Site Development Plan (SDP) and location of tanks (GPS, 2023)

## 5 LEGAL FRAMEWORK

### 5.1 Constitution of the Republic of South Africa (CRSA)

The Constitution of the Republic of South Africa (CRSA), 1996 (Act 108 of 1996) places a duty on the State to protect the environment. Section 24 states that:

“Everyone has the right

- a. to an environment that is not harmful to their health or well-being; and
- b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that
  - i. prevent pollution and ecological degradation;
  - ii. promote conservation; and
  - iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”

***The right in the CRSA is given effect in several articles of national legislation including the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended.***

### 5.2 National Environmental Management Act (NEMA)

The National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended is the overarching environmental legislation in South Africa.

#### 5.2.1 Sustainable development

The principle of Sustainable Development has been established in the CRSA and given effect by the NEMA. Section 1(29) of NEMA states that sustainable development means the integration of social, economic and environmental factors into the planning, implementation and decision-making process so as to ensure that development serves present and future generations. Thus, Sustainable Development requires that:

- The disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied.
- That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied.
- That the disturbance of landscapes and sites that constitute the nation’s cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied.
- That waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner.
- That a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.
- Negative impacts on the environment, on people’s environmental rights be anticipated; and, prevented, and where they cannot altogether be prevented, are minimised and remedied.

Duty of care is addressed in Section 28 of the NEMA.

***In terms of sustainable development:***

- ***The disturbance of ecosystems and loss of biodiversity and the disturbance of landscapes and sites that constitute the nation’s cultural heritage are prevented through the use of an already disturbed and developed property.***

- **The pollution potential from the storage and handling of chemicals is limited through design of containment tanks underground (SANS 10089:3).**
- **Waste cannot be avoided in a development of this nature (industrial operation) and is therefore managed and disposed in a responsible manner.**
- **Negative impacts on the environment and on people's environmental rights be anticipated and managed through an Environmental Management Programme (EMPr).**

### 5.2.2 NEMA regulations

Government Notice Regulation (GNR) 982, 983, 984 and 985 of 4 December 2014 contain the latest regulations pertaining to Environmental Impact Assessment (EIA) under sections 24(5), 24M and 44 of the NEMA. These were amended / updated on 7 April 2017 under GNR 324, 325, 326 & 327.

GNR 982 as amended / updated in GNR 326 stipulate requirements in terms of processes to be followed and information to be included in documentation.

GNR 985 as amended / updated in GNR 324 was considered and no applicable activities were identified.

GNR 984 as amended / updated in GNR 325 was considered and applicable activities were identified. **Though the site is indicated as located within a vulnerable ecosystem, this is not the case as the site has been transformed for many years. Therefore, no activities under listing GNR 325 are applied for.**

Activities identified for this project, which require environmental authorisation, are contained in GNR 983 as amended / updated in GNR 327 due to the total volume of LPG storage and handling planned.

### 5.2.3 Listed activities applicable

The following listed activities require environmental authorisation:

GNR & Date	Activity Number and Description	Project Description
GNR 983 as amended / updated in GNR 327	14. The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80m <sup>3</sup> or more but not exceeding 500m <sup>3</sup> is a listed activity	Establishment of eight (8) 33m <sup>3</sup> tanks with Alcohol, Benzine and Kerosene

GNR 985 as amended / updated in GNR 324:

**No activities applicable as the site is developed in an industrial area and not sensitive.**



## 5.3 National Environmental Management: Biodiversity Act (NEMBA)

### 5.3.1 Commitment to biodiversity conservation

Although South Africa became a signatory to the Convention of Biological Diversity in 1998, the subsequent enactment of national legislation has affirmed our country's commitment to biodiversity and conservation as required in the CRSA. The National Environmental Management: Biodiversity Act (NEMBA), 2004 (Act 10 of 2004) has been promulgated by the South African President and was published in the Government Gazette in June 2004 (Volume 467; No. 26426). One of the objectives of this Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and to ensure the sustainable use of indigenous biological resources.

The Act, in protecting biodiversity, deals with:

- the protection of threatened ecosystems and species;
- the control of alien invasive species;
- the control of genetically modified organisms; and
- regulates bioprospecting.

As with NEMA, NEMBA incorporates and gives effect to international agreements relating to biodiversity.

### 5.3.2 Protection of threatened ecosystems and species

Ecosystems that are Critically Endangered, Endangered or Vulnerable can be listed in terms of Section 52 of the Act as threatened ecosystems at both national and provincial level. For example, Critically Endangered ecosystems are defined in the Act as being 'ecosystems that have undergone severe degradation of ecological structure, function or composition as a result of human intervention and are subject to an extremely high risk of irreversible transformation'. Importantly, any land-use change application occurring within an ecosystem listed as Critically Endangered or Endangered will automatically require environmental authorisation.

***The project area is located within a terrestrially vulnerable ecosystem according to the DFFE screening tool but this is clearly incorrect as the site has been transformed many years before and the site is void of vegetation.***

Threatened or Protected Species Regulations of 2013 (GNR388 of 2013): Part 2 of NEMBA provides for listing of species that are threatened or in need of protection to ensure their survival in the wild, while regulating the activities, including trade, which may involve such listed threatened or protected species and activities which may have a potential impact on their long-term survival. In February 2007, the Minister of Environmental Affairs and Tourism published a list of Critically Rare, Endangered, Vulnerable and Protected Species, according to Section 56(1) of the Act, which was updated again in 2013.

***The site is void of vegetation.***

### 5.3.3 Control of alien invasive species

The list of alien and invasive species is intended to provide a legal framework to manage and control alien species that are considered invasive and that have the potential to threaten biodiversity, water resources and agricultural potential. NEMBA has identified all species that

should be considered as alien or invasive species, as well as the restricted activities relating to each species. It is required by law (from 1 October 2014), for landowners to investigate the type and extent of alien invasive species growing on their property and to implement an effective control and eradication management plan.

***Refer to Alien and Invasive Species Regulations, 2020 (GNR1020). The site is void of vegetation***

## 5.4 National Environmental Management: Protected Areas Act (NEMPAA)

The National Environmental Management: Protected Areas Act (NEM:PAA), 2003 (Act 57 of 2003) provides protection for ecologically viable areas representative of South Africa's biodiversity.

***The project area is not located within a protected area.***

## 5.5 National Environmental Management: Waste Act (NEMWA)

In terms of the National Environmental Management: Waste Act (NEMWA), 2008 (Act 59 of 2008), the following is relevant to this project:

- GNR 926 of 29 November 2013. National Norms and Standards for the Storage of Waste. ***The storage of waste material on the site before off-site recycling and disposal has to comply with these Norms and Standards.***

## 5.6 National Water Act (NWA)

### 5.6.1 Water uses

The National Water Act (NWA), 1998 (Act 36 of 1998) Section 21 defines water use as:

- (a) taking water from a water resource.
- (b) storing water.
- (c) impeding or diverting the flow of water in a watercourse.
- (d) engaging in a stream flow reduction activity contemplated in section 36.
- (e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1).
- (f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit.
- (g) disposing of waste in a manner which may detrimentally impact on a water resource.
- (h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process.
- (i) altering the bed, banks, course or characteristics of a watercourse.
- (j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people.
- (k) using water for recreational purposes.

## 5.6.2 Legal requirements

The NWA states in Section 22 (1) that a person may only use water –

- (a) without a licence –
  - (i) if that water use is permissible under Schedule 1;
  - (ii) if that water use is permissible as a continuation of an existing lawful use; or
  - (iii) if that water use is permissible in terms of a general authorisation issued under section 39;
- (b) if the water use is authorised by a licence under this Act; or
- (c) if the responsible authority has dispensed with a licence requirement under subsection (3).

***Water is supplied by CoE, no wetlands.***

## 5.7 Conservation of Agricultural Resources Act (CARA)

### Conservation of agricultural potential:

The aim of the Conservation of Agricultural Resources Act (CARA), 1983 (Act 43 of 1983) is to provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

To achieve this aim, the following objectives are included:

- To provide for the conservation of the natural agricultural resources of the Republic by the maintenance of the production potential of land;
- The combating and prevention of erosion and weakening or destruction of the water sources, and
- The protection of the vegetation and the combating of weeds and invader plants.

***The zoning of the property is unknown but it is used for and located in an industrial area.***

## 5.8 National Heritage Resources Act (NHRA)

### 5.8.1 Legislation

The National Heritage Resources Act (NHRA), 1999 (Act 25 of 1999) requires protection of the following cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years;
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography;
- c. Objects of decorative and visual arts;
- d. Military objects, structures and sites older than 75 years;
- e. Historical objects, structures and sites older than 60 years;
- f. Proclaimed heritage sites;
- g. Grave yards and graves older than 60 years;
- h. Meteorites and fossils; and
- i. Objects, structures and sites of scientific or technological value.

The national estate includes the following:

- a. Places, buildings, structures and equipment of cultural significance;
- b. Places to which oral traditions are attached or which are associated with living heritage;

- c. Historical settlements and townscapes;
- d. Landscapes and features of cultural significance;
- e. Geological sites of scientific or cultural importance;
- f. Archaeological and paleontological importance;
- g. Graves and burial grounds;
- h. Sites of significance relating to the history of slavery; and
- i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.).

### **5.8.2 Applicability**

***Refer to Appendix F for the cultural heritage exemption.***

### **5.9 Other documents**

The following documents were also considered:

- Department of Environmental Affairs (DEA), 2017. Integrated Environmental Management Guideline. Guideline on need and desirability. ISBN 978-0-9802694-4-4.
- DEA, 2017. Public participation guideline in terms of NEMA, 1998 EIA regulations. ISBN 978-0-9802694-2-0.

## 6 ENVIRONMENTAL SETTING

### 6.1 Socio-economic environmental overview

<b>Province:</b>	Gauteng
<b>Municipality:</b>	City of Ekurhuleni (CoE)
<b>Region:</b>	D
<b>Roads:</b>	<p>Region D is predominantly bound by the N12 to the north and the N17 to the south. Both these national roads are major east-west links, with the N12 / North Rand Road linking the CoE to the City of Johannesburg (CoJ) to the west and to Middelburg in the east. The N17 also links the CoE to CoJ to the west and Leandra to the east. The major north-south links in Region D is Barry Marais Road, which forms the western boundary of Region D and links to the N3 in the south and Kempton Park in the north. The eastern boundary of Region D is broadly Welgedacht Towns.</p> <p>The R29 connects Johannesburg with Leandra and Kinross via Germiston, Boksburg, Benoni and Springs. The R23 links Benoni with Volksrust via Brakpan, Heidelberg and Standerton.</p> <p><b><i>The project area is located close to the R23 to the west and R29 (Main Reef Road) to the North.</i></b></p>
<b>Population:</b>	<p>CoE's population has grown exponentially from an estimated 2 481 752 in 2001 to 3 379 104 in 2016. According to Statistics SA, the current population represents over 6% of the total population of South Africa. The growth rate has been declining from 2,8% in 2011 to the current 2,1%. It is projected that the population of the CoE will grow at a slower rate at less than 2% resulting in an expected over 4 million residents by 2030 and 8.8 million residents by 2050. The population of Region D was 233 000 people in 2012.</p> <p><u>Households:</u> The CoE has 1 299 490 households which is 284 025 more households since 2011. Region D has 71 700 households. According to the household survey conducted in 2016, 18.7% of these households live in informal dwellings. The households in Ekurhuleni constitute about a quarter of the households in Gauteng and about 10% of the households in South Africa.</p>

	<p><u>Urbanisation:</u> Typical urban challenges such as rapid urbanisation and the influx of people seeking job opportunities form part of the vast challenges that the City experiences.</p> <p><u>Relocation:</u> A key aspect of growth in the Ekurhuleni population is the net migration into the City. Ekurhuleni, with Tshwane and Johannesburg, are the largest recipients of in-migration in the country.</p>
Demographics:	<p><u>Age:</u> Approximately 66% of the population is of a working age and 53% of the CoE population are between the ages of 20 and 49. The median age (30 years) of the City is slightly higher than that of Gauteng (29 years) and 20% higher than that of South Africa (25 years). Around 66% of the population is between the ages of 18 and 64, 18% is below the age of 18 and 6% is above the age of 65. The City has a relatively young population, which is about the same as that of Gauteng.</p> <p><u>Gender:</u> Males make up 51% of the population within the City and females account for 49%, except in Kempton Park, Alberton and Edenvale where women constitute between 51 and 53%.</p>
Education:	Education has improved significantly, especially in terms of people with a secondary school education (including matric) and post-matric qualifications.
Employment:	Skilled and semi-skilled employment has grown by 2.7% and 1.4%, respectively, while low skilled labour has grown very slowly at 2% per annum. Informal employment has grown at an average of 7.7% per annum. Approximately 26% of the labour force is considered skilled, while 47% is semi-skilled and 27% is low skilled.
Unemployment:	Unemployment remains a significant challenge, with CoE's rate of unemployment exceeding the provincial average by more than 1%, at 30.1%. The municipality has consistently had higher unemployment rates than the provincial and national levels between 2015 and 2019.
Economic structure:	<p>The CoE is regarded a major economic and social role-player in South Africa due to its strong industrial characteristics as well its contribution to the national economy.</p> <p>The CoE economy is dominated by the following four sectors: manufacturing, finance and business services, community services and general</p>

	<p>government and to a lesser extent the trade and hospitality sector.</p> <p>The industrial areas of Spartan, Isando, Jet Park, Olifantsfontein, Wadeville, Alrode and Dunswart, house the bulk of the manufacturing and transport industries in Ekurhuleni. The CBDs of Kempton Park, Boksburg, Benoni and Germiston, contain the bulk of the finance and local retail sector; and the retail sector dominates the townships of Tembisa, Kathorus, Daveyton, Etwatwa and Kwatsaduza.</p> <p>The average economic growth rate over the past 20 years was 3.95%, with the most significant contribution to the total value of the local economy coming from business services (23.7%) and manufacturing (18.2%) sectors. Mining (2.4%), utilities (1.9%) and agriculture (0.4%) are the smallest contributing sectors.</p> <p>The fuel, petroleum, chemical and rubber products sub-sector contributed 24% to total regional manufacturing output in 2018 making it the second most dominant contributor after the metal sub sector.</p> <p>Strengthening industrial competitiveness of CoE through modern industrial systems and infrastructure development, including the development of new value chains, markets and their associated products and influencing broader access and participation (especially by small and medium enterprises) in the economic activities of the region is the hallmark of CoE economic development endeavours.</p>
<b>Socio-economic aspects of the project</b>	
Surrounding land use:	<p>Industrial</p> <p>The project is situated in the Apex area which is dominated by industrial and manufacturing activities.</p>
Accessibility:	Easy access from London and Antwerp Streets
Investment:	R20 million for this project
Job creation:	<p>Shield Chemicals (Pty) Ltd currently employs about 400 people at its existing facilities.</p> <p>18 additional people will be employed for this project:</p> <ul style="list-style-type: none"> <li>• 10 men</li> <li>• 8 women</li> </ul>

## 6.2 Biophysical environmental overview

<b>Climate:</b>	The climate of the area is a typical Highveld climate with hot summers and colder winters. The region has seasonal summer rainfall and dry winters with an overall average rainfall of 700 mm per annum.
<b>Topography:</b>	The topography of the site is relatively flat. The site falls from 1 649 mamsl in the north west to 1647 mamsl in the south east with is a 2m fall over a distance of 73.5m.
<b>Biodiversity (TBC, 2023):</b>	<p><u>Desktop sensitivity:</u> Vulnerable Ecosystem (DFFE, screening tool)</p> <p><u>Site Sensitivity:</u> On-site verification differs from the screening tool, and the site sensitivity can be deemed as 'Low' for the terrestrial biodiversity theme.</p> <p>The project area did not traverse any of the following areas:</p> <ul style="list-style-type: none"> <li>• Important Bird and Biodiversity Areas (2015);</li> <li>• Gauteng Ridges (GDARD, 2019);</li> <li>• South Africa Protected and Conservation Areas Databases, 2022;</li> <li>• National Protected Areas Expansion Strategy (2016) (NPAES);</li> <li>• Critical Biodiversity Areas (CBAs); and</li> <li>• Ecological Support Areas (ESAs).</li> </ul> <p>Area is not able to sustain species of conservation concern (SCC), terrestrial biodiversity and ecological support systems.</p> <p>The site is located within a built-up urban area dominated by industrial land-use.</p> <p>The survey area comprises of no vegetation and possesses extremely limited biodiversity value.</p>
<b>Heritage &amp; cultural (Archaetnos, 2023):</b>	<p>Any possible archaeological sites will indeed not be impacted on.</p> <p>The chances of finding any heritage related features are indeed extremely slim, if any.</p>
<b>Palaeontology (JF Durand, 2023):</b>	<p><u>Desktop:</u> Shale and sandstone of the Vryheid Formation of the Ecca Group of the Karoo Supergroup underlie the study site. The sedimentary rocks of the Vryheid Formation are highly fossiliferous in places.</p> <p><u>Site findings:</u> No fossils were found during the site visit. The geology of the site is obscured by built structures.</p>



## **7 ALTERNATIVES**

### **7.1 Location Alternative**

#### **7.1.1 Alternative property**

An alternative property was not considered as this property became available and there are not many vacant properties available. This property is also located directly west of the existing Shield Chemicals (Pty) Ltd operational site, which makes it the ideal location.

### **7.2 Alternative use**

An alternative use for the property was not considered as this is in an industrial area, in close proximity to the Shield Chemicals (Pty) Ltd operational site and was previously used by La Farge Cement.

### **7.3 No-go alternative**

The no-go alternative will imply that the project is not approved and the expansion of operations by Shield Chemicals (Pty) Ltd on this site will not go ahead as planned. This will not meet the need for Shield Chemicals (Pty) Ltd planned expansion of its operations which is required.

## 8 PUBLIC PARTICIPATION PROCESS

### 8.1 Summary

Newspaper notice:	Newspaper: Benoni City Times Date of publication: 9 June 2023 Page: 10 Distribution: 39 600 copies/weekly Refer to Appendix E.
Site notice:	Date placed: 19 June 2023 Size: 800 X 600 mm Number of notices: 2 Location: 26° 12' 32.1" South; 28° 19' 59.7" East (facing Antwerp Street) 26° 12' 31.0" South; 28° 19' 59.2" East (facing London Street)  Refer to Figures 8-1 to 8-3.
Interested and Affected Parties (I&APs):	I&APs registered: <ul style="list-style-type: none"> <li>• Applicant and owner of a number of surrounding properties – Shield Chemicals (Pty) Ltd</li> <li>• Owners of neighbouring properties <ul style="list-style-type: none"> <li>○ MFH Cylinders &amp; Pumps</li> <li>○ Milltech Engineering</li> <li>○ Civtek (Pty) Ltd</li> <li>○ RKD Engineering</li> <li>○ Altivex Mining</li> <li>○ Surelift Hoist Hub</li> <li>○ Mia Familia</li> <li>○ Alloo Mohmed Iqbal Yakub</li> <li>○ The Glass Resorting Company</li> <li>○ Goldwins Enterprises Cc</li> <li>○ Platoon Lubricants</li> <li>○ Apex Cordset Technologies (Pty) Ltd</li> <li>○ Dias Dos Xaropes</li> <li>○ Equipment Warehouse</li> <li>○ Sinica Manufacturing</li> <li>○ Mawele Engineering</li> <li>○ Packman Prop Pty Ltd</li> </ul> </li> <li>• CoE <ul style="list-style-type: none"> <li>○ City Planning</li> <li>○ Environmental Protection, Resilience and Project Management</li> <li>○ Environmental Compliance</li> <li>○ Fire Department (Emergency Services)</li> </ul> </li> <li>• Ward councillor</li> <li>• GDARD (administration and 2 people in SUE)</li> </ul> <p>Refer to Table 8-1.</p>
Comments received:	Ward Councillor interested in job opportunities and investment made.

## 8.2 Introduction

The Public Participation Process (PPP) aims to provide all Interested and Affected Parties (I&APs) with clear, accurate and comprehensible information about the project: Establishment of eight (8) 33m<sup>3</sup> tanks with Alcohol, Benzine and Kerosene respectively on Erven 265 & 266 Apex X4, corner London and Antwerp streets, Benoni, City of Ekurhuleni, Gauteng Province. In addition, the process seeks to provide I&APs with the opportunity to indicate their viewpoints on issues and concerns about the project.

This process, therefore, enhances transparency and accountability in decision-making, as it allows all I&APs to suggest ways of avoiding, reducing or mitigating potential negative impacts, as well as enhance positive impacts of the project. All inputs from the I&APs are considered. Consequently, clear recording of all issues and concerns raised have been maintained in a comments and response register. This register has been updated when new issues or concerns were raised (Table 8-2).

This section provides a methodical description of the PPP followed. It also contains a complete record of public notices, details of all registered I&APs and all communications to and from I&APs pertaining to the application.

## 8.3 Approach

The aim of the PPP is not only to adhere to the required legislation, but also to give as many stakeholders and I&APs as possible, an opportunity to be actively involved in this process.

The PPP has been carried out in accordance with Chapter 6 of the NEMA and in support of the EIA Regulations of 2014 as amended. Based on these Regulations, published in terms of Sections 39 to 44 of GNR 982 amended in GNR 326 of NEMA, the following steps were undertaken:

- Potential I&APs were identified through windeed searches for properties, property owners, property owner contact details, Google earth™ street view, conducting a visit to the area on 19 June 2023, through notices placed on site (Figures 8-1 – 8-3) as well as through placing a notice in the local newspaper, the Benoni City Times;
- A stakeholder register was compiled in terms of Regulation 42 that includes provincial (GDARD) and local authority (CoE & Ward Councillor), organisations as well as neighbours that may have an interest;
- I&APs were given more than 30 days to register and raise concerns (9 June to 31 July 2023). The draft report was made available through electronic channel (wetransfer) upon request on 2 July 2023 for a period of 30 days. Any concerns that have been raised by I&APs were acknowledged, noted and addressed (Table 8-2) by the EAP where possible; and
- A recorded summary of concerns raised by I&APs, as well as the responses from the EAP, was kept throughout the entire process.

## 8.4 Public awareness

### 8.4.1 Site Notices

Two (2) notices (measuring 800 mm x 600 mm) were placed at the site along the property boundary where these would be visible to visitors to the site and people passing the site on London or Antwerp Streets, on 19 June 2023 at:

- 26° 12' 32.1" South; 28° 19' 59.7" East on property fence facing Antwerp Street
- 26° 12' 31.0" South; 28° 19' 59.2" East on property fence facing London Street

The notice contained details regarding the applicant (Shield Chemicals (Pty) Ltd), the nature of the activity (Establishment of eight (8) 33m<sup>3</sup> tanks with Alcohol, Benzine and Kerosene respectively on Erven 265 & 266 Apex X4, corner London and Antwerp streets, Benoni, City of Ekurhuleni, Gauteng Province), and the contact details of the EAP (see Figure 8-1). The placement of the site notices was recorded by taking photographs of the placed notices on site, as well as by recording the GPS coordinates of the position (see Figures 8-2 – 8-3). The notice remained on the site for the duration of the process (June – August 2023).

### 8.4.2 Newspaper Notice

A detailed newspaper notice was placed in the Benoni City Times Newspaper, published on 9 June 2023, page 10 (see Appendix E). Distribution areas of the newspaper are as follows:

- Airfield
- Alphen Park
- Actonville
- Atlasville
- Benoni CBD
- Benoni North / West
- Benoni Small Farms
- Boatlake Village
- Brentwood Ext 1 & 3
- Cloverdene
- Crystal Park
- Dewald Hattingh Park
- Farrarmere
- Goedeburg
- Kilfenora
- Lakefield
- Linksvie
- Mackenzie Park
- Morehill
- Norton Home Estates
- Northmead
- Northvilla
- Oakfields
- Rynfield
- Ryanglen
- Slaterville
- The Stewards
- Westdene

The aim of placing a notice in the local newspaper was to create a greater awareness of the project and to invite a broader spectrum of I&APs to register and be part of the process.

39 600 copies of the newspaper are distributed weekly.



Figure 8-1: Wording and size of notice placed

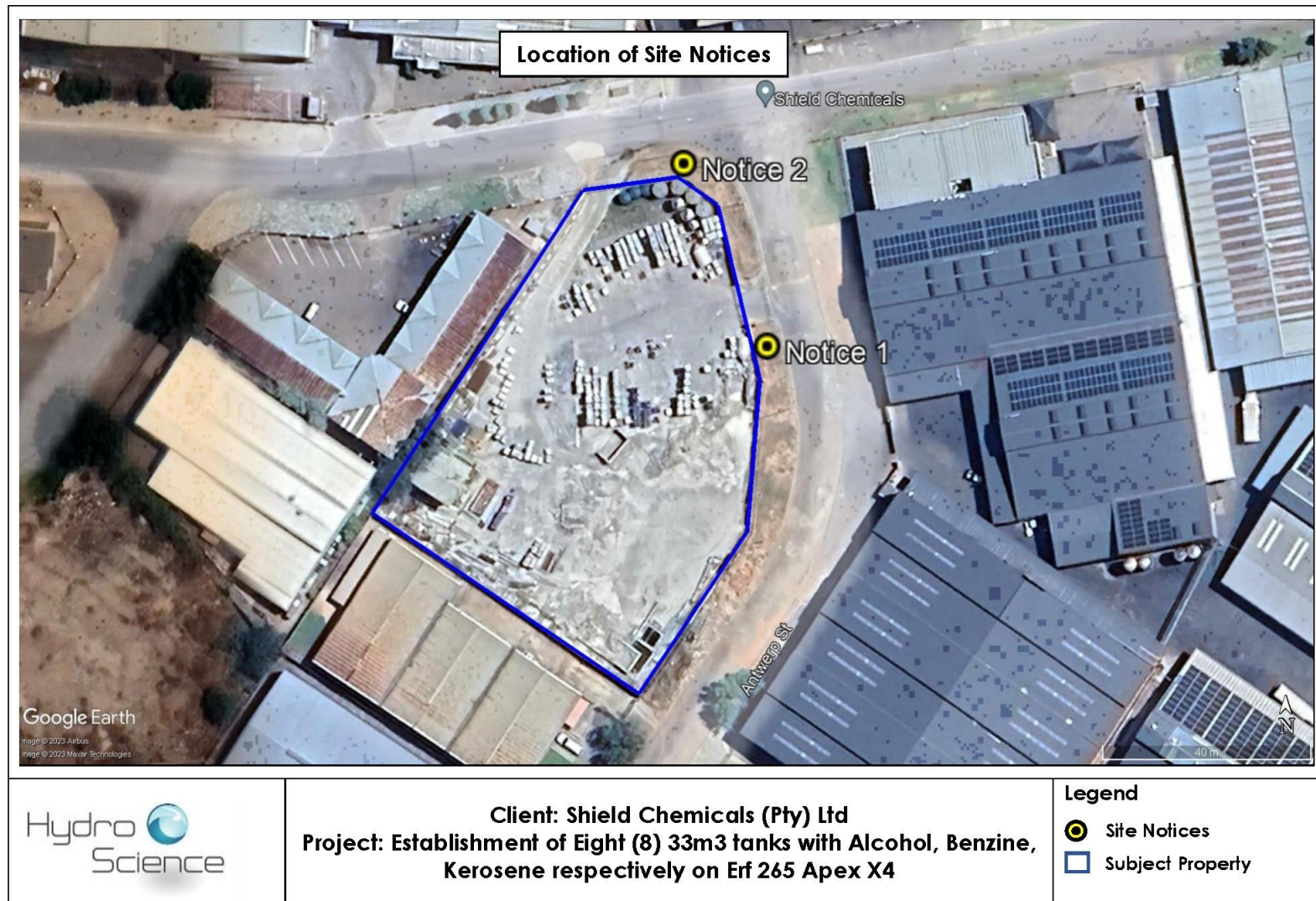


GPS Point: 26° 12' 32.1" South; 28° 19' 59.7" East on property fence facing Antwerp Street, next to gate



GPS Point: 26° 12' 31.0" South; 28° 19' 59.2" East on property fence facing London Street

**Figure 8-2: Photograph and GPS coordinate of notices placed on site**



**Figure 8-3: Aerial view of site notice location**





**Figure 8-4: Neighbouring properties notified**

## 8.5 Comments and Response Register

Any concerns that were raised by I&APs during the process were recorded and addressed by the EAP where possible (see Table 8-2). All proof of communication can be seen in Appendix E.

Furthermore, all registered I&APs who requested were given an opportunity to comment in writing (2 – 31 July 2023), on the draft report.

## 8.6 Report Submission

The draft report (this document) has been made available for public review electronically (link) from 2 – 31 July 2023. All I&APs have therefore been given an opportunity to comment on this document for a period of 30 days. All comments made were included in the comments and response register.

After submission of the draft report to the authorities (GDARD & CoE), during the public review period, these authorities were also afforded an opportunity to submit their comments to be addressed in the final report.

Thereafter, the final report (including all supporting documentation) will be submitted to GDARD for consideration. A decision will be provided by GDARD in terms of their considerations and findings and if authorised, conditions of the authorisation will be provided.

**Table 8-1: Register of I&APs**

<b>Neighbouring landowners, residents and businesses</b>		
<b>Street:</b>	<b>Owner:</b>	<b>Interaction:</b>
Apex Road	RKD Engineering Shield Chemicals (Pty) Ltd	E-mail: 2023-06-16
London Street	Apex Cordset Technologies (Pty) Ltd Platoon Lubricants Shield Chemicals (Pty) Ltd Dias Dos Xaropes Sinica Manufacturing Mawele Engineering Packman Prop Pty Ltd	E-mail: 2023-06-16
Naples Place	Altivex Mining Surelift Hoist Hub (RGM Cranes)	E-mail: 2023-06-16
Perth Street	Mia Familia Alloo Mohmed Iqbal Yakub The Glass Resorting Company Goldwins Enterprises Cc	E-mail: 2023-06-16
Antwerp Street	Milltech Engineering MFH Cylinders & Pumps Civtek (Pty) Ltd Shield Chemicals (Pty) Ltd	E-mail: 2023-06-16 / 19
<b>Authorities</b>		
Local	CoE (5 officials & ward councillor)	E-mail: 2023-06-19
Province	GDARD (2 officials & admin)	E-mail: 2023-06-19

**Table 8-2: Comments and responses**

Company / Entity / Person:	Date:	Comment:	Response:
Ward Councillor	2023-06-23	Meeting. <ul style="list-style-type: none"> <li>• Interested in the investment made.</li> <li>• Job creation is important.</li> </ul> Please provide information on the above.	R20 million investment and 18 new jobs
<b>Comments on draft report</b>			

## 9 IMPACT ASSESSMENT

### 9.1 Methodology

The significance of the adverse environmental impacts identified were assessed in terms of their:

- Duration;
- Extent;
- Probability; and
- Severity.

The above was used to determine the significance of an impact without any mitigation, as well as with mitigation.

**Nature of an impact:** An impact's nature can be positive (+) or negative (-).

**Consequence:** Considers duration, extent and severity

Consequence = duration + extent + severity

**Table 9-1: Environmental risk and impact assessment criteria**

<b>DURATION (D)</b>		
Immediate	Less than 1 month	1
Short-term	2 - 24 months	2
Life of project	Operational phase	3
Post-closure	Time of rehabilitation and for re-establishment of natural systems	4
Residual	A permanent impact (100 years or more)	5
<b>EXTENT (E)</b>		
Site specific	Site	1
Local	Site and immediate surroundings (property & neighbours)	2
Regional	Municipal area	3
Provincial	Provincial area	4
National	Republic of South Africa	5
<b>PROBABILITY (P)</b>		
Rare	<5% probability of occurrence – may occur in exceptional circumstances	1
Unlikely	15% - 6% probability of occurrence – could potentially occur at some time	2
Possible	45% - 16% chance of occurrence – might occur at some time	3
Likely	65% - 46% probability of occurrence – will probably occur in most circumstances	4
Almost Certain	90% - 66% probability of occurrence – is expected to occur	5
Definite	100% - will occur	6
<b>SEVERITY (S)</b>		
Catastrophic (critical)	Total change in area of direct impact, relocation not an option, death, toxic release off-site with detrimental effects, irreversible loss, huge financial loss	6

Significant (High)	> 70% change in area of direct impact due to loss of significant aspect, extensive injuries, long term loss in capabilities, off-site release to high extent, major financial implications	5
Serious	50 – 70% long-term loss, extensive rehabilitation / restoration / treatment required, high financial impact, still restricted in extent	4
Moderate (medium)	20 – 49% change, medium term loss in capabilities, rehabilitation / restoration / treatment required, on-site release with outside assistance, medium financial impact	3
Minor	10 – 19% change, short term impact that can be absorbed, on-site release, immediate containment, low financial implications	2
Insignificant (low)	< 10 % change in the area of impact, no financial implications, localised impact, a small percentage of population	1

[Duration (D) + Extent (E) + Severity (S)] x Probability (P) = Impact Significance (IS)

IMPACT SIGNIFICANCE (IS)		
Impact Significance	IS score range	Description
Low (L)	<15	The impact is minor or insubstantial; it is of little importance to any stakeholder and can easily be rectified.
Moderate Low (ML)	16 - 45	The impact is limited in extent, even if the intensity is major; the probability will only be likely, the impact will not have a significant impact considered in relation to the bigger picture; no major material effect on decisions and will require only small-scale management intervention bearing moderate costs.
Moderate High (MH)	46 - 70	The impact is significant to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
High (H)	71 <	The impact could render options controversial or the entire project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in project decision-making.

## 9.2 Impact Assessment Ratings

The impacts and associated significance ratings for the construction phase (Table 9-2) and the operational phase (Table 9-3) of the project were assessed. The no-go option (Table 9-4) was also assessed.

The planning phase activities are considered to be of a negligible impact significance as these typically involve drawings, desktop evaluations, documentation, approvals and site inspections.

The site is situated within a built-up, industrial area and construction involves the establishment of the eight (8) tanks and associated facilities.

**Table 9-2: Environmental Impacts and the Significance of the Impact during the Construction Phase**

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
		Nature of Impact (Positive/ Negative)	Spatial Scope/ Extent (5)	Duration (5)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scope/ Extent (5)	Duration (5)	Severity (6)	Consequence	Probability (6)	Significance (108)
Aspect	Description														
WATER	Hard surfaces will increase the runoff volumes and flow velocity of stormwater	N	2	2	4	8	5	40	N	2	2	3	7	2	14
	Pollution / contamination of surface water due to polluted / contaminated stormwater runoff from batching activities	N	2	2	4	8	5	40	N	2	2	4	8	2	16
	Pollution / contamination of stormwater due to leaks / spillages	N	2	2	4	8	5	40	N	2	2	4	8	2	16
AIR	Contamination from burning of waste, emissions from construction vehicle / machinery / equipment, dust, airborne litter	N	2	2	4	8	5	40	N	2	2	4	8	1	8
AESTHETICS	Waste accumulation, laydown areas, general activities	N	2	2	3	7	5	35	N	2	2	2	6	2	12
HEALTH	Workers not using / wearing correct PPE	N	1	2	5	8	5	40	N	1	2	5	8	1	8
	Incorrect disposal of waste	N	2	2	3	7	5	35	N	2	2	2	6	2	12
	Spreading of diseases resulting from increased anthropogenic activity	N	2	2	5	9	5	45	N	2	2	5	9	2	18
NOISE	Noise from construction vehicles in and out of the facility, machinery and equipment	N	2	2	3	7	5	35	N	2	2	3	7	3	21

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scope/ Extent (5)	Duration (5)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scope/ Extent (5)	Duration (5)	Severity (6)	Consequence	Probability (6)	Significance (108)
TRAFFIC	Movement of construction vehicles in and out of the facility	N	2	2	3	7	5	35	N	3	2	2	7	3	21
	Road closures and traffic disruption during installation of tanks	N	3	2	4	9	5	45	N	3	2	2	7	3	21
	Congestion due to increase in traffic	N	2	2	4	8	5	40	N	2	2	2	6	3	18
SAFETY & SECURITY	Labour disputes or strikes	N	1	2	3	6	5	30	N	1	2	3	6	2	12
	Construction vehicles and materials at risk of theft or vandalism	N	1	2	3	6	5	30	N	1	2	4	7	2	14
	Using inappropriate working methods or equipment	N	1	2	4	7	5	35	N	1	2	4	7	1	7
	Workers not wearing the correct PPE	N	1	2	4	7	5	35	N	1	2	4	7	1	7
SOCIOECONOMIC	Deterioration of roads surrounding the facility	N	2	2	4	8	5	40	N	2	2	3	7	4	28
	Job creation for construction workers	Positive							Positive						



**Table 9-3: Environmental Impacts and the Significance of the Impact during the Operational Phase**

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/Negative)	Spatial Scope/Extent (5)	Duration (5)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scope/Extent (5)	Duration (5)	Severity (6)	Consequence	Probability (6)	Significance (108)
WATER	Hard surfaces will increase the runoff volumes and flow velocity of stormwater	N	2	5	4	11	5	55	N	2	3	3	8	2	16
	Pollution / contamination of surface water due to polluted / contaminated stormwater runoff	N	2	3	5	10	5	50	N	2	3	5	10	2	20
	Pollution / contamination of stormwater due to leaks / spillages	N	2	3	5	10	5	50	N	2	3	5	10	2	20
AIR	Emissions / vapour from vehicles / tanks	N	2	3	4	9	5	45	N	2	3	4	9	1	9
AESTHETICS	Further loss in aesthetic quality	N	2	3	3	8	6	48	N	2	3	2	7	2	14
HEALTH	Workers not using / wearing correct PPE	N	1	3	5	9	5	45	N	1	3	5	9	1	9
	Spreading of diseases resulting from increased anthropogenic activity	N	2	3	5	10	5	50	N	2	3	5	10	2	20
NOISE	Noise from trucks accessing the facility	N	2	3	4	9	6	54	N	2	3	4	9	3	27
TRAFFIC	Movement of vehicles in and out of the facility – for delivery of chemicals	N	3	3	4	10	5	50	N	3	3	2	8	3	24
	Congestion due to increase in traffic	N	2	3	4	9	5	45	N	2	3	2	7	3	21
SAFETY & SECURITY	Labour disputes or strikes	N	1	3	3	7	5	35	N	1	3	3	7	2	14
	Safety risk due to fires / explosion	N	2	3	6	11	6	66	N	2	3	4	9	2	18
	Using inappropriate working methods or equipment	N	1	3	4	8	5	40	N	1	3	4	8	1	8

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (5)	Duration (5)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (5)	Duration (5)	Severity (6)	Consequence	Probability (6)	Significance (108)
	Workers not wearing the correct PPE	N	1	3	4	8	5	40	N	1	3	4	8	1	8
SOCIOECONOMIC	Deterioration of roads surrounding the facility	N	2	3	4	9	6	54	N	2	3	3	8	4	24
	Job creation	Positive							Positive						
	Income generated from operations will boost regional and local economy and present knock-on opportunities	Positive							Positive						

**Table 9-4: No-Go - Environmental Impacts and the Significance of the Impact – mitigation is the project proceeding**

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
		Nature of Impact (Positive/Negative)	Spatial Scape/Extent (5)	Duration (5)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/Extent (5)	Duration (5)	Severity (6)	Consequence	Probability (6)	Significance (108)
Aspect	Description														
<b>AESTHETICS</b>	Facility being neglected or vandalised	N	2	4	2	8	6	48	N	2	4	2	8	1	8
<b>SAFETY &amp; SECURITY</b>	Theft	N	1	2	4	7	5	35	N	1	2	4	7	2	14
	Property being neglected or vandalised, increasing criminal activities	N	3	4	4	11	5	55	N	3	4	4	11	2	22
<b>SOCIOECONOMIC</b>	Loss of job opportunities	N	2	5	3	10	5	50	N	2	5	3	10	2	20
	Impact on regional and local economy due to loss of income and knock on opportunities	N	3	5	4	12	5	60	N	3	5	4	12	2	24
	Safety and security	N	2	5	4	11	5	55	N	2	5	4	11	2	22

## 10 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

### 10.1 Alterations to EMPR

As EMPRs should remain dynamic and flexible, certain conditions may require the EMPr to be revised. These conditions may include the following:

- Changes in legislation;
- Occurrence of unanticipated impacts or impacts of greater significance, intensity and extent than predicted;
- Inadequate mitigation, i.e. where the level of an environmental parameter is not conforming to the required level despite the implementation of measures; and
- Secondary impacts which occur as a result of the mitigation.

### 10.2 Responsibility

The Applicant, Shield Chemicals (Pty) Ltd, will be responsible for the implementation of all mitigation and management measures as well as the compliance with this EMPr and any license and authorisation conditions. The Applicant will delegate its responsibilities to an Environmental Officer (EO). Each contractor involved in the project will comply with the EMPr.

Mr Jayson Clark	Director	083 442 0450
Mr Richard Mcdonald	Factory Manager	061 601 1574
To be appointed	Environmental Officer (EO)	
AJ de Wet	Main contractor - GPS	082 326 8682

The EO will be suitably qualified to perform the necessary tasks and will be appointed at a level such that he/she can interact effectively with site contractors, labourers and the public.

The EO will be required to perform the following tasks:

- Monitoring and execution of the EMPr by maintaining a permanent presence on site;
- Inspect the site as required to ensure adherence to the management actions of the EMPr and authorisations and licences (internal audits);
- Complete site inspection forms on a regular basis (weekly);
- Provide inputs to the regular (monthly) environment report to be prepared;
- Liaise with contractors on issues relating to implementation of, and compliance with, the EMPr and authorisations/licences;
- Maintain a record of environmental incidents (spills / leaks, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; and
- Maintain a public complaints register in which all complaints are recorded.

The conditions of the authorisations, licences and EMPr will be brought to the attention of all persons (employees, workers, consultants, contractors etc.) associated with the undertaking of the activities and the applicant will take such measures that are necessary to bind such persons to the conditions thereof (contracts with penalties for non-compliances).

The applicant can further enforce this by running workshops with all employees in order to raise environmental awareness. These workshops should cover aspects such as fire prevention, strict use of ablution facilities, good housekeeping, cleaning of spillages and general duty of care. A pamphlet can be handed out on socially acceptable and environmentally responsible conduct such as water conservation, waste management etc.

### **10.3 Activities causing potential impacts**

The following activities could cause potential impacts if not managed properly or if no mitigation measures are implemented:

- Establishment of the iso-tanks and associated facilities;
- Movement of vehicles - delivery of the chemicals (alcohol, benzine and kerosene) to the facility;
- Maintenance of vehicles/equipment;
- Incorrect handling and storage of hazardous chemical substances (HCS);
- Poor waste management practices;
- Ineffective stormwater management;
- Random events such as fire or explosion.

### **10.4 Management Measures**

Dedicated measures have been identified to manage the potential impacts identified above (Section 10.3). The purpose of the EMP is to ensure that undue or reasonably avoidable adverse impacts of the project are prevented; that impacts which cannot be prevented are managed to reduce their significance; and that the positive benefits of the project are enhanced.

The applicant, Shield Chemicals (Pty) Ltd, is responsible for the implementation of recommendations and mitigation / management measures and HydroScience cannot and will not take responsibility for the actions of the applicant or lack thereof.

**Table 10-1: Potential impacts and proposed management actions: Construction and Operational Phase**

**1. Establishment of Facilities (construction activity only)**

<b>Management Outcome:</b> Minimise impact to the environment and ensure safety during the establishment of the eight (8) storage tanks and associated facilities.						
<b>Potential Impacts:</b>						
<ul style="list-style-type: none"> <li>Traffic congestion</li> <li>Pollution of stormwater due to spillages from batching activities or vehicles</li> </ul>						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> <li>Risk assessments must be done prior to the establishment of the tanks in order to identify and mitigate all potential environmental, health and safety risks;</li> <li>All workers must be suitably qualified;</li> <li>Sufficient planning is required in terms of logistics and space constraints for when the tanks are delivered to the site;</li> <li>Suitable traffic accommodation is required during construction and delivery of tanks;</li> <li>Members of the public, neighbours and relevant authorities need to be notified of any road closures that may be required;</li> <li>Operating procedures for the facility must be in place prior to the establishment and must be kept up to date to include preventative measures against the uncontrolled release of HCS from road tankers and storage tanks;</li> <li>All operating personnel at the facility as well those handling or delivering chemicals must be made aware and kept aware of the dangers involving the respective chemicals (Safety Data Sheets);</li> <li>The alcohol, benzene and kerosene iso-tanks must be situated on a smooth impermeable surface (concrete) with a permanent</li> </ul>	Applicant	Procedures  Risk assessments	Planning to be done prior to establishment of tanks	EO	During establishment of tanks  Follow-up inspection and close-out report after completion of construction phase.	Inspection report  Photos

<p>bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks (110% statutory requirement plus an allowance for rainfall);</p> <ul style="list-style-type: none"> <li>• The floor of the bund must be sloped, draining to a sump / separator;</li> <li>• Sufficient fire control measures must be in place and will be thermally isolated according to SANS 10131:2003;</li> <li>• Delivery of chemicals must be planned and transfer may only take place within designated areas where strict control measures are in place;</li> <li>• Runoff from the storage area must be strictly controlled, and contaminated water must be collected and stored (bunds) and either treated (via cement drains to separator) or disposed of off-site, at a location legally approved to accept the wastewater and approved by the Municipality (keep safe disposal certificate);</li> <li>• During construction of the bund walls, runoff from the mixing / batching areas must be strictly controlled and not allowed to enter stormwater drains;</li> <li>• Any excess concrete from the establishment process should be discarded as building rubble;</li> <li>• The storage and handling of hazardous chemicals during construction must be in accordance with Section 6. Hazardous Chemical Substances (HCS) under the Operation Phase of this EMPr;</li> <li>• Adequate ablution facilities must be provided for construction workers.</li> </ul>						
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## 2. Environmental Awareness Training

<b>Management Outcome:</b> All on-site staff are aware of and understand the individual responsibilities in terms of this EMPr.						
<b>Impact Management Actions</b>	<b>Implementation</b>			<b>Monitoring</b>		
	<b>Responsible person</b>	<b>Method of Implementation</b>	<b>Timeframe for Implementation</b>	<b>Responsible person</b>	<b>Frequency</b>	<b>Evidence of Compliance</b>
<ul style="list-style-type: none"> <li>All staff must receive environmental awareness training;</li> <li>All new staff coming onto the site must receive environmental awareness training;</li> <li>All staff must be made aware of the conditions and controls within the EMPr and other applicable licenses / permits;</li> <li>The responsible operator of vehicle / equipment / machinery must have the required training to make use of the spill kit in emergency situations;</li> <li>All staff must be made aware of their individual roles and responsibilities in achieving compliance with the environmental authorisation and EMPr and other license conditions;</li> <li>The Applicant must erect and maintain information posters at key locations on site;</li> <li>Environmental awareness training should include the following:               <ol style="list-style-type: none"> <li>Description of significant environmental impacts, actual or potential, related to their work activities;</li> <li>Mitigation measures to be implemented when carrying out specific activities;</li> <li>Emergency preparedness and response procedures.;</li> </ol> </li> <li>A record of all environmental awareness training courses undertaken as part of the EMPr must be available;</li> <li>An attendance register of all staff that received environmental awareness training must be kept;</li> <li>Course material must be available and presented in all appropriate languages.</li> </ul>	Applicant	Presentations should be as visual as possible - it can include posters, power point presentations, videos or any other material that will assist in the training.	Environmental awareness training must be done before the establishment of facilities and as soon as new staff members start on site.  Environmental posters must be on site at all times and must be visible / legible.	EO	Monthly reporting	Photos Attendance Register Training material



### 3. Waste Management

<b>Management Outcome:</b> Wastes are appropriately stored, handled and safely disposed of at a licensed waste disposal facility.						
<b>Potential Impacts:</b>						
<ul style="list-style-type: none"> <li>• Pollution of stormwater due to spillages associated with dumping of solid waste</li> <li>• Pests and odours</li> </ul>						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<u>General:</u> <ul style="list-style-type: none"> <li>• All measures regarding waste management must be undertaken using an integrated waste management approach.</li> <li>• A suitable position away from stormwater drains and demarcated for waste collection and storage must be allocated.</li> <li>• Waste areas to be screened where possible.</li> </ul> <u>Prevention of waste:</u> <ul style="list-style-type: none"> <li>• Material storage areas should be safe, secure and weather-proof to prevent damage to material (resulting in waste generation) and theft. Area with impermeable base and cover / roof or in sealed containers.</li> <li>• Due to the movement of people, there will be litter production and higher probability of littering. Therefore, there should be on-site signs raising the awareness of the impacts of littering on the natural environment and weekly litter patrols to collect litter.</li> <li>• Train staff/contractors to operate in an environmentally responsible manner (closing of taps for water conservation, reporting spills, no littering etc.).</li> <li>• Maintenance of vehicles, machinery and/or equipment, may only take place in dedicated workshop areas or where drip trays and / or absorbent mats will be placed underneath the</li> </ul>	Applicant	Waste management plan	Before establishment of tanks and during operation	EO	Weekly inspections Monthly Reporting	Inspection report Photos Safe disposal certificates

<p>vehicles / machinery / equipment where maintenance work is conducted to prevent grease/oil spillages.</p> <p><u>Reduction / minimisation of waste:</u></p> <ul style="list-style-type: none"> <li>• Reduce waste quantities and disposal costs through a reduction in the materials ordered.</li> <li>• “Take-back” schemes – setting up schemes with suppliers to take back surplus materials.</li> <li>• Engage with the supply chain to supply products and materials that use minimal packaging.</li> </ul> <p><u>Reuse / recycling of waste:</u></p> <ul style="list-style-type: none"> <li>• Separate / sort / segregate waste for collection and recycling - make arrangements with recycling contractors to provide clearly marked bins for material separation / sorting. Make sure that workers are aware of the placement of the bins and their responsibility to separate / sort materials.</li> <li>• Though no special disposal methods are required for non-hazardous waste, non-biodegradable refuse such as glass bottles, plastic bags, etc., must be stored in suitable containers to allow for recycling and emptied on an as-required basis for recycling purposes during the working phase.</li> <li>• Segregate packaging for reuse.</li> </ul> <p><u>Waste handling on site:</u></p> <ul style="list-style-type: none"> <li>• Separate / segregate / sort waste into different containers.</li> <li>• Collect waste in suitable containers (drums / skips / bins on site).</li> <li>• Waste containers should be marked, or colour coded to indicate which types of waste can be disposed to it. Staff to be trained in this regard to segregate waste.</li> <li>• Ensure sufficient containers are available for storage of waste prior to removal off site to prevent overflow and littering on the site and surroundings.</li> <li>• Ensure no litter, refuse, waste and rubble generated on the premises will be placed, dumped or deposited on this site, adjacent or surrounding properties.</li> <li>• The waste collection and storage site must be maintained in a clean and orderly fashion.</li> </ul>						
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<ul style="list-style-type: none"> <li>Waste must be disposed, as soon as possible to a municipal transfer station, skip or on a licensed landfill site. Waste must not be allowed to stand on site to decay, resulting in malodours and attracting pests. Empty containers regularly and waste should not be stored on site in excess of 30 days.</li> <li>Waste collection bins with secure covers (scavenger and weatherproof) must be provided to prevent fauna entering the container. Waste containers must not be left standing without a cover as this may attract fauna to inspect the skip and possibly cause death or injury to the fauna.</li> <li>Waste may not be burnt or buried on site.</li> <li>Hazardous waste must be stored separately from general waste on an impermeable surface within a bund wall and disposed of at a licensed hazardous waste site if not recycled.</li> <li>Waste storage must be according to the Norms and Standards for waste storage (GNR 926 of 29 November 2013).</li> </ul> <p><u>Waste removal &amp; disposal:</u></p> <ul style="list-style-type: none"> <li>Companies that transport the waste must be registered / licensed to do so.</li> <li>Site must be easily accessible for trucks picking up or dropping off the skips.</li> <li>Remove waste from site for recycling or disposal to the local licensed municipal landfill / waste management facility on a regular basis (at least weekly or when container is full).</li> <li>No burning of waste.</li> <li>Any hazardous waste will be stored and handled according to the relevant legislation and only disposed to licensed disposal facilities.</li> <li>Dispose waste according to the National Environmental Management: Waste Act (Act 59 of 2008) and</li> </ul> <p><u>Documentation:</u></p> <ul style="list-style-type: none"> <li>Report on the quantities of different waste streams managed (landfill, reuse, recycling, energy recovery).</li> <li>Ensure copies of all waste manifests (safe disposal certificates) are kept, showing responsible handling, transport and disposal by a reputable waste handler.</li> </ul>						
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#### 4. Aesthetics

<b>Management Outcome:</b> Minimise further detrimental impacts on the visual/scenic quality of the area and retain sense of place.						
<b>Potential Impacts:</b>						
<ul style="list-style-type: none"> <li>Loss of or alteration to key elements / features /characteristics of the baseline aesthetics</li> <li>Low scenic quality</li> </ul>						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> <li>Good housekeeping must be implemented;</li> <li>Proper waste management is essential - if not done properly, can contribute to an untidy and aesthetically unpleasing facility;</li> <li>Under no circumstances should waste be stored on the pavements or anywhere outside the facility;</li> <li>Vehicles should not be allowed to park and accumulate outside on the road;</li> <li>Where possible, shade netting should be used to temporarily screen areas which may be visible and unsightly to neighbours.</li> </ul>	Applicant	Site inspection or walkabout	Before establishment of tanks and during operation	EO	Weekly inspections	Inspection report Photos

## 5. Noise

<b>Management Outcome:</b> To prevent unnecessary noise to the environment and surrounding community by ensuring that noise from activities is mitigated.						
<b>Potential Impacts:</b>						
<ul style="list-style-type: none"> <li>Nuisance for residents or people at work</li> <li>Health risk</li> </ul>						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> <li>The applicant is to abide by the by-laws of the local municipality relating to noise control.</li> <li>Maintain a complaints register and ensure that all complaints relating to noise are effectively addressed;</li> <li>Ear plugs are to be worn by workers as and when required.</li> <li>Reduce noise from vehicles by:               <ul style="list-style-type: none"> <li>turning off engines when they are not in use;</li> <li>checking the brakes are properly adjusted and don't squeal;</li> <li>no revving the engine unnecessarily;</li> <li>only using the horn in emergencies; and</li> <li>replacing exhaust systems as soon as they become noisy.</li> </ul> </li> </ul>	Applicant	Complaints register Inspections	Before establishment of tanks and during operation	EO	Weekly Inspections	Photos Documents Emails Complaints register

## 6. Traffic Management

<b>Management Outcome:</b> Minimise impact to the environment through the planned and restricted movement of vehicles to/on site.						
<b>Potential Impacts:</b>						
<ul style="list-style-type: none"> <li>Degradation of existing roads (socio-economic impact on other road users)</li> <li>Traffic congestion</li> <li>Accidents</li> </ul>						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> <li>Members of the public, neighbours and relevant authorities need to be notified of any road closures that may be required during temporary activities such as deliveries;</li> <li>Designated entrance and exit for vehicles/trucks to be included in site development plan (already included);</li> <li>Dedicated and planned transport routes and times to be used as far as possible;</li> <li>Trucks/vehicles to be properly maintained to minimise risk of leaks or failures;</li> <li>Adequate space must be provided for road tankers to park safely during delivery of chemicals;</li> <li>Road tankers must never reverse or manoeuvre on the site;</li> <li>Parking outside the premises should not be allowed.</li> </ul>	Applicant	Site development plan	Before establishment of tanks and during operation	EO	Weekly inspections	Inspection report Photos

## 7. Storm and Waste Water Management

**Management Outcome:** An effective system of stormwater run-off control is implemented, where required and impacts to the environment caused by stormwater and waste water discharges during activities are avoided.

**Potential Impacts:**

- Pollution of surface water (through accumulation and run-off)

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> <li>• Concrete surface with bund walls around storage tanks and appropriate pollution control necessary to prevent discharge of water containing polluting matter;</li> <li>• Runoff from the facility must be strictly controlled, and contaminated water must be collected and stored (bunds) and either treated (via cement drains to water and oil separation plant) or disposed of off-site, at a location legally approved to accept the wastewater and approved by the Municipality (keep safe disposal certificate);</li> <li>• Hydrocarbon traps must be implemented as part of the stormwater management system;</li> <li>• All spillages of hydrocarbons onto surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriately licensed waste disposal facility such as Holfontein (keep safe disposal certificate).</li> </ul>	Applicant	Stormwater Management Plan	Before establishment of tanks and during operation	EO	Weekly inspections	Inspection report Photos

### 8. Safety of the Public and Security

<b>Management Outcome:</b> All precautions are taken where possible to minimise the risk of injury, harm, theft or complaints.						
<b>Potential Impacts:</b>						
<ul style="list-style-type: none"> <li>• Damage to property</li> <li>• Injuries</li> <li>• Theft</li> <li>• Vehicle accidents</li> <li>• Traffic congestions becoming a nuisance</li> </ul>						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> <li>• Demarcate and restrict public access to the working areas (fencing, locked gates, access control already in place);</li> <li>• Ensure that there is signage all over the site that warns the public of activities and associated dangers/risks;</li> <li>• Ensure that there are sufficient road signs so that the public is aware of heavy /slow moving vehicles moving around;</li> <li>• Adequate protective measures must be implemented to prevent unauthorised access to areas and climbing of structures;</li> <li>• Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.</li> <li>• The facility must remain under safety and security access control for 24 hours per day.</li> </ul>	Applicant	Site inspection or walkabout  Complaints register	Before establishment of tanks and during operation	EO	Weekly inspections	Inspection report  Photos



### 9. Human Health

<b>Management Outcome:</b> Prevention measures are applied to minimise the impacts of alcohol, benzene and kerosene on human health.						
<b>Potential Impacts:</b>						
<ul style="list-style-type: none"> <li>• Skin irritation</li> <li>• Serious eye irritation</li> <li>• Respiratory irritation, drowsiness or dizziness</li> <li>• May cause genetic defects, cancer, damage to organs (haematopoietic system) through prolonged or repeated exposure</li> </ul>						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> <li>• All employees working with the chemicals must be trained in the safe use of the substance and according to the respective material safety data sheet (MSDS);</li> <li>• Visitors to the facility must also be made aware of the risks by means of an induction before entering the site;</li> <li>• Appropriate personal protective equipment (PPE) must be made available to employees and must be applicable to the area / work to be done (gloves, protective clothing, eye protection, face protection, respiratory protection);</li> <li>• Health impacts should be included in risk assessments and sufficient planning is required in terms of possible medical emergencies.</li> </ul>	Applicant	Training and awareness Risk assessments Induction	Before establishment of tanks and during operation	EO	On-going	Inspection reports Medicals

### 10. Emergency Procedures

<b>Management Outcome:</b> Emergency procedures are in place to enable a rapid and effective response to all types of emergencies.						
<b>Impact Management Actions</b>	<b>Implementation</b>			<b>Monitoring</b>		
	<b>Responsible person</b>	<b>Method of Implementation</b>	<b>Timeframe for Implementation</b>	<b>Responsible person</b>	<b>Frequency</b>	<b>Evidence of Compliance</b>
<ul style="list-style-type: none"> <li>• Compile an Emergency Response Action Plan (ERAP) prior to the establishment of the tanks;</li> <li>• The ERAP must deal with accidents, potential spillages, fires and explosion in line with relevant legislation;</li> <li>• The ERAP must include all activities which may present risks, including the delivery (handling) and bulk storage of alcohol, benzene and kerosene.</li> <li>• All staff must be made aware of emergency procedures as part of environmental awareness training;</li> <li>• The relevant local authority's fire department must be made aware of a fire as soon as it starts;</li> <li>• The ERAP must be updated as and when any contact details change;</li> <li>• In the event of emergency, mitigation measures to contain the spill or leak must be implemented as per the section below - Hazardous Substances.</li> </ul>	Applicant	Notice boards  List of emergency numbers  ERAP  Training and awareness	Before establishment of tanks and during operation	EO	On-going	Photos  Documentation  Incident reports

### 11. Hazardous Chemical Substances (HCS)

<b>Management Outcome:</b> Safe storage, handling, use and disposal of HCS.						
<b>Potential Impacts:</b>						
<ul style="list-style-type: none"> <li>Contamination of stormwater due to leaks / spills</li> <li>Health and safety impacts due to incorrect handling and storage methods</li> <li>Pollution due to incorrect disposal methods</li> <li>Fire risk</li> </ul>						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> <li>The storage and use of hazardous substances to be minimised and substituted with non-hazardous and non-toxic alternatives where possible;</li> <li>All hazardous substances will be stored in suitable containers as defined in the legislation and Material Safety Data Sheet (MSDS);</li> <li>Containers must be clearly marked to indicate contents, quantities and safety requirements;</li> <li>All storage areas will be bunded. The bunded area will be of sufficient capacity to contain a spill / leak from the stored containers (110% of container capacity);</li> <li>An Alphabetical HCS control sheet will be drawn up and kept up to date on a continuous basis;</li> <li>All HCS that will be used on site must be accompanied by their respective MSDS;</li> <li>All employees working with HCS will be trained in the safe use of the substance and according to the safety data sheet;</li> <li>Employees handling HCS must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment (PPE) must be made available;</li> </ul>	Applicant	Training and awareness  Risk assessments  Inspections	Planning done prior to establishment of tanks and during operation	EO	Weekly Inspections	Inspection report  Photos

<ul style="list-style-type: none"> <li>• All empty dirty drums must be stored on a drip tray or within a bunded area;</li> <li>• No unauthorised access into the HCS's storage areas shall be permitted;</li> <li>• No smoking must be allowed within the vicinity of the HCS storage areas;</li> <li>• Adequate fire-fighting equipment must be made available at all HCS storage areas;</li> <li>• An appropriately sized spill kit relevant to the scale of the activity involving the use of HCS must be kept on-site and available at all times;</li> <li>• The responsible operator must have the required training to make use of the spill kit in emergency situations;</li> <li>• In the event of a spill, contaminated absorbent material (from spill kit) must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act (Act 59 of 2008) and the Norms and Standards for waste storage (GNR 926 of 29 November 2013).</li> </ul>						
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## 12. Emissions

**Management Outcome:** Prevention measures are applied to minimise the generation of fumes from vehicle / machinery exhausts and prevent vapour leaks from tanks.

**Potential Impacts:**

- Nuisance for residents or people at work
- Health risk – if inhaled, the vapour from the chemicals may cause respiratory irritation, drowsiness or dizziness. Prolonged or repeated exposure may cause damage to organs.
- Risk of explosion – Alcohol, benzene and kerosene are all highly flammable. Due to high vapour density, flammable / toxic vapours may accumulate in low lying areas, pits, drains, or trenches. Vapours may accumulate in low lying areas and reach ignitable concentrations.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> <li>• All vehicles and machinery / equipment used on, or entering the facility, must be maintained and serviced regularly to ensure that they do not emit excessive emissions;</li> <li>• Bulk tanks and all pipelines must be protected against corrosion to prevent gas leaks;</li> <li>• Road tankers must be inspected when they enter the facility, for possible overheated tyres, smell of heated rubber, leaks or other defects that can place the site at risk;</li> <li>• Avoid diesel spills or inappropriate handling of diesel or chemicals;</li> <li>• Storage tanks for any HCS should meet the necessary storage requirements, and should be regularly inspected for any defects which may cause leaks or gases to escape;</li> <li>• Workers to wear appropriate PPE for area / work (respiratory protection);</li> <li>• Maintain a complaints register and ensure that all complaints relating to emissions are effectively addressed.</li> </ul>	Applicant	Complaints register Inspections – leak detection	Before establishment of tanks and during operation	EO	Weekly Inspections	Inspections Photos Complaints register

### 13. Fire prevention

**Management Outcome:** Prevention of uncontrollable fires and explosion due to flammable liquids.

**Potential Impacts:**

- Possible injuries
- Air pollution due to smoke
- Smoke can be a health risk
- Damage to property and neighbours
- Explosion - Alcohol, benzene and kerosene are all highly flammable both in liquid and vapour form.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of Implementation	Timeframe for Implementation	Responsible person	Frequency	Evidence of Compliance
<ul style="list-style-type: none"> <li>• Designated smoking areas must be allocated;</li> <li>• Bins must be provided for cigarette buds at the designated smoking area;</li> <li>• All possible ignition sources at the facility must be eliminated;</li> <li>• Take precautionary measures against static discharge;</li> <li>• No waste, especially flammable waste, must be stored close to the tanks or road tankers;</li> <li>• The ERAP must provide effective response methods to deal with fires or explosions;</li> <li>• Fire-fighting equipment must be available on all vehicles located on site;</li> <li>• Fire-fighting equipment must always be available during deliveries of chemicals to the site;</li> <li>• Adequate fire extinguishers and water storage must be available on site - water is effective in cooling vessels during a fire and in helping to keep the temperature of tanks and their contents below critical levels. Water spray can be useful in protecting fire-fighters attempting to close supply valves in heat-affected areas and in dispersing vapour;</li> </ul>	Applicant	Fire-fighting equipment Training and awareness ERAP	Before establishment of tanks and during operation	EO	Weekly Inspections	Inspection report Photos

<ul style="list-style-type: none"> <li>• In the event of a fire, flash back is possible over considerable distance. Do not allow run-off from fire-fighting to enter stormwater drains.</li> <li>• The local Fire Protection Agency must be informed of activities (CoE Emergency Management Service);</li> <li>• Contact numbers for the emergency services must be communicated in environmental awareness training, toolbox talks and displayed at a central location on site;</li> <li>• CoE (EMS) certificate of registration for flammable substances to be displayed.</li> </ul>						
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## 11 CONCLUSIONS & RECOMMENDATIONS

### 11.1 EAP Opinion

It is the opinion of the EAP that the project may continue from an environmental perspective based on the following:

- Legal:
  - The applicant is operating an existing LPG facility on the site.
- Socio-economic motivation:
  - R20 million will be invested by the applicant in terms of this project.
  - 18 jobs are created by this project on top of the existing 400 jobs provided by Shield Chemicals (Pty) Ltd within its existing operations.
  - The business therefore will support 418 families directly as well as other businesses and their workers who are suppliers of this facility.
  - The chemical storage and blending facility is required to support the existing operations.
- Biophysical environment:
  - LPG is environmentally friendly as it is a cleaner energy source:
    - It has minimal sulphur content.
    - It has the lowest black carbon emissions – low carbon alternative to conventional fossil fuels.
    - It is clean burning and emits 33% less CO<sub>2</sub> (carbon dioxide) than coal and 15% less than heating oil – the lowest CO<sub>2</sub> emissions amongst all refined fuels.
    - It has a low particle emission.
    - It has low NO<sub>x</sub> emissions.
  - Although the DFFE screening tool shows that the site is Very High in terms of sensitivity for the Terrestrial Biodiversity, Palaeontology and Archeological and Cultural Heritage Themes, this is not the case based on site assessments.
  - Services such as electricity, water supply, solid waste removal and sewage management are already in place.
  - The site is void of vegetation.
- Land use:
  - The site is situated within an industrial area.
  - The site is an operational LPG site.
  - The property falls within the Gauteng EMF Zone 2.
- During the consultation process, nobody raised any concerns or objections.
- All potentially adverse impacts identified in Section 9 could be mitigated through management measures as described in Section 10 (EMPr) to a low to moderate low significance.

### 11.2 Conditions

- The project can be authorised only with compliance to the EMPr (Section 10).



## 12 REFERENCES

- Archaetnos Culture & Cultural Resources Consultants, 2023. Letter for HIA exemption request: Proposed expansion to 130m<sup>3</sup> liquid petroleum gas (LPG) storage tanks on Erf 179 Apex x3, 18 Apex road west, as well as the establishment of eight (8) 33m<sup>3</sup> tanks with alcohol, benzine and kerosene respectively on Erven 265 & 266 apex x4, corner London and Antwerp streets, Benoni, City of Ekurhuleni, Gauteng Province. 21 June 2023
- City of Ekurhuleni (CoE). 2022/23 – 2026/27 Integrated Development Plan (IDP) for the City of Ekurhuleni
- City of Ekurhuleni (CoE). Regional Spatial Development Framework (SDF): Region D
- Durand, JF, 2023. Development of Fuel and Chemical Facilities for Shield Chemicals in Benoni, Gauteng, Gauteng. Palaeontological impact assessment. 11 June 2023.
- The Biodiversity Company (TBC), 2023. Shield Chemicals GPS0026 Fuel Site, 18 Apex Road – Terrestrial Compliance Statement Benoni, City of Ekurhuleni, Gauteng. June 2023.