mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

FOR LISTED ACTIVITIES ASSOCIATED WITH MINING RIGHTS AND / OR BULK SAMPLING ACTIVITIES INCLUDING TRENCHING IN CASES OF ALLUVIAL DIAMOND PROSPECTING

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT:	**New Kleinfontein Goldmine (Proprietary) Limited**
TEL NO:	**087 255 6900**
POSTAL ADDRESS:	**Postnet Suite 415, Private Bag X75, Bryanston 2021**
PHYSICAL ADDRESS:	**Corner, Cloverfield & Outeniqua Road, Eastvale, Springs, 1560**
REFERENCE:	**GP 30/5/1/2/2 (182) MR**

NOVEMBER 2022

GOLD ONE
MODDER EAST OPERATIONS

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FIGURES

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APPENDICES

ACRONYMS

AEL	Atmospheric Emission Licence
AIP	Alien Invasive Plants
AQI	Air Quality Index
AQMP	Air Quality Management Plans
AQMS	Air Quality Monitoring Station
BDL	Below Detection Limit
BID	Background Information Document
C-Plan	Conservation Plan (Gauteng)
CA	Competent Authority
CAA	Civil Aviation Act (No 13 of 2009)
CARA	Conservation of Agricultural Resources Act (No. 43 of 1983)
CBA	Critical Biodiversity Area
COGTA	Department of Cooperative Governance and Traditional Affairs
CR	Critically Endangered
CRR	Comments and Response Report
CoE	City of Ekurhuleni
D	Duration
DBA	Dam Break Analysis
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries
DMRE	Department of Mineral Resources and Energy
DRDLR	Department of Rural Development and Land Reform
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EARES	Enviro-Acoustic Research
EAP	Environmental Assessment Practitioner
EC	Electrical Conductivity
ECO	Environmental Compliance Officer
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EN	Endangered
EMF	Environmental Management Framework
EMPr	Environmental Management Programme
ER	Exploration Right
ERB	East Rand Basin
ESA	Ecological Support Area
ESR	Environmental Screening Report
GA	General Authorisation
Ga	Giga-annum / billion years
GDARD	Gauteng Department of Agriculture and Rural Development
GDED	Gauteng Department of Economic Development
GDP	Gross Domestic Product
GISTM	Global Industry Standard on Tailings Management
GPDRT	Gauteng Provincial Department of Roads and Transport

GPEMF	Gauteng Provincial Environmental Management Framework
GNR	Government Notice Regulation
HDPE	High-density polyethylene
HIA	Heritage Impact Assessment
Hu	Hutton
IAPs	Interested and Affected Parties
IBA	Important Bird Area
ICMM	International Council on Mining and Metals
IDP	Integrated Development Plan
LED	Local Economic Development
LC	Least Concern
LN	Listing Notice
M	Magnitude
MAP	Mean Annual Precipitation
MAT	Mean Annual Temperature
Ma	Mega-annum / million years
MHSA	The Mine Health and Safety Act (No. 29 of 1996)
MPRDA	Minerals and Petroleum Resources Development Act (No. 28 of 2002)
MR	Mining Right
NBA	National Biodiversity Assessment
NECSA	Nuclear Energy Corporation of South Africa
NLTA	National Land Transport Act (No. 5 of 2008)
NEMA	National Environmental Management Act (No. 107 of 1998)
NEM:AQA	National Environmental Management Air Quality Act (No. 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act (No. 10 of 2004)
NEM:PAA	National Environmental Management Protected Areas Amendment Act (No. 31 of 2004)
NEM:WA	National Environmental Management Waste Act (No. 59 of 2008)
N/FEPA	National / Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act (No. 25 of 1999)
NNR	National Nuclear Regulator
NKGM	New Kleinfontein Goldmine
Nk	Nkonkoni
NNRA	National Nuclear Regulatory Act (No. 47 of 1999)
NPAES	National Protected Areas Expansion Strategy
NRTA	National Road Traffic Act (No. 93 of 1996)
NWA	National Water Act (No. 36 of 1998)
OHP	Occupational Health Provider
OL	Orange Listed
OSHA	Occupational Health and Safety Act (No. 85 of 1993)
P	Probability
PCD	Pollution Control Dam
PIA	Palaeontological Impact Assessment
PM	Particulate Matter
PPE	Personal Protective Equipment
PSDF	Provincial Spatial Development Framework

Ptn	Portion
RAHIA	Rapid Appraisal Health Impact Assessment
RE	Remaining Extent
RGM	Radon Gas Monitors
RSDF	Regional Spatial Development Framework
RWD	Return Water Dam
S	Scale
SABS	South African Bureau of Standards
SACAD	South African Conservation Areas Database
SAPAD	South African Protected Areas Database
SCC	Species of Conservation Concern
SAAQIS	South African Air Quality Information System
SACAA	South African Civil Aviation Authority
SAHRA	South African Heritage Resources Association
SAHRIS	South African Heritage Resources Information System
SANBI	South African National Biodiversity Institute
SANS	South African National Standards
SAS	Scientific Aquatic Services
SIA	Social Impact Assessment
SLP	Social and Labour Plan
STS	Scientific Terrestrial Services
SWSA	Strategic Water Source Area
S&EIA	Scoping and Environmental Impact Assessment
TDS	Total Dissolved Solids
TOPS	Threatened or Protected Species
TSF	Tailings Storage Facility
VIA	Visual Impact Assessment
VU	Vulnerable
Wb	Witbank
WMA	Water Management Area
WML	Waste Management Licence
WRD	Waste Rock Dump
WUL	Water Use Licence
WULA	Water Use Licence Application
ZRC	Zimpande Research Collaborative

UNITS AND SYMBOLS

Bq	Becquerel (SI unit of radioactivity)
Bq/m^3	Becquerel per cubic metre
dBA	decibels
ha	hectare
km	kilometre
L/s	litres per second
mamsl	metres above mean sea level
mBq/L	milli-Becquerel per litre
mm/a	millimetre per annum
mg/L	milligram per litre
mg/m^2/day	milligram per square metre per day
m/s	metres per second
ppb	parts per billion
µg/m^3	micrograms per cubic metre
Ø	diameter
°C	Degrees Celsius
µSv/y	Microsievert per year (unit to measure dosage of radiation)
<	Smaller than
>	Bigger than
≤	Smaller than or equal to
≥	Bigger than or equal to

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002, as amended), the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment and an Environmental Management Programme report in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3)(b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17(1)(c) the competent Authority must check whether the application has considered any minimum requirements applicable, or instructions or guidance provided by the competent authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore, please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

OBJECTIVE OF THE SCOPING PROCESS

The objective of the scoping process is to, through a consultative process —

(a) identify the relevant policies and legislation relevant to the activity;
(b) motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
(c) identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
(d) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
(e) identify the key issues to be addressed in the assessment phase;
(f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
(g) identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

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1) CONTACT PERSON AND CORRESPONDENCE ADDRESS

Table 1. Details of the EAP who prepared the report

Environmental Assessment Practitioners	Prime Resources (Pty) Ltd
Physical address	The Workshop, 70 - 7th Avenue, Parktown North, 2193 Johannesburg
Postal address	Postnet Suite No 002, Private Bag X1, Woodhill 0076
Telephone Number	011 447 4888
Fax number	086 604 2219
Email	prime@resources.co.za
Professional affiliations	Prime Resources has affiliations / is registered with: SACNASP, ECSA, SAIMM, IAIAsa, EAPASA

a) Expertise of the EAP

i) Qualifications of the EAP (With evidence attached as Appendix 1)

Prime Resources (Pty) Ltd is a specialist environmental consulting firm providing environmental, social, and related services, which was established in 2003. Prime Resources was founded by Peter Theron (PrEng, SAIMM), the Managing Director and Principal Environmental Consultant of the firm. Peter has a GDE Environmental Engineering from the University of Witwatersrand and over 30 years' experience in the field of environmental science and engineering.

Gené Main (Pr. Sci.Nat, Environmental Science), the Project Manager and Principal Scientist for the proposed project, has a M.Sc. (Botany) from the University of the Western Cape and 15 years' experience in the field of environmental science.

Monique van der Westhuizen is an Environmental Scientist with a BSc Honours in Hydrogeology. She has experience in groundwater systems, environmental monitoring, laboratory work, reporting, auditing, ECO work, and various Environmental Authorisation processes.

Lindsay Lightfoot is a Senior Social Scientist, with an MA in Environmental Science from Rhodes University and has 12 years' experience in social and environmental consulting, predominantly in the mining industry.

Fiona Paumgarten is a Social Environmental Scientist with a PhD from the University of the Witwatersrand. She has experience in rural livelihoods and vulnerability, coping and adaptation strategies, and the contribution of natural resources to livelihood sustainability.

Key Prime Resources Personnel CVs are attached as Appendix 1.

ii) Summary of the EAP's past experience

The EAP's past experience is fully described in the Prime Resources Company Profile (attached as Appendix 2) when read together with the personnel CVs in Appendix 1.

2) DESCRIPTION OF THE PROPERTY

Table 2. Property description

Farm name:	Remaining Extent (RE) of the Farm Cloverfield 75 IR
Application area (Ha)	Western TSF: ± 56 ha; Northern TSF: ± 26 ha Total application area (including footprint of ancillary infrastructure): ± 118 ha
Magisterial district	City of Ekurhuleni Metropolitan Municipality
Distance and direction from nearest town	1.2 km southeast of Modder East and Eastvale suburbs, 3.5 km north of Springs, 2.34 km southwest of Welgedacht SH
21-digit Surveyor General Code for each farm portion	T0IR00000000007500000

a) Locality map (show nearest town, scale not smaller than 1:250 000)

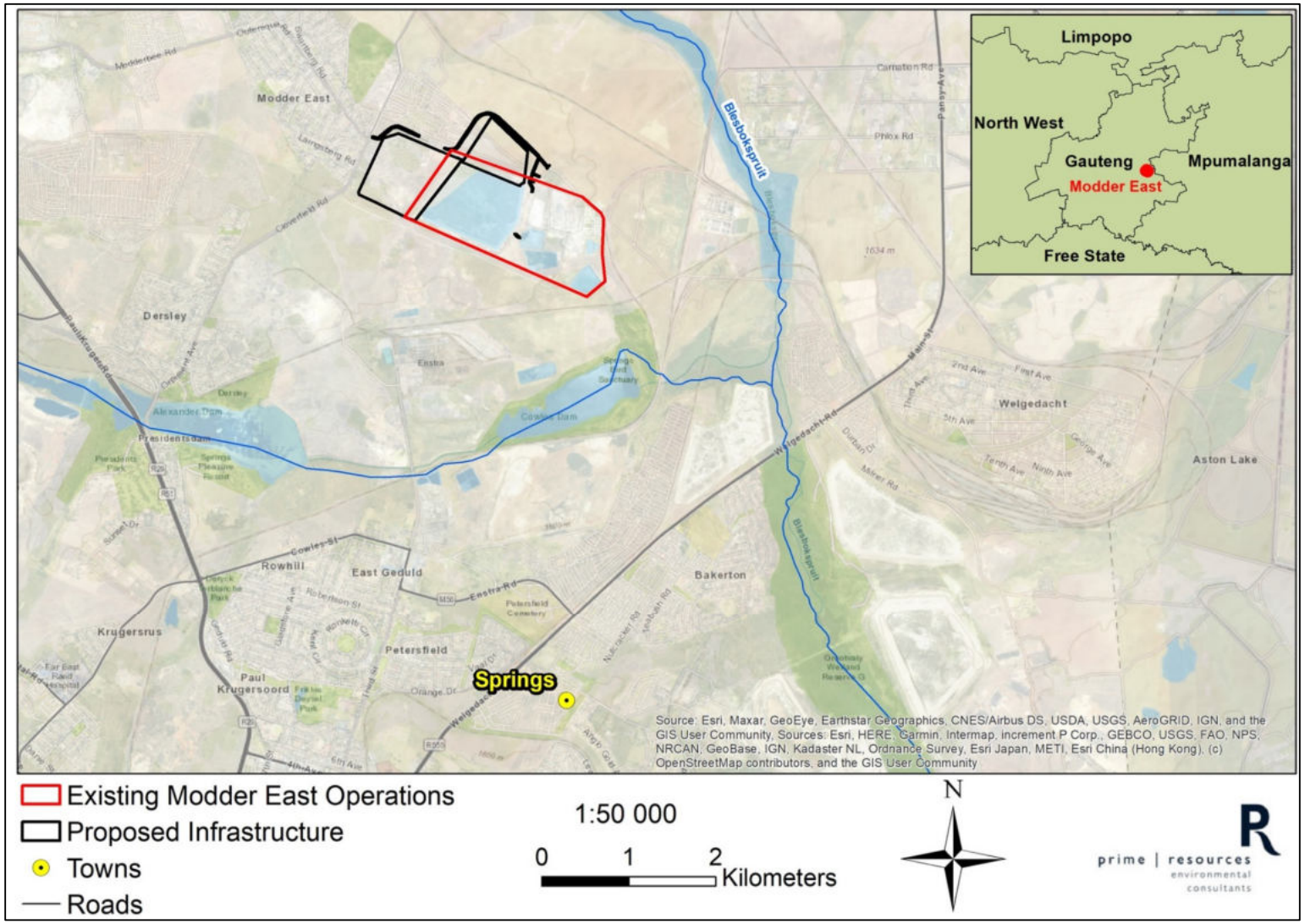

Figure 1. Locality map for the proposed project

3) DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

(Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site) – refer to Figure 2 and Figure 3.

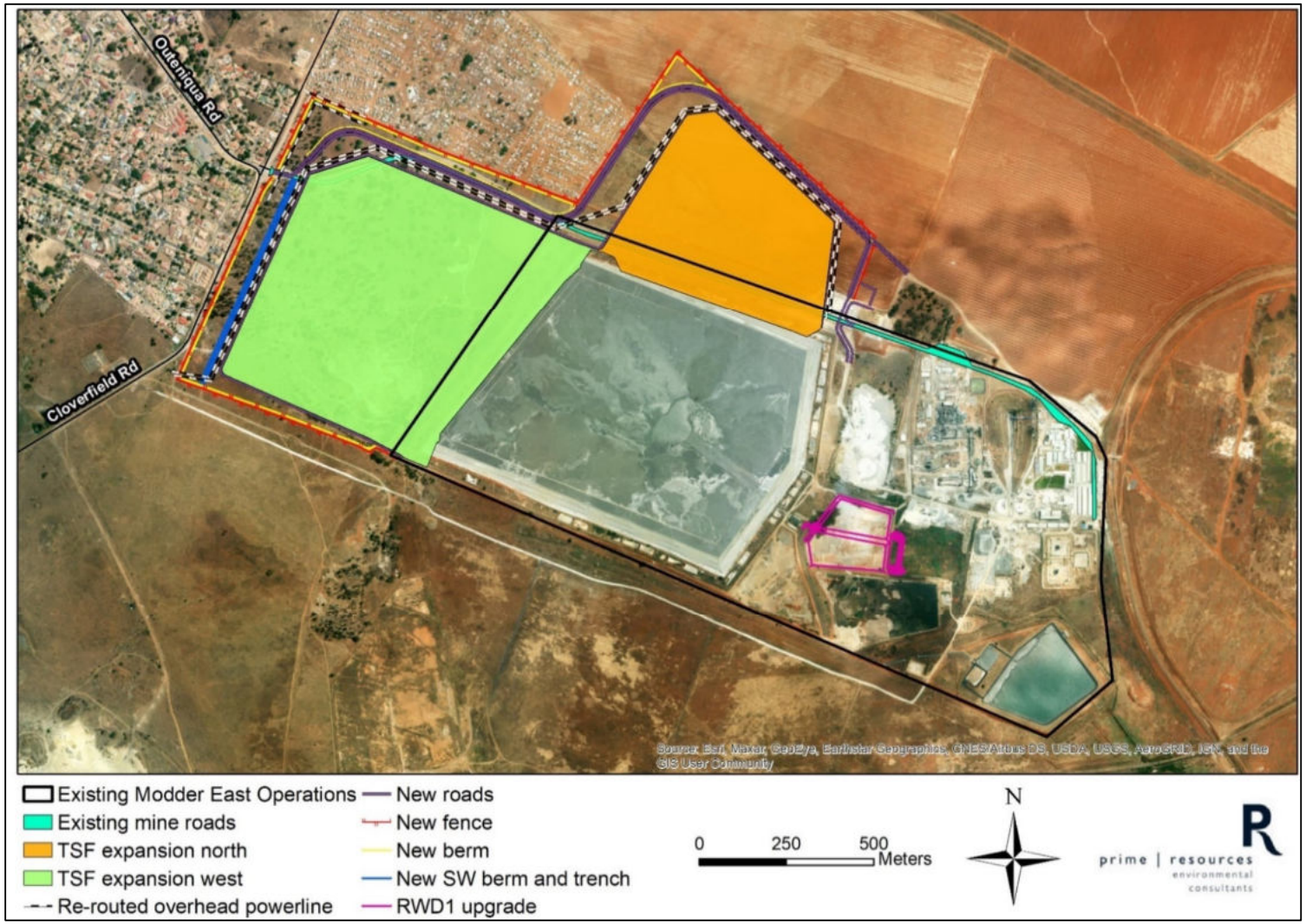

Figure 2. Site plan showing the existing infrastructure and position of the proposed TSF expansion

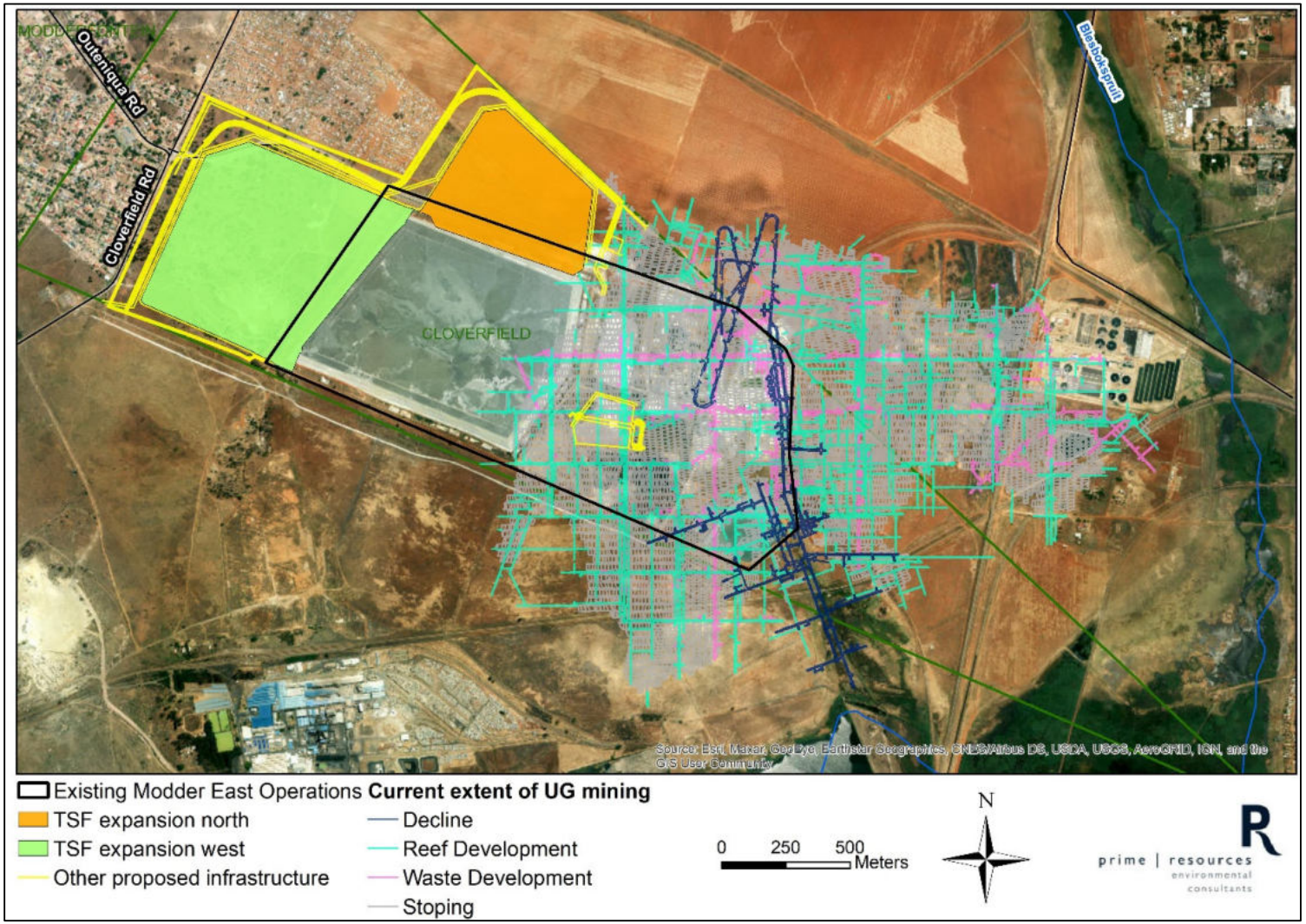

Figure 3. Extent of NKGM's underground workings

a) Listed and specified activities

Table 3. Listed and specified activities in terms of the NEMA EIA Regulations (2014), as amended

Name of activity	Aerial extent of the activity (ha or m²)	Listed activity	Applicable listing notice
Listed activities identified in terms of the National Environmental Management Act (No. 107 of 1998)			
The expansion of the TSF will require an amendment to the existing permit. The proposed project entails the expansion of the existing TSF westwards and northwards within the mine's lease area, and the refurbishment of the existing Return Water Dam (RWD). The western expansion of the existing TSF will cover an area of ± 54 ha to a final height of ± 32.5 m, and the northern expansion of the existing TSF will cover an area of ± 26 ha with a final height of ± 32.5 m.	TSF expansion ± 80 ha	X	**Listing Notice 1 (GNR983 of 2014, as amended), Activity 21D** Any activity including the operation of that activity which requires an amendment or variation to a right or permit in terms of section 102 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity contained in this Listing Notice or in Listing Notice 3 of 2014, required for such amendment.
The proposed project and associated infrastructure are considered an industrial development / expansion which will occur on land that was previously used for agriculture. The proposed project will mainly occur outside an urban area.	± 20 ha	X	**Listing Notice 1 (GNR983 of 2014, as amended), Activity 28** Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: ~~(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or~~ (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; ~~excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.~~
Clearance of vegetation within a Critical Biodiversity Area (CBA) and Ecological Support Area (ESA) for surface infrastructure. According to the Gauteng C-Plan, the north-western corner of the proposed western expansion TSF site is situated within both a Critical Biodiversity Area (CBA) and an Ecological Support Area (ESA). The south-western corner of the proposed western expansion TSF site also occurs within an ESA. As per NEMA, indigenous vegetation is defined as "vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years". Although the presence of primary vegetation could not be confirmed due to the modified and degraded nature of the grasslands, sections of the Modified Grassland as well as 3	Modified grassland: ± 4.5 ha Secondary grassland: ± 21 ha	X	**Listing Notice 1 (GNR983 of 2014, as amended), Activity 30** Any process or activity identified in terms of section 53(1) of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).

Name of activity	Aerial extent of the activity (ha or m²)	Listed activity	Applicable listing notice
Listed activities identified in terms of the National Environmental Management Act (No. 107 of 1998)			
central sections of the Degraded Grassland have not undergone significant vegetation clearance within the past 10 years.			
The development of a new access road around the proposed TSF expansion sites (extension of existing access road).	2.23 km	X	**Listing Notice 1 (GNR983 of 2014, as amended), Activity 56** The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre— ~~(i) where the existing reserve is wider than 13,5 meters; or~~ (ii) where no reserve exists, where the existing road is wider than 8 metres; ~~excluding where widening or lengthening occur inside urban areas.~~
The proposed expansion requires a Water Use Licence in terms of the National Water Act, 1998 (Act No. 36 of 1998) (NWA), as well as a Waste Management Licence (WML) in terms of the National Environmental Management: Waste Act (Act 59 of 2008). The WML application is also incorporated into this application for EA. Refer to Table 4.	TSF expansion ± 80 ha	X	**Listing Notice 2 (GNR984 of 2014, as amended), Activity 6** The development of facilities or infrastructure for any process or activity which requires a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the generation or release of emissions, pollution or effluent, excluding— (i) activities which are identified and included in Listing Notice 1 of 2014; (ii) activities which are included in the list of waste management activities published in terms of section 19 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; ~~(iii) the development of facilities or infrastructure for the treatment of effluent, polluted water, wastewater or sewage where such facilities have a daily throughput capacity of 2 000 cubic metres or less; or~~ ~~(iv) where the development is directly related to aquaculture facilities or infrastructure where the wastewater discharge capacity will not exceed 50 cubic metres per day.~~
Vegetation clearance for the establishment of the TSF expansion and supporting infrastructure, including the re-routed access road and re-routed powerlines. As per NEMA, indigenous vegetation is defined as "vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years". Although the presence of primary vegetation could not be confirmed due to the modified and degraded nature of the grasslands, sections of the Modified Grassland as well as 3	Modified grassland: ± 4.5 ha Secondary grassland: ± 21 ha	X	**Listing Notice 2 (GNR984 of 2014, as amended), Activity 15** The clearance of an area of 20 hectares or more of indigenous vegetation, ~~excluding where such clearance of indigenous vegetation is required for—~~ ~~(i) the undertaking of a linear activity; or~~ ~~(ii) maintenance purposes undertaken in accordance with a maintenance management plan.~~

Name of activity	Aerial extent of the activity (ha or m²)	Listed activity	Applicable listing notice
Listed activities identified in terms of the National Environmental Management Act (No. 107 of 1998)			
central sections of the Degraded Grassland have not undergone significant vegetation clearance within the past 10 years.			
The proposed expansion of the TSF and supporting infrastructure is considering a mining-related activity, required to exercise mining rights issued for other Gold One operations.	TSF expansion ± 80 ha	X	**Listing Notice 2 (GNR984 of 2014, as amended), Activity 17** Any activity including the operation of that activity which requires a mining right in terms of section 22 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the mining right.
The main purpose of the TSF is to store process tailings / mine waste. The expansion of the TSF will allow for the continued disposal of mine waste resulting from the removal and processing of minerals.	TSF expansion ± 80 ha	X	**Listing Notice 2 (GNR984 of 2014, as amended), Activity 19** The removal and disposal of a mineral, which requires permission in terms of section 20 of the Mineral and Petroleum Resources Development Act, as well as any other applicable activity as contained in this Listing Notice, in Listing Notice 1 of 2014 or Listing Notice 3 of 2014, required to exercise the permission.
The development of access roads and internal haul roads wider than 4 m within sites identified as CBAs and ESAs. According to the Gauteng C-Plan, the north-western corner of the proposed western expansion TSF site is situated within a Critical Biodiversity Area (CBA), an Ecological Support Area (ESA) and a National Protected Area Expansion Strategy (NPAES). The south-western corner of the proposed western expansion TSF site also occurs within an ESA. As per NEMA, indigenous vegetation is defined as "vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years". Although the presence of primary vegetation could not be confirmed due to the modified and degraded nature of the grasslands, sections of the Modified Grassland as well as 3 central sections of the Degraded Grassland have not undergone significant vegetation clearance within the past 10 years. The project area is located in the Soweto Highland Grassland, which is classified as Vulnerable (VU) in terms of Section 52 of NEM:BA. However, due to the extent of transformation within the proposed sites, the species composition representative of	The proposed road will intersect with: NPAES ± 0.55 ha CBA ± 0.40 ha ESA ± 0.50 ha Degraded grasslands ± 1 ha Combined distance of roads: ± 303 m within a NPAES ± 302 m within CBA ± 385 m within an ESA ± 1 185 m of agricultural soils	X	**Listing Notice 3 (GNR985 of 2014, as amended), Activity 4** The development of a road wider than 4 metres with a reserve less than 13,5 metres. c. Gauteng ~~i. A protected area identified in terms of NEMPAA, excluding conservancies;~~ ii. National Protected Area Expansion Strategy Focus Areas; iii. Gauteng Protected Area Expansion Priority Areas; iv. Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans; v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004); ~~vi. Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority;~~ vii~~. Sites identified as high potential agricultural land in terms of Gauteng Agricultural Potential Atlas;~~ ~~viii. Important Bird and Biodiversity Area (IBA);~~ ~~ix. Sites or areas identified in terms of an international convention;~~ ~~x. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the NEMPAA;~~ ~~xi. Sites designated as nature reserves in terms of municipal Spatial Development Frameworks; or~~

Name of activity	Aerial extent of the activity (ha or m²)	Listed activity	Applicable listing notice
Listed activities identified in terms of the National Environmental Management Act (No. 107 of 1998)			
the Soweto Highland Grassland is decreased; only small portions of natural grasslands are present.			~~xii. Sites zoned for conservation use or public open space or equivalent zoning.~~
Vegetation clearance of more than 300 m² within sites identified as CBAs and ESAs for the construction and operation of the proposed TSFs and associated infrastructure. According to the Gauteng C-Plan, the north-western corner of the proposed western expansion TSF site is situated within both a Critical Biodiversity Area (CBA) and an Ecological Support Area (ESA). The south-western corner of the proposed western expansion TSF site also occurs within an ESA. As per NEMA, indigenous vegetation is defined as "vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years". Although the presence of primary vegetation could not be confirmed due to the modified and degraded nature of the grasslands, sections of the Modified Grassland as well as 3 central sections of the Degraded Grassland have not undergone significant vegetation clearance within the past 10 years. The project area is located in the Soweto Highland Grassland, which is classified as Vulnerable (VU) in terms of Section 52 of NEM:BA. However, due to the extent of transformation within the proposed sites, the species composition representative of the Soweto Highland Grassland is decreased; only small portions of natural grasslands are present.	Modified grassland: ± 4.5 ha Secondary grassland: ± 21 ha	X	**Listing Notice 3 (GNR985 of 2014, as amended), Activity 12** The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. c. Gauteng i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA ~~or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004~~; ii. Within Critical Biodiversity Areas or Ecological Support Areas identified in the Gauteng Conservation Plan or bioregional plans; or ~~iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.~~
The development of access roads and internal haul roads wider than 4 m within sites identified as CBAs and ESAs. The project area is located in the Soweto Highland Grassland, which is classified as Vulnerable (VU) in terms of Section 52 of NEM:BA. However, due to the extent of transformation within the proposed sites, the species composition representative of the Soweto Highland Grassland is decreased; only small portions of natural grasslands are present.	Combined distance of roads: NPAES ± 303 m CBA ± 302 m ESA ± 385 m Agricultural soils ± 1 185 m	X	**Listing Notice 3 (GNR985 of 2014, as amended), Activity 18** The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre. c. Gauteng ~~i. A protected area identified in terms of NEMPAA, excluding conservancies;~~ ii. National Protected Area Expansion Strategy Focus Areas; iii. Gauteng Protected Area Expansion Priority Areas; iv. Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans;

Name of activity	Aerial extent of the activity (ha or m²)	Listed activity	Applicable listing notice
Listed activities identified in terms of the National Environmental Management Act (No. 107 of 1998)			
			v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004); ~~vi. Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority;~~ ~~vii. Sites identified as high potential agricultural land in terms of Gauteng Agricultural Potential Atlas;~~ ~~viii. Sites or areas identified in terms of an international convention;~~ ~~ix. Important Bird and Biodiversity Area (IBA);~~ ~~x. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the NEMPAA;~~ ~~xi. Sites designated as nature reserves in terms of municipal Spatial Development Frameworks; or~~ ~~xii. Sites zoned for conservation use or public open space or equivalent zoning.~~

Table 4. Listed and specified activities in terms of the NEM:WA Regulations (GN921 of November 2013)

Name of activity	Listed activity	Applicable listing notice
Listed activities identified in terms of the National Environmental Management: Waste Act (No. 59 of 2008)		
Deposition of tailings material on an expanded TSF footprint.	X	**Category B (GNR921 of 2013, as amended), Activity 3** The recovery of waste including the refining, utilisation, or co-processing of the waste at a facility that processes ~~in excess of 100 tons of general waste per day or~~ in excess of 1 ton of hazardous waste per day, excluding recovery that takes place as an integral part of an internal manufacturing process within the same premises.
The expanded TSF will cater for the disposal of tailings and slimes which are considered hazardous waste.	X	**Category B (GNR921 of 2013, as amended), Activity 7** The disposal of any quantity of hazardous waste to land.
Construction of the TSF expansion.	X	**Category B (GNR921 of 2013, as amended), Activity 10** The construction of a facility for a waste management activity listed in Category B of this Schedule (not in isolation to associated waste management activity).
The establishment of the proposed TSF expansion sites, which will constitute residue deposits in the form of tailings slurry.	X	**Category B (GNR921 of 2013, as amended), Activity 11** The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a mining right, exploration right or production right in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).

b) Description of the activities to be undertaken

(Describe methodology or technology to be employed, and for a linear activity, a description of the route of the activity)

New Kleinfontein Goldmine (Pty) Ltd (hereafter referred to as the "Applicant" or "NKGM"), a subsidiary of Gold One Group Limited, is the holder of a Mining Right (MR) [MR reference number: GP 30/5/1/2/2 (182) MRC] which covers an aerial extent of 3 989.2 ha within the Magisterial District of Springs, Gauteng Province. The MR area covers various portions of the farms Holfontein 71 IR, Modder East 72 IR, Cloverfield 75 IR, Welgedacht 74 IR, Geduld 123 IR and Klipfontein 70 IR.

NKGM is a fully operational, underground, medium-sized gold mine with existing mining rights, several Environmental Authorisations (EA), and an approved Water Use Licence (WUL). NKGM is located on the Remaining Extent (RE) of the Farm Cloverfield 75 IR, near Springs and adjacent to the suburbs of Modder East and Eastvale, approximately 40 km to the east of the Johannesburg CBD in the City of Ekurhuleni (CoE) Municipality.

The Applicant is applying for an EA from the Department of Mineral Resources and Energy (DMRE) in terms of the National Environmental Management Act, No. 107 of 1998 (NEMA). The proposed project triggers activities listed in terms of the NEMA Listing Notice GNR983, 984 and 985 of 2014, as amended, as well as activities listed in terms of the NEM:WA Regulations (GNR921 of November 2013).

The listed activities require that a full Scoping and Environmental Impact Assessment (S&EIA) process be followed. The two phases, Scoping and EIA, each have a 30-day public participation period, allowing review of documents and raising of comments / questions / concerns, which will be included in the final documentation submitted to the authorities. Refer to Figure 4 for the steps taken during the S&EIA process.

The remaining Life of Mine (LoM) is estimated to be 4 years with the mine being expected to operate until 2026. Decommissioning is anticipated to commence in 2027. NKGM currently deposits tailings at the existing TSF located on the RE of the Farm Cloverfield 75 JR. Once the underground resources at the mine are exhausted, NKGM intends to process ore from other Gold One operations at the existing processing plant. The remaining capacity of the existing TSF is limited to 3 years at a disposal rate of 125 000 tonnes/month. The expansion of the TSF will allow for the continued operation of the processing plant, and the disposal of tailings, for an additional 10 years.

In order to support ongoing mining operations and continue processing, the Applicant proposes to expand the existing TSF westwards and northwards within the mine's lease area, and to upgrade the existing Return Water Dam 1 (RWD1). The main purpose of the TSF is to store process tailings (waste material) generated from ore processing activities. The upgraded RWD will collect and drain water from the TSF via penstocks (conduit for diverting water) (in addition to RWD2). Expansion of the TSF will allow for the surface infrastructure involved in the processing of ore to remain in place beyond 2026. Expansion is expected to commence in 2025 before the existing TSF has reached its capacity. Expansion will be conducted in both directions simultaneously.

The proposed TSF expansion will be operated similarly to the mine's current TSF i.e., an upstream day wall / paddock system. The tailings slurry will be transported from the existing NKGM processing plant via the high-density polyethylene (HDPE) tailings reticulation system and deposited onto the TSF via wet deposition. Tailings slurry will be deposited in a systematic manner in order to achieve the highest rate of water removal to ensure slope and structural stability of the TSFs.

The tailings that will be stored in the proposed TSF is classified as Type 3 waste; therefore, the proposed TSF and RWD1 will be designed with Class C barrier systems. The liner system below the TSF would comprise of filter sand and aggregate finger drains, a silty sand protection layer or equivalent geofabric, 1.5 mm thick HDPE membrane, and two 150 mm clay layers. A drainage and monitoring system will be placed beneath the barrier system. Water exiting the under-drainage systems and free water decanted from the TSF will be drained to the RWD.

Starter / toe walls will be developed around the expanded TSF. Catchment paddocks and associated cross walls, required to contain wash off from slopes and spillages from faulty pipes, will be installed around the perimeter of the expanded TSF. A stormwater diversion trench equipped with energy dissipaters will be installed upstream of the western expansion.

Certain existing infrastructure will require relocation / rerouting due to the proposed layout intersecting with it:

- Mine boundary fence
- Mine access road
- Pedestrian walkway
- Security trench and berm
- Mine water supply pipeline
- Over-head powerline.

The existing mine boundary fence will be extended to enclose the expanded tailings footprint. The existing mine access road will be rerouted around the northern TSF expansion footprint, to link the current western entrance road with the mine entrance. The existing pedestrian walkway of 2 m wide will be rerouted to run alongside the proposed rerouted mine access road. A safety barrier wall 1 m high will be created between the mine access road and the walkway. The over-head powerline will be re-routed around the northern edge of TSF expansion footprint, aligning more or less with the access road.

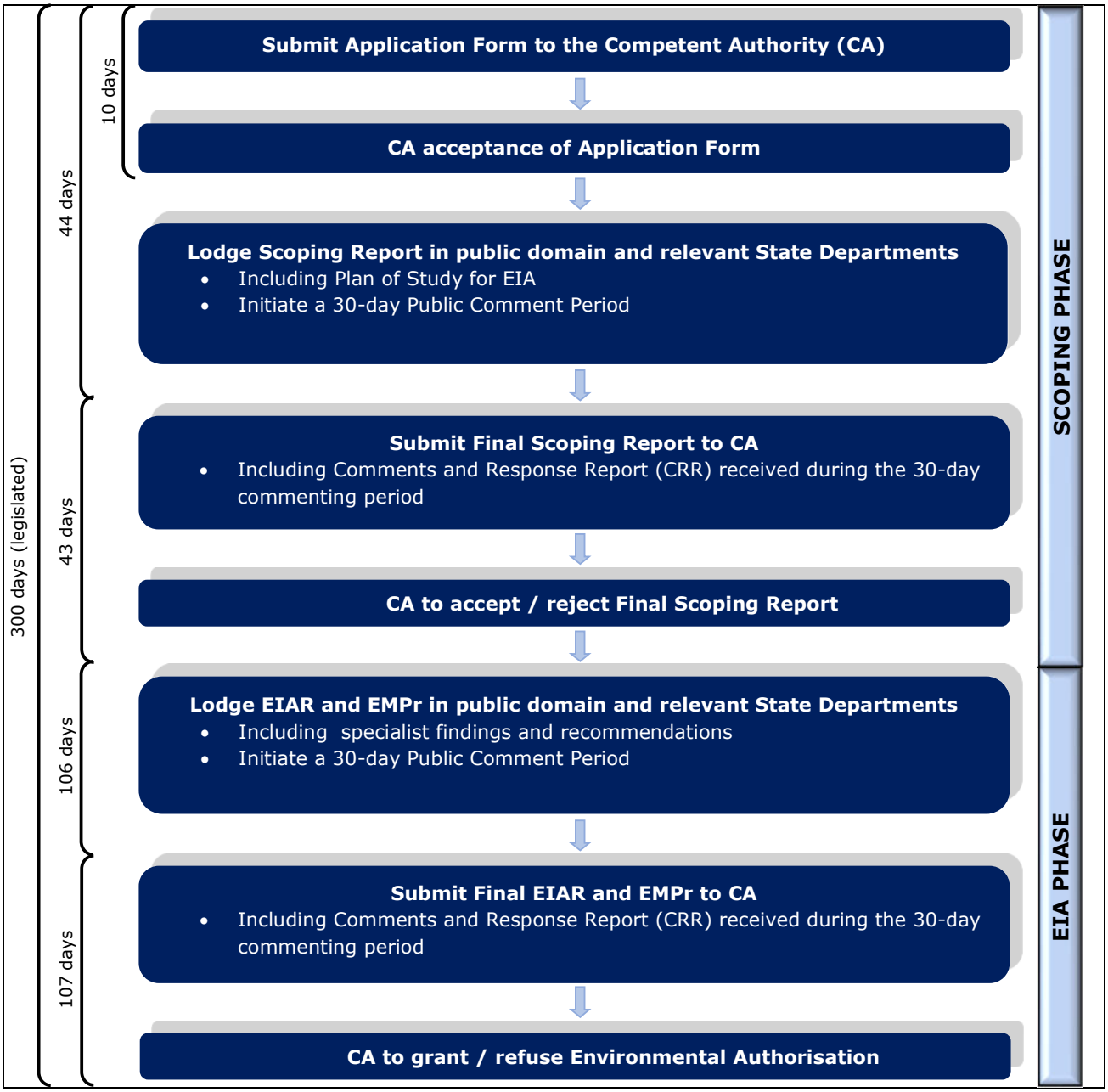

Figure 4. Tasks / steps to be undertaken during the S&EIA

4) POLICY AND LEGISLATIVE CONTEXT

Table 5. Legislation and guidelines relevant to the proposed project

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT? (E.g., in terms of the National Water Act a Water Use License has / has not been applied for)
Chapter 2 of the **Constitution of South Africa**, the Bill of Rights, is a cornerstone of democracy in South Africa. It enshrines the rights of all people in our country and affirms the democratic values of human dignity, equality and freedom. Section 24 of the Bill of Rights states that everyone has the right to an environment that is not harmful to their health or well-being; and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that - • prevent pollution and ecological degradation; • promote conservation; and • secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.	Refer to Sections 10)c) and 11)g) for a high-level overview of potential impacts and associated mitigation measures, respectively.	Sustainable development is relevant to all projects. This basic environmental right as prescribed in Section 24 of the Bill of Rights is preserved throughout the environmental legislation. An application for an Environmental Authorisation is being followed in terms of reasonable legislative measures.
The **Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA)** is the key legislation governing mining activities within South Africa. The Department of Mineral Resources and Energy (DMRE) is the competent authority that deals with all mining-related applications. In terms of the MPRDA, all mining-related activities require an Environmental Authorisation (EA), rights and / or permits prior to any mine-related activity commencing.	An integrated application in terms of the MPRDA and NEMA is being undertaken. The NEMA process for the proposed project is described below.	• For the DMRE to consider an application for an Environmental Authorisation (EA), an Environmental Authorisation process entailing a Scoping and EIAR and public consultation as specified in the NEMA EIA Regulations of 2014 is undertaken. This draft Scoping Report represents the first phase of the EA process. • An application for an EA was submitted to the DMRE on 18 October 2022.

The **National Environmental Management Act, No. 107 of 1998 (NEMA)** is enabling legislation intended to provide a framework for integrating environmental management into all developmental activities to promote cooperative environmental governance with regard to decision-making by state organs on matters affecting the environment.
The EIA Regulations of GNR982, December 2014 serve to regulate the procedure and criteria for submitting, processing and considering decisions for applications for Environmental Authorisation. These Regulations provide details on the process to be followed for the consultation of stakeholders and Interested and Affected Parties (IAPs), the identification of the Competent Authority, and the various timeframes and application requirements for Environmental Authorisation. A further three Regulations, GNR983, GNR984, and GNR985 (all of 2014 as amended in 2021), provide lists of activities for which Environmental Authorisation, either in the form of a Basic Assessment or Scoping and Environmental Impact Assessment Report (EIAR) / Environmental Management Programme (EMPr), is required before the activity can commence.
	This Scoping Report has been prepared to meet the requirements of the EIA Regulations (GNR982 of 2014, as amended).
	Refer to Section 3)a) for the listed activities applicable to the proposed project.
		• An application for EA in terms of NEMA was submitted to MPRDA on 18 October 2022 for the NEMA listed activities triggered by the proposed project.
		• In accordance with the EIA Regulations (2014), the following is to be submitted in support of the application for Environmental Authorisation:
		  ○ Scoping Report (this document), together with the results of consultation with Interested and Affected Parties (IAPs) and State Departments, which must be submitted to the DMRE within 44 days of the EA application being accepted by DMRE
		  ○ EIAR / EMPr together with the results of consultation with Interested and Affected Parties (IAPs) and State Departments.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT? (E.g., in terms of the National Water Act a Water Use License has / has not been applied for)**
Since the enactment of the "One Environmental System" on 8 December 2014, the Environmental Authorisation process in terms of the NEMA must be followed for any activities requiring a right or permit in terms of the MPRDA to fulfil the requirements of Section 5A(a) of the Act.		
The **National Environmental Management Air Quality Act, No. 39 of 2004 (NEM:AQA)** has placed the responsibility for air quality management on local authorities that will be tasked with baseline characterisation, management and operation of ambient monitoring networks, licensing of listed activities, and emissions reduction strategies. GN893 of 2013 provides the list of activities in terms of Section 21(1)(a) for which an Atmospheric Emission Licence (AEL) is required in terms of Chapter 5 of the Act. This notice further establishes minimum emission standards for the listed activities. The National Dust Control Regulations (GNR827 of 2013) prescribe general measures for the control of dust in all areas, including residential and light commercial areas.	Refer to Section 10)a)ii) for a description of the ambient air quality within the project area. Refer to Sections 10)c) and 11)g) for a high-level overview of potential impacts and associated mitigation measures, respectively.	• The Applicant has an AEL in place (ref. 14/1/1/7/4/99/SPR) and no additional listed activities in terms of the NEM:AQA (GN893) are triggered by the proposed project. • The proposed project area falls within the Highveld Priority Area (HPA) in terms of Section 18(1) of the NEM:AQA as published in GNR1123 of 2007. • Measures for the management and control of dust arising from activities will be provided in the EMPr during the EIA phase.
The National Heritage Resources Act, No. 25 of 1999 (NHRA) serves to protect and manage South African heritage and cultural resources, which include places, buildings, structures and equipment of cultural significance, historical settlements and townscapes, archaeological and paleontological sites, graves and burial grounds. The Act protects any heritage resources from damage by developments by stipulating in Section 38 that any person intending on undertaking any form of development which involves the activities listed below must, at the earliest stage of initiation, notify the South African Heritage Resources Association (SAHRA): • the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length • the construction of a bridge or similar structure exceeding 50 m in length • any development or other activity which will change the character of a site— ○ exceeding 5 000 m^2 in extent; or ○ involving three or more existing erven or subdivisions thereof; or ○ involving three or more erven or divisions thereof which have been consolidated within the past five years; or • the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority • the re-zoning of a site exceeding 10 000 m2 in extent; or • Any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority.	Refer to Section 10)a)viii) where the heritage landscape is characterised. Refer to Sections 10)c) and 11)g) for a high-level overview of potential impacts and associated mitigation measures, respectively.	• A Heritage Impact Assessment (HIA) as well as a Phase 2 Palaeontological Impact Assessment (PIA) were completed for the proposed project. Refer to Appendix 10 and Appendix 11 respectively. • The national web-based screening report deemed the area as having a "very high" palaeontological sensitivity; however, the specialist did not locate any fossils during the site survey and is of the opinion that the potential impact on fossil heritage resources is extremely low and it is unlikely that any potential fossils will be disturbed. • The national web-based screening report deemed the area as having a "low" archaeological and cultural heritage sensitivity. The specialist confirmed this sensitivity and indicated that no cultural or heritage resources of significance would be destroyed or compromised as a result of the proposed project. • No agricultural and palaeontological findings / objects / artefacts of significance were noted within the proposed development footprint. Mitigation measures for potential chance finds will be included in the EMPr during the EIA phase. • The South African Heritage Resources Association (SAHRA) has been notified of the proposed project.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT? (E.g., in terms of the National Water Act a Water Use License has / has not been applied for)**
Section 38(8) of the Act states that if heritage considerations are considered as part of an application process undertaken in terms of NEMA and the EIA process, there is no need to undertake a separate application in terms of the NHRA. Heritage considerations will form part of this environmental process.		
The **National Water Act, No. 36 of 1998 (NWA)** regulates all matters relating to inland water resources. It thus operates as a management instrument with the lead authority being the Department of Water and Sanitation (DWS). This Act provides mechanisms for the prevention of the pollution of water resources to support the management of water as a renewable resource. Section 21 of the NWA lists water uses for which authorisation is required from the DWS. Regulation GN704 of 1999 provides regulations for the use of water for mining and related activities and is aimed to further protect water resources. These regulations describe how mining activities should be managed to protect water resources. The Act thus plays a crucial role in the mining process as many mining-related activities use water as listed in Section 21, thereby requiring approval from DWS.	Refer to Sections 10)a)x) and 10)a)xi) where the current water resources surrounding the site are characterised. Refer to Sections 10)c) and 11)g) for a high-level overview of potential impacts and associated mitigation measures, respectively.	• A watercourse verification was prepared for the proposed project (Appendix 13). No rivers, wetlands or freshwater ecosystems were identified within the study area. According to the 2018 National Biodiversity Assessment (NBA) database, a depression wetland is situated approximately 500 m north-northwest from the edge of the proposed western TSF site and an unchanneled valley-bottom wetland is situated approximately 500 m to the north of the proposed northern TSF site. A hillslope wetland was identified by the specialist which is situated 500 m south-west of the proposed western TSF site. According to the Gauteng C-Plan, buffers / regulated areas associated with a non-perennial river and the aforementioned depression wetland intersect with the study area. • The TSF expansion will require a Water Use License (WUL) in terms of Section 21 of the NWA. A pre-application enquiry has been submitted to the DWS. Refer to Appendix 19.
The **National Environmental Management Waste Act, No. 59 of 2008 (NEM:WA)** serves to reform the laws regulating waste management in order to protect public and environmental health by providing measures for the prevention of pollution and ecological degradation and to provide defining requirements for the licensing and control of waste management activities. GN921 of 2013 provides definitions for activities that require a Waste Management Licence (WML) and identifies the relevant environmental authorisations which are further required for said activities. The storage of waste above the specific thresholds (in excess of 100 m^3 of general waste or 80 m^3 of hazardous waste) for more than 90 days triggers a Category C activity which requires compliance with the National Norms and Standards for the Storage of Waste (GN926 of 2013). The undertaking of a waste management activity listed under Category B requires that a process of S&EIR as set out in the NEMA EIA Regulations is followed as part of the NEM:WA Chapter 5 WML application process.	This is an integrated EA application for activities considered both in terms of NEMA and NEM:WA. Refer to Section 3)a) above for the applicable listed activities.	• Listed activities in terms of GN921 (Category B) of the NEM:WA are triggered as a result of the proposed project; therefore, a Waste Management Licence (WML) is required and is being applied for in conjunction with the NEMA listed activities. • General waste management will also be addressed in the EMPr during the EIA phase.
The **Hazardous Substances Act, No. 15 of 1973** aims to control substances that may cause injury, ill-health, or death through their toxic, corrosive, irritant, strongly sensitising or flammable nature, or by the generation of pressure. The Act provides for	Refer to Sections 10)c) and 11)g) for a high-level overview of potential	• A commitment to abide by the Act and Regulations will be included in the EMPr during the EIA phase.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT? (E.g., in terms of the National Water Act a Water Use License has / has not been applied for)
the division of such substances or products into groups in relation to the degree of danger as well as the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances and products.	impacts and associated mitigation measures, respectively.	• Hazardous materials will be handled on site. The Applicant will ensure that any hazardous materials on site are handled in a manner in line with that described in the Act. • Mitigation measures for the management and handling of hazardous substances will be provided in the EMPr during the EIA phase.
The purpose of the **National Environmental Management: Biodiversity Act, No. 10 of 2004 (NEM:BA)** is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA. This includes, among others, the protection of species and ecosystems; the sustainable use of indigenous biological resources; the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resources; and the establishment of a South African National Biodiversity Institute (SANBI). Section 52 of the Act provides for the listing of threatened or protected ecosystems, in one of four categories: Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or protected. The main purpose of listing threatened ecosystems is to reduce the rate of ecosystem and species extinction and includes the prevention of further degradation and loss of structure, function and composition of threatened ecosystems. Threatened terrestrial ecosystems have been delineated based on the South African Vegetation Map, national forest types and priority areas identified in a provincial systematic biodiversity plan. Section 53 of the Act goes on to provide the Minister with the power to publish a list of threatening activities within a Section 52 listed ecosystem for which EA is required and this activity becomes triggered. While the Minister has published a list of ecosystems in need of protection, to the author's knowledge, no list of threatening activities has been published to date. Chapter 4, Part 2 of the Act provides for the listing of species as threatened or protected. If a species is listed as threatened, it should be further classified as critically endangered, endangered or vulnerable (GNR151 of 2007). A list of Threatened or Protected Species (TOPS) has been published (GNR151 of 2007). The Act also defines restricted activities in relation to a specimen of a listed threatened or protected species (GNR152 of 2007). The Act also defines restricted activities in relation to a TOPS specimen (GNR152 of 2007, as amended) requiring a permit. Draft guidelines (GN648 of 2019) provide the requirements for assessment and reporting of impacts on Terrestrial and Aquatic Biodiversity.	Refer to Section 10)a)xii) where the current biodiversity in the area is characterised. Refer to Sections 10)c) and 11)g) for a high-level overview of potential impacts and associated mitigation measures, respectively.	• No rivers or wetlands are located within the study area. • A Terrestrial Biodiversity Assessment was completed for the proposed project (Appendix 14). The project area is located in the Soweto Highland Grassland, which is classified as Vulnerable (VU) in terms of Section 52 of NEM:BA. However, due to the extent of transformation within the proposed sites, the species composition representative of the Soweto Highland Grassland is decreased; only small portions of natural grasslands are present. • According to the Gauteng C-Plan (2020), the north-western corner of the proposed western expansion TSF site is situated within both a Critical Biodiversity Area (CBA) and an Ecological Support Area (ESA). The south-western corner of the proposed western expansion TSF site occurs within an ESA. The proposed northern TSF site does not occur within a CBA or ESA. • One Species of Conservation Concern (SCC) was positively identified in large numbers at the proposed western expansion TSF site, an Orange Listed (OL) plant species (*Hypoxis hemerocallidea*). This species is classified as Least Concern (LC) but has a declining population status. It is recommended that these species be relocated to a similar environment by a professional prior to the commencement of any activities. • No faunal SCC were observed during the field assessment; however, the site assessment undertaken by the specialist indicated that the study area may have suitable habitat for three (3) SCC: *Lepidochrysops procera* (Grassveld Nimble Blue; Vulnerable), *Opistophthalmus pugnax* (Pugnacious Burrowing Scorpion; TOPS; Protected) and *Harpactira hamiltoni* (Highveld Baboon Spider; TOPS; Protected). The large degree of urbanisation and movement barriers

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The Act also provides for the listing of alien invasive species (GN864 of 2016), listed alien invasive species have been classified into categories 1a, 1b, 2 or 3. As a result, certain activities are: restricted or prohibited in terms of Section 71A(1); exempted in terms of Section 71(3); or require a permit in terms of Section 71(1) of the Act. Regulations in this regard (GNR598 of 2014) have also been published and require that permits are obtained for restricted activities relating to listed alien and invasive species. Spreading or allowing the spread of any specimen of a listed invasive species in terms of NEM:BA is prohibited.		surrounding the study area will, however, reduce the favourability of the study area for these species. • The application area has a high diversity of Alien Invasive Plants (AIPs) and most of the species observed on site by the specialist are listed category invaders for which control is required. Eleven AIP species listed under NEM:BA Category 1b and one AIP species listed under NEM:BA Category 3 were recorded. • Measures regarding the protection of species, rehabilitation of areas disturbed as a result of the proposed activities and the removal of AIPs will be addressed in the EMPr during the EIA phase.
The **National Environmental Management: Protected Areas Act (No. 57 of 2003) (NEM:PAA)** was promulgated in order to provide for (among other things) the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes; the establishment of a National Register of Protected Areas; and management of those areas in accordance with national norms and standards. The **South African Protected Areas Database** (SAPAD, 2021) and **South African Conservation Areas Database** (SACAD, 2021) are Geographic Information System (GIS) inventories of all Protected and Conservation areas in South Africa. The **National Protected Areas Expansion Strategy** (NPAES, 2010) are focus areas for land-based protected area expansion are large, intact and unfragmented areas of high importance for biodiversity representation and ecological persistence, suitable for the creation or expansion of large protected areas. The focus areas were identified through a systematic biodiversity planning process undertaken as part of the development of the National Protected Area Expansion Strategy (NPAES, 2008). According to the NPAES database (2010), the project area is not located within an NPAES Focus Area.	Refer to Section 10)a)xii) where the current biodiversity in the area is characterised.	• According to the most recently published SAPAD (2021) database, the Marievale Nature Reserve is located within 7 to 10 km of the study area. • According to the most recently published SACAD (2021) database, the study area is located within 3 km of the Blesbokspruit. • The NPAES (2010) database indicated that there are no formally protected nature reserves within a 10 km radius of the study area. • The closest IBA, the Blesbokspruit IBA, is located 2 km to the south-east of the study area.

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The **Conservation of Agricultural Resources Act, No. 43 of 1983 (CARA)** provides for the conservation of natural agricultural resources through the maintenance of the production potential of land, through combating and prevention of erosion and weakening or destruction of the water sources, and through the protection of the vegetation and the combating of weeds and invader plants. Amendments to regulations under the CARA (Act No. 43 of 1983) provide for the declaration of weeds and invader plants, with weeds regarded as alien plants with no known useful economic purpose, while invader plants may serve useful purposes as ornamentals, as sources of timber and may provide many other benefits, despite their aggressive nature. Declared weeds are described as Category 1 plants, while declared invader plants with a commercial or utility value are described as Category 2 plants and ornamental species as Category 3 plants. CARA indicates that Category 1 weeds are prohibited, and that Category 2 and 3 plants must be controlled.	Refer to Section 10)a)vii) for a description of the current Land Use, Soils and Land Capability of the area and Section 10)a)xii) where the current biodiversity in the area is characterised. Refer to Sections 10)c) and 11)g) for a high-level overview of potential impacts and associated mitigation measures, respectively.	• A Soil, Land Use and Land Capability Assessment has been prepared for the proposed project (Appendix 9). The soil type at the proposed western expansion TSF site is of the Witbank (Wb) form and the soils at the proposed northern expansion TSF site are of the Hutton (Hu) and Nkonkoni (Nk) forms. • Due to the inherent soil constraints of the Witbank soils (disturbed soils), the proposed development is not anticipated to cause any significant cumulative impacts at the western expansion site. • The proposed northern expansion site is characterised by soils with a high agricultural capability. • The EMPr will commit the proponent to appropriate topsoil conservation.
The **National Forests Act (No. 84 of 1998)** is enabling legislation providing for sustainable forest use and management and provides special measures to protect trees and forests by prohibiting the destruction of natural forests, protecting areas and individual tree species and further providing measures to control and remedy deforestation. The Department of Environment, Forestry and Fisheries (DEFF) are the custodians of the National Forests Act. The list of protected tree species is contained in Regulation GNR690 of 2017 to the Act. The Act applies to the aspects proposed project pertaining to land clearance in that that no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree or any forest product derived from a protected tree, except under a licence or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated.	N/A	• A Terrestrial Biodiversity Assessment has been prepared for the proposed project (Appendix 14). No protected tree species occur within the proposed expansion sites.
The **Mine Health and Safety Act, No. 29 of 1996 and Regulations** provide for the protection of the health and safety of staff and other persons at mines and, for that purpose to promote a culture of health and safety; to provide for the enforcement of health and safety measures; to provide for appropriate systems of an employee, employer and State participation in health and safety matters; to establish representative tripartite institutions to review legislation, promote health and enhance properly targeted research; to provide for effective monitoring systems and inspections, investigations and inquiries to improve health and safety; to promote training and human resources development; to regulate employer and staff duties to identify hazards and eliminate, control and minimise the risk to health and safety; to entrench the right to	N/A	• The Applicant will ensure that operations are in line with the requirements of the Act and Regulations. • A commitment to abide by the Act and Regulations will be included in the EMPr.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT? (E.g., in terms of the National Water Act a Water Use License has / has not been applied for)
refuse to work in dangerous conditions; and to give effect to the public international law obligations relating to mining health and safety.		
The **Occupational Health and Safety Act, No. 85 of 1993 (OHSA)** provides for the safety and health of persons at work from hazards arising out of - or in connection with any work-related activities. It provides for a proactive attempt to prevent and avoid work-related injuries and illness. The Act places the onus on the employer to provide a safe workplace by identifying occupational hazards and implementing relevant precautionary measures; informing employees of hazards and providing the necessary training and personal protective equipment; and by recording and investigating incidents and implementing measures to avoid the reoccurrence of an incident. The Act provides for health and safety representatives or committees to provide structure and encourage employee involvement in health and safety-related aspects. The Act is supported by numerous Regulations and Codes of Practice, which give practical guidelines on how to manage health and safety issues related to specific aspects including safety, hazardous substances, fire, electrical machinery and installations, construction noise, driven machinery etc. The Department of Labour is the Competent Authority regarding the implementation of the OHSA.	N/A	• The Applicant will ensure that operations are in line with the requirements of the Act and Regulations. • A commitment to abide by the Act and Regulations will be included in the EMPr.
The **National Nuclear Regulator Act, No. 47 of 1999 (NNRA)** applies to the siting, design, construction, operation, decontamination, decommissioning and closure of any nuclear installation; vessels propelled by nuclear power or having radioactive material on board which is capable of causing nuclear damage; and any action which is capable of causing nuclear damage. The NNRA is regulated by the National Nuclear Regulator and Certificates of Registration are required for radiation sources above a certain threshold. The NNRA also makes provision for safety standards and regulatory practices by means of the regulations (GNR388 of 2006).	Refer to Section 10)a)v) for the historic radiological information.	• A radiation specialist has been appointed for the project. • The Applicant will ensure that operations are in line with the requirements of the Act and Regulations.
The National Screening Tool is a geographically based web-enabled application that allows the proponent seeking environmental authorization, in terms of EIA Regulations 2014, to screen their proposed site for any environmental sensitivity. The tool also provides site-specific EIA process and review information, and identifies related exclusions and/or specific requirements, including specialist studies applicable to the proposed site and/or development, based on the national sector classification and the environmental sensitivity of the site. Additionally, the tool allows for the generation of a Screening Report, referred to in Regulation 16(1)(v) of the EIA Regulations 2014, as amended, whereby a Screening Report is required to accompany any application for Environmental Authorisation.	Refer to: • Section 10)a) where the baseline conditions are described • Section 10)c)ii) where the potential impacts are assessed • Section 11)g) for the potential mitigation measures	A screening report has been compiled for the proposed project and indicated the following: • A portion of the proposed western expansion site intersects with the Gauteng Provincial Environmental Management Framework (GPEMF) Zone 1: Urban Development Zone, GPEMF Zone 3: High Control Zone (outside the development zone), and GPEMF Zone 4: Normal Control Zone. The intention of Zone 1 is to streamline urban development activities in it and to promote development infill, densification and concentration of urban development, in order to establish a more effective and efficient city region that will minimise urban

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT? (E.g., in terms of the National Water Act a Water Use License has / has not been applied for)**
As per GN960 of 2019, read with Section 24(5)(a) of the NEMA, an Environmental Screening Report (ESR) must be generated for the Environmental Authorisation application using the National Web-based Screening Tool. As per the requirement of GN320 and GN1150, prior to commencing with a specialist assessment, the current use of the land and the environmental sensitivity of the site under consideration identified by the national web-based environmental screening tool (screening tool), where determined, must be confirmed by undertaking a site sensitivity verification. GN320 and GN1150 prescribe the following for the site sensitivity verification: • The Site Sensitivity Verification must be undertaken by an environmental assessment practitioner or a specialist. • The Site Sensitivity Verification must be undertaken through the use of desktop analysis, using satellite imagery, a preliminary on-site inspection, and any other available information. The outcome of the Site Sensitivity Verification must be recorded in the form of a report that: • Confirms or disputes the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc. • Contains a motivation and evidence (e.g., photographs) of either the verified or different use of the land and environmental sensitivity. • Is submitted together with the relevant reports prepared in accordance with the requirements of the NEMA EIA Regulations (2014).	• Soil, Land Use and Land Capability Assessment (Appendix 9) • Palaeontological Impact Assessment (Appendix 11) • Watercourse Verification (Appendix 13) • Terrestrial Biodiversity Assessment (Appendix 14) • Screening Report (Appendix 16) • Site Verification Sensitivity Report (Appendix 17).	sprawl into rural areas. Zone 3 is sensitive to developments and the aim of this zone is to promote conservation, tourism and recreational activities. Zone 4 comprises of agricultural activities outside the development zone and therefore, agricultural and rural development supporting agriculture should be promoted (SAS, 2022). However, according to the City of Ekurhuleni RSDF, the application area falls within an area intended for "mining". • Aquatic Biodiversity Theme has a "very high" sensitivity • Palaeontology Theme has a "very high" sensitivity • Terrestrial Biodiversity Theme has a "very high" sensitivity • Agriculture Theme has a "high" sensitivity • Civil Aviation Theme has a "high" sensitivity • Animal Species Theme has a "medium" sensitivity • Plant Species Theme has a "medium" sensitivity • Archaeological and Cultural Heritage Theme has a "low" sensitivity • Defence Theme has a "low" sensitivity • A Site Sensitivity Verification Report (Appendix 17) has been compiled to adjust / verify the sensitivities of the environmental themes raised in the screening report. The above themes highlighted in the screening report have been considered in the impact assessment and EMPr sections of this study.
The CoE Regional Spatial Development Framework (RSDF) (2015) provides the framework for making resource-effective decisions regarding planning. The project area falls within Region D as per the CoE RSDF. Region D is characterised by three well-established urban nodes: Benoni, Brakpan and Springs. These areas are in a state of decay and are in need of maintenance and upgrade. Low-density residential housing components are associated with each of these urban nodes. Approximately 22% of the land in Region D is affected by surface mining (disturbed land, mine dumps and slimes dams). These surface mined areas are not considered practical for future development due to the high rehabilitation costs. Areas of underground mining could be at risk of mining-induced subsidence, but this is dependent on the depth of mining below ground level. Numerous areas of existing mining-induced subsidence or sinkholes have been identified and appear to follow the gold-bearing reef outcrop. Approximately 60% of Region D is classified as dolomitic land and 17% of the region is affected by surface-	Refer to Section 10)a)xiii) where the current socio-economic baseline of the area is characterised. This framework has also been taken into consideration in the need and desirability of the project (Refer to Section 5).	According to the City of Ekurhuleni RSDF, the application area falls within an area classified as "mining". The relevant national, provincial and local legislative requirements will be adhered to. The RSDF has been taken into consideration in determining the need and desirability of the project. A Dolomitic Risk Assessment will be conducted during the EIA Phase.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT? (E.g., in terms of the National Water Act a Water Use License has / has not been applied for)
exposed dolomite. Region D is located favourably in terms of the economic activity and employment area of Gauteng and Benoni, Brakpan and Springs are considered important growth nodes. The objective of the RSDF is to ensure continued functioning of the area (ecological/ agricultural/ open space) and to ensure that the area is not compromised. Developments within these areas should be limited to existing footprints, if present, and should avoid encroaching on natural or agricultural landscapes. Development should be undertaken in such a way that ecological and open space networks remain intact, and that fragmentation of the system, resulting in the isolation of ecologically important areas and open space, does not occur. The relevant environmental assessments should be undertaken for any proposed development within these areas. In addition, the relevant national, provincial and local legislative requirements must be adhered to for all proposed developments. The relevant national, provincial and local legislative requirements will be adhered to for the proposed development as described above.		
The City of Ekurhuleni (CoE) Integrated Development Plan (IDP) (2013/14 - 2015/16) provides the regional socio-economic context of the project area. The IDP states that the CoE has a total surface area of 1 975 km² that accommodates a population of approximately 3 million. Migration into the area is a key challenge, which is evident in the number of informal settlements and by the informal trading activity. The CoE is considered an industrial hub. Economically active people constitute 41.5% of the population. The area contributes approximately 6.1% to national production. Over the period 1996 to 2011, the economy grew by an estimated average of 3.2% per annum. The main contributing sectors have been identified as retail, entertainment, aviation, property development, mining and manufacturing (food and beverage, packaging, chemicals, metal, services, and other manufacturing services). The CoE has a 100-year history of mining which has resulted in environmental deficits including acid mine drainage, undermined degraded areas, and mine dumps containing radioactive materials. Approximately 41% of the CoE has been identified as being important for the protection of agriculture; 22% of this is of high importance, while 19% is of moderate to high importance. The natural environment of the CoE can be broken down as follows: 19% Critical Biodiversity Areas, 18% Ecological Areas, 1% Protected Areas, 16 Threatened Plant Species, 14 Threatened Animal Species and 10% Threatened Ecosystems. The industrial and urban development that has shaped the CoE has resulted in high levels of pollution impacting soil, water and air resources. It has also resulted in the degradation of ecosystems and the subsequent loss of biodiversity.	Refer to Section 10)a)xiii) where the current socio-economic baseline of the area is characterised. This framework has also been taken into consideration in the need and desirability of the project (Refer to Section 5).	This has been taken into consideration in determining the need and desirability of the project.
The Gauteng Province Environmental Management Framework (GPEMF) (2015) provides a framework to guide decision-making regarding land use at all levels of	This has been taken into consideration in determining	This has been taken into consideration in determining the need and desirability of the project.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process)	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT? (E.g., in terms of the National Water Act a Water Use License has / has not been applied for)
planning. According to the GPEMF, the project area falls within Zone 1: Urban Development Zone. The intention of Zone 1 is to streamline urban development activities and to promote development infill, densification and concentration of urban development, in order to establish a more effective and efficient city region that will minimise urban sprawl into rural areas.	the need and desirability of the project (Section 5).	
Gauteng Pollution Buffer Zones Guideline (2017) to ensure that buffer areas are developed between the pollution sources and human settlements. Such buffer zones are areas of land to diminish the deleterious effects of the pollution source to be buffered and are based on the understanding of the type of pollution and mode of dispersal. The purpose of the guideline is to ensure that residents are protected from air emissions from pollution generators and thereby establish buffers around them to ensure that only compatible land uses are allowed in the buffer areas. A best-case buffer of 1 000 m is generally recommended as dust levels can no longer be distinguished from ambient dust pollution at this distance. A worst-case buffer of 500 m is acceptable provided that regular wetting is applied.	Refer to Section 10)a)ii) for a description of the ambient air quality within the project area. Refer to Sections 10)c) and 11)g) for a high-level overview of potential impacts and associated mitigation measures, respectively.	The proposed TSF expansion site will be in close proximity to nearby residential areas. The proposed western expansion will be approximately ± 140 m from Modder East and ± 110 m from Skoonplaas. The proposed northern expansion will be approximately 150 m from Skoonplaas. The guideline provides a generic maximum buffer of 1000 m between tailings storage facilities and residential developments. Although the guideline recommends a maximum buffer of 1000 m, it is not a legislated requirement. The outcomes of the specialist studies in the EIA Phase will also be used to recommend a buffer as necessary. An EMPr will be compiled to ensure negative impacts are managed, mitigated and to some extent, avoided. Commitments to implement dust suppression measures for all phases of the project and waste management measures will be included in the EMPr. The EMPr will be a binding document and enforceable under law.
International Council on Mining and Metals (ICMM): Global Industry Standard on Tailings Management (GISTM) (2020) is a campaign that strives to accomplish the ultimate goal of zero harm to people and the environment. This standard provides a global integrated approach / framework to safe tailings management whilst promoting safety and preventing the catastrophic failure of tailings facilities. It represents guidance in terms of transparency, accountability and safeguarding of people's rights. To conform with the standard, operators / entities must adhere to specified measures and implement best practises encompassed in 6 Topic Areas which are further subdivide into 15 Principles and 77 auditable Requirements.	NA	The GISTM is currently a voluntary guideline. It is anticipated that the SANS10286 will be amended in 2023. These Regulations are largely aligned with the GISTM, and compliance with these Regulations will be mandatory. A detailed Dam Break Analysis (DBA) will be conducted as part of the EIA Phase.
National Road Traffic Act (NRTA) (Act No. 93 of 1996) and the **National Land Transport Act (NLTA) (Act No. 5 of 2008)** provides for the planning and development of transport systems and the safe use of roads. **Gauteng Transport Infrastructure Act, 2001 (Act No 8, 2001)** provides for the planning, design, development, construction, financing, management, control,	NA	The Gauteng Provincial Department of Roads and Transport (GPDRT or Gautrans), has a planned provincial road (K106) which will traverse the proposed western expansion site. The proposed road (K106) currently extends through the existing TSF (Figure 5). The proposed project will not directly affect any existing public roads.

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maintenance, protection and rehabilitation of provincial roads, railway lines and other transport infrastructure in Gauteng.		Gautrans has been identified as a stakeholder and will be afforded an opportunity to provide comments during the 30-day review and comment period.
The Civil Aviation Act, 2009 (CAA) (Act No. 13 of 2009) governs civil aviation in the Republic of South Africa. The Act provides for the establishment of a stand-alone authority mandated with controlling, promoting, regulating, supporting, developing, enforcing, and continuously improving levels of safety and security throughout the civil aviation industry. This mandate is fulfilled by the South African Civil Aviation Authority (SACAA), an agency of the Department of Transport (DoT). The SACAA achieves the objectives of the CAA by complying with the Standard and Recommended Practices (SARPs) of the International Civil Aviation Organisation (ICAO) while considering the local context when issuing the South African Civil Aviation Regulations (SA CARs). To ensure civil aviation safety, all proposed development or activities that could potentially affect civil aviation must be assessed by the SACAA.	Refer to Appendix 17 for the Site Verification Sensitivity Report.	A Site Sensitivity Verification Report has been compiled to assess the sensitivity in terms of the Civil Aviation theme raised in the screening report. The "high" sensitivity has been disputed and argued to rather have a "low" sensitivity. The proposed activities are located within 8 km of an aerodrome, the Springs Airfield. The South African Civil Aviation Authority (SACAA) has been identified as a stakeholder and will be afforded an opportunity to provide comments during the 30-day review and comment period. No comments were received from the SACAA.

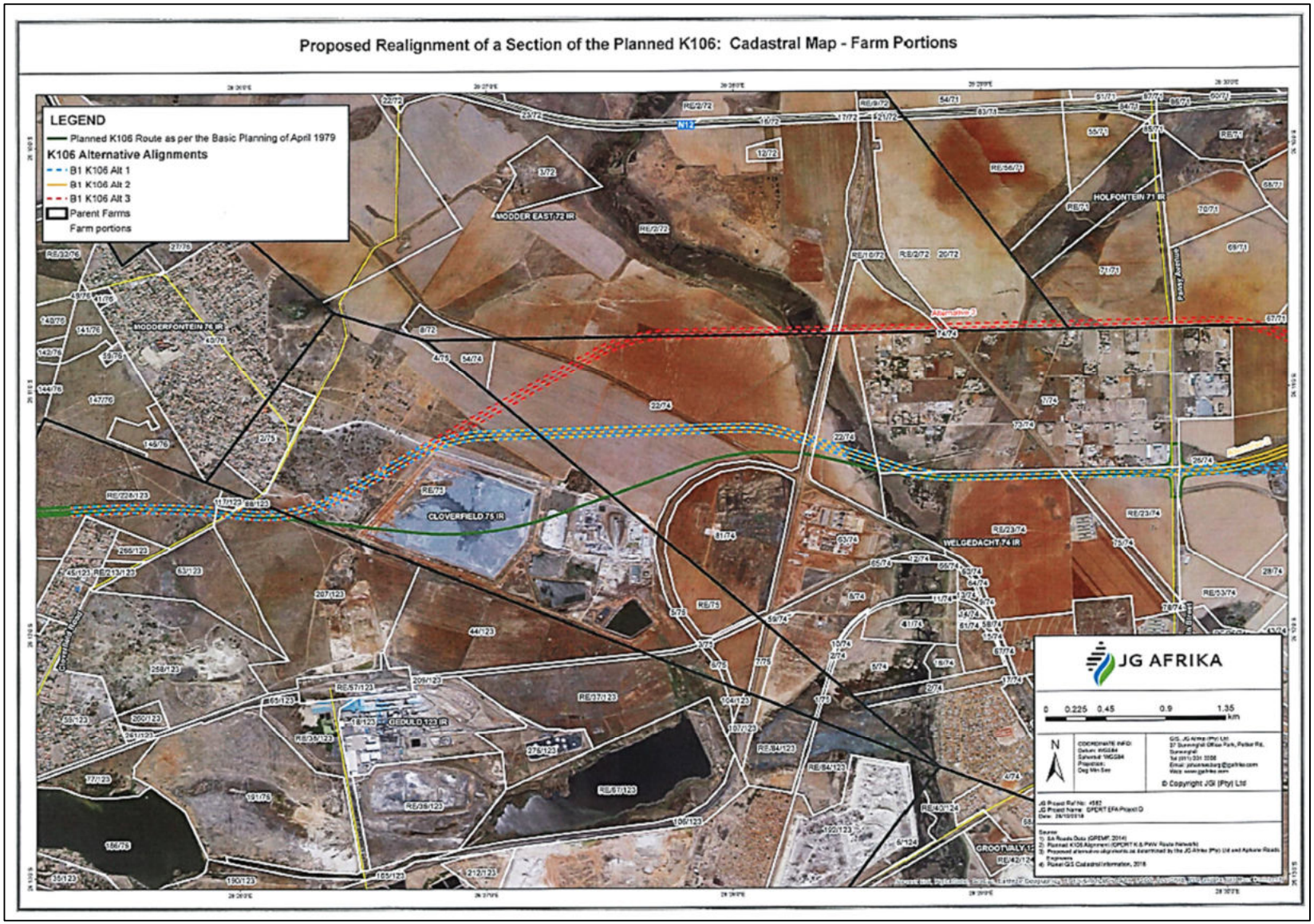

Figure 5. Planned provincial K106 route (JG Afrika, 2018)

5) NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location)

The concept of "need and desirability" relates to, amongst others, the nature, scale and location of the development being proposed, as well as the wise use of land. Essentially, the concept can be explained in terms of the general meaning of its two components in which "need" primarily refers to time and "desirability" to place (i.e. is this the right time and is it the right place for locating the type of land-use / activity being proposed?) However, "need" also relates to the interests and needs of the broader public. These two components are interrelated and must be considered in an integrated and holistic manner (Need and Desirability Guideline, GN891 of 2014).

The consideration of "need and desirability" during an environmental authorisation application process must be addressed during all stages of the EIA process. During the Scoping phase (present phase) the need and desirability guideline questions should be used to identify key issues and alternatives and will help to determine which areas require further investigation in the EIA phase (to follow), and which areas do not require further information. This process ensures that all the relevant aspects are taken into account in order to adequately consider "need and desirability".

This section aims to motivate the need and desirability of the proposed development, including the need and desirability of the development in the context of the preferred location and has been compiled in accordance with the NEMA Need and Desirability Guideline (GN891 of 2014) and is tabulated in Table 6.

The purpose of a TSF is to contain tailings (waste material) generated from a gold processing plant. The capacity of the existing TSF is limited to 3 to 4 remaining years. An opportunity exists to extend the life of the processing plant by 10 years through expanding the current TSF. The primary need for the expansion of the TSF is to allow for the continued operation of the processing plant at NKGM, thereby delaying the closure of the plant.

The location of the proposed TSF expansion is dependent on the position of the current TSF and existing supporting infrastructure. The current RWD will also need to be refurbished as additional capacity will be required to collect and contain water removed from the expanded TSF. The sites earmarked for the TSF expansion are considered to be already largely impacted by anthropogenic factors. The northern site has been disturbed by agriculture, and the western site has been disturbed by previous mining activities and buildings. The entirety of NKGM's lease area is zoned for mining. Expansion of the existing TSF prior to closure maximises the use of existing resources and infrastructure.

The proposed project will allow NKGM to optimise the mineral extraction and processing of the gold resources at Gold One's other authorised mining projects. Continued operations will allow NKGM to continue positively add to the nation's GDP. According to the mine's approved SLP (Social and Labour Plan), approximately 43 020 people depend on Modder East Operations for their livelihood (directly and indirectly), and mine expenditure and taxes add approximately R274 million to the economy annually. NKGM has provided direct employment opportunities for over 2 600 people (NKGM SLP, 2021). If the proposed project is authorised and implemented, continued employment opportunities will be secured for a portion of employees which will result in continued incomes and associated downstream benefits.

Table 6. Need and desirability assessment

Question	Response and reference in report
Securing ecologically sustainable development and use of natural resources	
How will this development (and its separate elements / aspects) impact the ecological integrity of the area?	
1.1. How were the following ecological integrity considerations taken into account?: 1.1.1. Threatened Ecosystems 1.1.2. Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure 1.1.3. Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs"), 1.1.4. Conservation targets, 1.1.5. Ecological drivers of the ecosystem, 1.1.6. Environmental Management Framework, 1.1.7. Spatial Development Framework, and 1.1.8. Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.).	As part of the Scoping phase the following specialist investigations were undertaken to determine the existing ecological integrity of the site: • Terrestrial Faunal and Floral Biodiversity [Section 10)a)xii), Appendix 14] • Soil and Land Capability [Section 10)a)vii), Appendix 9] • Watercourse Verification [Section 10)a)xi), Appendix 13] The project area falls within the Grassland Biome, within the Mesic Highveld Grassland Bioregion and within the Soweto Highveld Grassland vegetation type which is a threatened ecosystem listed as Vulnerable in terms of Section 52 of NEM:BA. The vegetation associated with the project area is no longer representative of Soweto Highveld Grassland and floral diversity is low. Preferred faunal and floral habitat has been negatively affected by historic mining activities and current anthropogenic activities, vegetation composition has changed, and high levels of alien and invasive vegetation is present. Sections of the proposed infrastructure at the western expansion site will pass through both a Critical Biodiversity Area (CBA) and an Ecological Support Area (ESA). The specialist confirmed that the project area is not regarded as a CBA (important area) or a ESA based on the degraded nature of the site and that proposed expansion sites have a low ecological sensitivity and therefore do not contribute to conservation target areas. As the proposed site has been transformed by historical mining and agricultural activities, no natural ecological drivers remain. According to the Gauteng Province Environmental Management Framework (GPEMF) (2014), a portion of the proposed western expansion site intersects with the GPEMF Zone 1: Urban Development Zone, GPEMF Zone 3: High Control Zone (outside the development zone), and GPEMF Zone 4: Normal Control Zone. The intention of Zone 1 is to streamline urban development activities in it and to promote development infill, densification and concentration of urban development, in order to establish a more effective and efficient city region that will minimise urban sprawl into rural areas. Zone 3 is sensitive to developments and the aim of this zone is to promote conservation, tourism and recreational activities. Zone 4 comprises of agricultural activities outside the development zone and therefore, agricultural and rural development supporting agriculture should be promoted (SAS, 2022). However, according to the CoE RSDF, the application area falls within an area zoned for mining (Figure 37). The proposed project is an extension to an existing mining facility, not a new application, and will utilise an area transformed by historic mine dumps, old structures / ruins, alien vegetation, and excavations. No rivers, wetlands or freshwater ecosystems occur within the proposed development footprint. According to the 2018 National Biodiversity Assessment (NBA) database, a depression wetland is situated approximately 500 m north-northwest from the edge of the proposed western expansion site and an unchanneled valley bottom wetland is situated approximately 500 m to the north of the proposed northern TSF site. A hillslope wetland was identified by the specialist which is situated 500 m south-west of the proposed western TSF site. According to the Gauteng C-Plan, buffers / regulated areas associated with a non-perennial river and the aforementioned depression wetland intersect with the study area. The closest river, the Blesbokspruit, is located approximately 1.4 km east of the study area. The Cowles Dam lies approximately 1.5 km south and the Alexander Dam lies approximately 3 km south-west of the site.

Question	Response and reference in report
	The Blesbokspruit Ramsar site is located approximately 3 km to the south-east of the project area and Marievale Nature Reserve is a further 7 to 10 km in the same direction. The provincial and international frameworks and guidelines considered as part of this Scoping Report are detailed in Table 5. The soils at the proposed western site (soil type: Witbank (Wb) form) have very low agricultural potential and are not suitable for grazing or afforestation. The soils at the proposed northern site (soil types: Hutton (Hu) and Nkonkoni (Nk) forms) are suitable for arable agriculture and associated with moderate to good land capability.
1.2. How will this development disturb or enhance ecosystems and / or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	The species composition of the Degraded Grassland sub-unit habitat (associated with both northern and western expansion sites) contains some scattered native floral communities. The Modified Grassland sub-unit habitat (associated with both northern and western expansion sites) has a vegetation cover sustaining a high abundance of AIPs. The Transformed habitat unit (associated with both northern and western expansion sites) is characterised by vegetation clearance (partial or complete) and the transformation of natural vegetation due to agricultural practises (resulting in monoculture floral communities) and historic mine activities (resulting in homogenous stands of AIPs). The vegetation unit associated with the project area is no longer representative of intact Soweto Highveld Grassland as floral diversity is low. During construction, vegetation will be removed and soil will be disturbed. The disturbance of surrounding vegetation due to vehicle and personnel movement during all the phases of the project may result in the introduction and proliferation of AIPs. Clearing of vegetation, removal of topsoil, and levelling of ground is anticipated to increase the extent of bare ground and hardened surfaces with implications for infiltration, run-off and sedimentation. Faunal species may be disturbed or harmed during all phases of the project. The surrounding environment could be polluted by contaminants such as fuel and oil from vehicles, litter generated by employees, spillages of hazardous materials and soil runoff. The proposed western expansion site will be located on an area largely characterised by historical mining activities and infrastructure (remnants of old mining buildings). The western expansion site is dominated by AIPs; however, at least 1 species of conservation concern (SCC), *Hypoxis hemerocallidea* (Least Concern, Orange Listed) was recorded during the ecologist's field investigation. The unsuccessful rehabilitation of disturbed areas can lead to a decrease in biodiversity due to the establishment of grass monocultures, invasion by alien invasive plant species and erosion. Although the areas associated with the proposed expansion project are dominated by alien plant species, the degraded grassland does support indigenous species, including SCC. This aspect will be fully investigated during the EIA phase and will include detailed mitigation measures to minimise any social, economic and biophysical impacts that might arise during all phases, including post-closure. Due to the disturbed nature of the footprint areas, it is not envisaged that any offsets will be required.
1.3. How will this development pollute and / or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	The proposed TSF expansion will potentially result in a decrease in ambient air quality through increased dust and particulate matter generation, and may potentially result in groundwater contamination, although this is expected to be minimal. The TSF expansion has been designed with the following in mind to avoid and minimise biophysical impacts: • The TSF expansions will be designed with Class C barrier systems and with adequate drainage systems, therefore, seepage is expected to be negligible.

Question	Response and reference in report
	• Tailings will be deposited on the expanded TSF as a wet slurry and maintained wet throughout operation. This will reduce air quality impacts during operation. This will be fully investigated during the EIA phase and will include detailed mitigation measures to minimise any social, economic and biophysical impacts that might arise during all phases, including post-closure. Commitments to implement dust suppression and waste management measures for all phases of the project will be included in the EMPr, a legally binding document.
1.4. What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and / or recycle the waste? What measures have been explored to safely treat and / or dispose of unavoidable waste?	The proposed TSF expansion is considered a storage facility for mine-related waste. A WML is being applied for as part of the EA application. The project will also generate general (domestic) waste and mining waste. Slurry tailings / mine waste (generated from the removal and processing of minerals) are considered hazardous waste and will be deposited on the expanded TSF. Non-hazardous domestic and industrial waste such as paper / cardboard, empty cans, glass, steel and plastic containers, scrap metal, builder's rubble, piping and tubing (plastic, metal and rubber), timber, batteries and tyres will be temporarily stored at the existing general waste storage / salvage area (hard-standing area for covered bins / skips). The Applicant will follow the appropriate waste recovery and reduction strategies. Waste production will be controlled and reduced through the accurate ordering of materials and inputs and the avoidance of over-ordering and potential wastage of materials. All recyclable waste will be collected by a contractor where it will be recycled off-site. Only materials which cannot be reused, recycled or recovered will be disposed of at an appropriately licensed facility by a licensed contractor. The following actions / strategies will be put into practice to minimise the accumulation / generation of waste on site: • All personnel working on the mine site will have undergone induction, which includes waste management practices on the mine site • All waste will be separated and disposed of at a licensed landfill facility.
1.5. How will this development disturb or enhance landscapes and / or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	The proposed TSF expansion will change the visual landscape of the area. The Visual Impact Assessment (VIA) was conducted (Appendix 6). The VIA indicated that sensitive visual receptors will experience negative visual impacts. Skoonplaas will have a permanent view of both the western and northern expansions. Modder East will have a permanent view of the western expansion. The project does not constitute an irreplicable loss of visual resources. The project is not expected to disturb or impact on the nation's cultural heritage. A Heritage Impact Assessment was conducted (Appendix 10). A graveyard exists approximately 150 m to the east of the proposed northern expansion site. This cemetery does not fall within the proposed TSF footprint and will therefore not be disturbed. Measures to manage any disturbance to the graveyard and a "Chance Finds Protocol" will be included in the EMPr. A Palaeontological Study was conducted (Appendix 11). The study confirmed that there were no fossils of any age or kind in the proposed project footprint. A "Chance Finds Protocol" will be included in the EMPr.
1.6. How will this development use and / or impact non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise	Resources which will be utilised for the project include water and electricity. NKGM is in the process of establishing its own potable water treatment facility on site, utilising excess groundwater that is being removed for mining purposes. This will reduce the reliance on water service providers such as Rand Water. Electricity is currently sourced from Eskom but limited additional (if any) electricity will be required for the expansion of the TSF relative to current electricity consumption.

Question	Response and reference in report
and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	Soil is also considered a non-renewable resource. The majority of the soils in the study area (83% of the study area) are disturbed soils of the Witbank formation that have been subjected to physical disturbance such as mining, building or cultivation. These soils are in a disturbed state already in which the potential for cultivation is non-existent or will require extensive management. Land with high agricultural potential is also considered a non-renewable resource. The proposed northern expansion site will be developed on a portion of agricultural land characterised by soils with a high agricultural capability (4.73 ha) and on land characterised by soils with a moderate agricultural potential (16.53 ha). Mitigation measures to preserve valuable topsoil will be included in the EMPr.
1.7. How will this development use and / or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and / or impact on the ecosystem jeopardise the integrity of the resource and / or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts 1.7.1. Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life) 1.7.2. Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources this the proposed development alternative?) 1.7.3. Do the proposed location, type and scale of development promote a reduced dependency on resources?	Due to the proposed project being an "expansion" activity of an existing mining operation, additional resources utilised for the proposed development will be minimal. The only resources to be used include water and electricity. A small portion of soil on high potential agricultural land (4.73 ha) will be lost to the project. Mitigation measures regarding the protection of high potential agricultural land will be included in the EMPr. Electricity is currently sourced from Eskom but limited additional (if any) electricity will be required for the expansion of the TSF relative to current electricity consumption NKGM is in the process of establishing its own potable water treatment facility on site, utilising excess groundwater that is being removed for mining purposes. The proposed expansion project does not pose any competition for the use of resources, nor does it exacerbate resource dependency. Mining by its nature relies on natural resources, and through that creates economic growth. NKGM is an existing mine and expanding the TSF will allow the processing plant to continue operating once the underground resources at NKGM are exhausted. Gold One has other approved Environmental Authorisations and Mining Rights for future operations nearby. Expanding the TSF will create capacity to commence mining these deposits and transporting the ore to NKGM for processing in the existing plant.
1.8. How was a risk-averse and cautious approach applied in terms of ecological impacts? 1.8.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)? 1.8.2. What is the level of risk associated with the limits of current knowledge? 1.8.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	The impact assessment methodology is described in Section 10)c)i). The impacts on terrestrial and wetland fauna and flora were thoroughly investigated in the Terrestrial Biodiversity Assessment (Appendix 14). Refer to Section 10)a)xii). Some species and taxa within the study area may have been overlooked during the assessment. Due to the nature and habits of most faunal taxa, the high level of surrounding anthropogenic activities and the time (season) of the assessment, it is unlikely that all species would have been observed. Therefore, site observations were compared with literature studies where necessary, to identify potential SCC that may be present in the area, and to plan ahead in the event that these species are discovered.

Question	Response and reference in report
	This will be further considered during the EIA phase and gaps, uncertainties, and assumptions will be included in the EIA report. A detailed Dam Break Analysis will be conducted as art of the EIA Phase. This will allow for a full identification of any impacts that may occur on the receiving environment should there be a break in the TSF. The TSF will be designed using best practice and the Code of Practice for Mine Residue (SANS 10286) which will include stringent safety precautions to prevent TSF failure. The TSF will be managed as a high hazard facility in terms of the Code of Practice.
1.9. How will the ecological impacts resulting from this development impact people's environmental rights in terms following: 1.9.1. Negative impacts: e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts? 1.9.2. Positive impacts: e.g. improved access to resources, improved amenities, improved air or water quality, etc. What measures were taken to enhance positive impacts?	Negative impacts on the environmental rights of people will be fully addressed in the EIA phase. Mitigation and management measures will be included. The preliminary potential negative impacts include reduction in air quality as a result of dust and particulate matter, nuisance factors such as dust and noise (during the construction phase only), the potential for an influx of people into existing informal settlements in the area in search of jobs, and the loss of agricultural land (high potential land: 4.73 ha, moderate potential land: 16.53 ha). There is some potential for an impact on community health. A Community Health Assessment and a Radiation Assessment are being conducted as part of the EIA phase. The western TSF will be constructed on an area that currently falls within the mine's surface lease area. This area is currently undeveloped but has historically been disturbed by mining activities; remnants of old mine infrastructure and buildings are located in the area. This is therefore "open space", but not an amenity that is used by residents. The increased TSF footprint will result in a decrease in the size of this open space. The preliminary potential positive impacts associated with the development include the delay of closure of the NKGM operations and associated postponement of retrenchments associated with closure, as well as the provision of approximately 50 temporary employment opportunities during construction.
1.10. Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage sites, opportunity costs, etc.)?	The ecologist indicated that the proposed expansion sites currently provide limited ecosystem services as the land has been transformed by historic mine dumps and agricultural activities (Appendix 14). The proposed TSF expansion project will therefore likely not have an impact on ecosystem services. The baseline environment of the project area has a low to moderately low sensitivity in terms of terrestrial ecology. The footprint of the proposed western expansion site falls within the mine's fenced off area, and access to this area is therefore controlled. A portion of the proposed northern expansion site (high potential land: 4.73 ha, moderate potential land: 16.53 ha) is currently agricultural land. The use of this area for agriculture will be lost and will result in a permanent land change. The NKGM lease area is surrounded by mixed uses including agriculture, residential (formal and informal) and industrial. Impacts to air quality and groundwater (although considered unlikely) may potentially have an impact on agricultural activities. Changes to air and water quality may potentially impact human wellbeing and may potentially have a negative impact on property prices in residential areas closest to the site. This will be fully investigated during the EIA phase. The TSF expansion is not expected to result in the loss of livelihoods or destruction of any important heritage resources (see point 1.5 and Section 10)a)viii)).
1.11. Based on all of the above, how will this development positively or negatively impact ecological integrity objectives / targets / considerations of the area?	Apart from the permanent loss of agricultural land, the development is not expected to significantly impact the ecological integrity, objectives, targets or considerations of the area due to the project being an expansion of existing activities, and the expansion areas already being significantly affected by anthropogenic activities.

Question	Response and reference in report
1.12. Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?	NKGM is an existing mine and therefore no location alternatives were assessed. The location of the TSF expansion is constrained by the existing TSF and associated infrastructure. The location of the expansion sites and associated infrastructure are limited to areas previously transformed by anthropogenic activities and have been kept to the minimum extent possible. Currently this is considered the best practicable environmental option but further options will be considered during the EIA phase. Refer to point 1.3 above for the details of how the proposed activities have been designed to minimise biophysical and social impacts.
1.13. Describe the positive and negative cumulative ecological / biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area.	Refer to Section 10)c)ii) for a high-level overview of preliminary impacts identified. Refer to Section 10)c)iii) for the recommended mitigation measures. Cumulative impacts will be considered during the EIA phase. The finalised specialist studies and modelling (including Air Quality and Groundwater) will inform the determination of cumulative impacts. A traffic impact assessment will be conducted during the EIA phase to determine the cumulative traffic impact on traffic volumes, pavement quality and road safety.
Promoting justifiable economic and social development	
1.14. What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?: 1.14.1. The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area, 1.14.2. Spatial priorities and desired spatial patterns (e.g. need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.), 1.14.3. Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.), and 1.14.4. Municipal Economic Development Strategy ("LED Strategy").	A Socio-Economic Baseline study was conducted (Appendix 15). The socio-economic context of the region and the area around NKGM are described in Section 10)a)xiii). The TSF expansion will increase the footprint of the existing TSF within the mine's surface lease area. The entirety of the surface lease area is zoned for mining and therefore no change of land use will be required. Section 4) details the legislation, guidelines and strategic documents that have been considered. Documents that were consulted to inform the socio-economic context include: • Ekurhuleni Integrated Development Plan (2016-2021) • Ekurhuleni Integrated Development Plan (2016-2021) 2020/2021 Review • Ekurhuleni Regional Spatial Development Framework: Region D (Final 2015) • Ekurhuleni Built Environment Performance Plan (2016) • Ekurhuleni Corporate Disaster Management Plan (2011) • Bioregional Plan for Ekurhuleni Metro (2014) • Gauteng Provincial Environmental Management Framework (2021) • Census data from 2011 census and 2016 Community Survey • Gauteng Informal Settlement Status (2013) • Gauteng Pollution Buffer Zones Guideline (2017) • Previous SIAs, EIAs and EMP, and Water Use Licence Applications for Modder East, and for Gold One's subsidiary projects including Cons Modder and Holfontein • Previous Public Participation conducted as part of the above-mentioned studies • Current air quality and groundwater monitoring reports for NKGM • Financial Provision report for New Kleinfontein Goldmine (Pty) Ltd, Modder East • Current and historical maps and satellite imagery.
1.15. Considering the socio-economic context, what will the socio-economic impacts be on the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?	The proposed project is an expansion of an existing TSF that will not result in any further economic benefits for the employees or nearby communities. However, if the project is authorised, it will provide continuous employment a portion of current NKMG employees and employees from other Gold One operations (as surrounding mines process their ore at the existing NKGM processing plant).

Question	Response and reference in report
1.15.1. Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?	The final footprint of the proposed TSF will be in close proximity to existing residential areas. The western TSF boundary will be 140 m from houses in Modder East along Cloverfield Road and 110 m from dwellings on the southern edge of Skoonplaas informal settlement. The northern TSF expansion will be 150 m from dwellings on the eastern border of Skoonplaas. The preliminary potential negative socio-economic impacts include: the potential decrease in air quality and associated dust, pollution and community health impacts, a visual intrusion on the residents of Skoonplaas and Modder East suburbs, a minor increase in noise during construction, the potential in-migration of job seekers and associated expansion of informal settlements, potential traffic impacts, a potential decline in property values in Modder East/ Eastvale and community health and safety risks including those from TSF failure. This aspect will be addressed during the EIA phase.
1.16. How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?	The development will contribute to the ongoing operation of NKGM's processing plant and will delay closure of the plant for a further 10 years. Although this will not create additional employment opportunities, it this will allow for the continued employment for some of the NKGM employees. This will be of significant benefit to the existing employees of Gold One and will allow Gold One to continue to positively contribute to the regional economy and GDP. The TSF expansion is however unlikely to meet any specific needs and interests or result in positive benefits for the communities surrounding the mine. This aspect will be addressed during the EIA phase.
1.17. Will the development result in equitable (intra- and inter-generational) impact distribution, in the short and long-term? Will the impact be socially and economically sustainable in the short- and long-term?	The project will be economically sustainable in the short term (10 years) as it will allow NKGM to continue processing gold and employing people in their surface operations. NKGM conducts an Annual Financial Provision Report (in terms of Section 24P and Regulation 1147 of the National Environmental Management Act, Act No. 107 of 1998, as amended) which includes an Annual Rehabilitation Plan, Final Rehabilitation, Decommissioning & Mine Closure Plan and an Environmental Risk Assessment Report. The Financial Provision for closure and rehabilitation costs are updated annually to cater for inflation. Financial Provision for closure, rehabilitation and long-term monitoring will be defined and incorporated into NKGM's existing financial provision to ensure that the project is economically sustainable in the long-term. This will be fully investigated during the EIA phase and will include detailed mitigation measures that will need to be implemented to minimise any social, economic and biophysical impacts that might arise during all phases, including post-closure.
1.18. In terms of location, describe how the placement of the proposed development will: 1.18.1. result in the creation of residential and employment opportunities in close proximity to or integrated with each other, 1.18.2. reduce the need for transport of people and goods, 1.18.3. result in access to public transport or enable non-motorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms of public transport), 1.18.4. compliment other uses in the area, 1.18.5. be in line with the planning for the area, 1.18.6. for urban related development, make use of underutilised land available with the urban edge,	Approximately 50 temporary employment opportunities will be created during construction. No additional employment opportunities will be created during the operational phase. The expanded TSF will delay closure of surface activities and allow for the continued employment of some of the existing surface employees at NKGM. The project will not reduce the need for transport of people and goods or result in changes to public transport. The proposed project will not improve access to public transport or enable non-motorised and pedestrian transport. NKGM is an existing mine and therefore expanding the TSF in an area zoned for mining is complementary to the existing land use for that particular area. The area has not been designated or zoned for any other use. Apart from the loss of agricultural land (high potential land: 4.73 ha, moderate potential land: 16.53 ha), the surrounding mining, industrial and residential land uses will continue to operate concurrently with the project development.

Question	Response and reference in report
1.18.7. optimise the use of existing resources and infrastructure, 1.18.8. opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement), 1.18.9. discourage "urban sprawl" and contribute to compaction/densification, 1.18.10. contribute to the correction of the historically distorted spatial patterns of settlements and the optimum use of existing infrastructure in excess of current needs, 1.18.11. encourage environmentally sustainable land development practices and processes, 2.5.12. take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.), 1.18.12. the investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential), 1.18.13. impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and 1.18.14. in terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?	According to the CoE RSDF for Region D, the proposed areas associated with the expansion projects is classified as "mining" (Figure 37). Should the proposed expansion not go ahead, NKGM will commence with closure as planned in 2027 there would be an opportunity cost as this would not extend the life of the processing plant and associated established infrastructure. Decommissioning would involve the retrenchment of the approximately 2 600 employees The project is not related to urban development. The proposed project will not result in the construction of bulk infrastructure for public use. Most of the infrastructure will be removed at closure. The TSF will be capped and rehabilitated to an artificial mountainous / hill feature. The project is unlikely to result in urban sprawl. The mine will further discourage employees from settling within the Skoonplaas community. Any potential influx of job seekers into the area will be discouraged. Expanding the existing TSF is considered the optimal use of resources and infrastructure. The location of the TSF is limited by the need to be in close proximity to the existing mineral resource, gold processing plant and infrastructure. Infrastructure has been restricted to areas previously transformed by historic mine dumps and agricultural activities. The proposed expansion sites are in close proximity to the existing processing plant. The expansion of the TSF is not expected to result in any changes to existing and planned settlements in the area. No resettlement is required. The potential exists however, for the negative impacts detailed in point 2.2 above to have some impact on surrounding settlements including Skoonplaas informal settlement and Modder East suburb. This will be further investigated in the EIA phase. A Heritage Impact Assessment for the project was conducted (Appendix 10). A graveyard is located approximately 150 m from the northern TSF expansion. It does not fall within the footprint of the TSF and will therefore not be disturbed. Mitigation measures will be implemented to ensure it is protected. Since NKGM is an existing mine with an existing TSF, the sense of place of the area will not be significantly altered.
1.19. How were a risk-averse and cautious approach applied in terms of socio-economic impacts? 1.19.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)? 1.19.2. What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge? 1.19.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	The census data used in the report is assumed to be the most current source of official statistics and this been used to generate a baseline profile of the area. This data may now be out of date to some degree and may no longer accurately reflect the current socio-economic profile. This aspect will be fully considered during the EIA phase and gaps, uncertainties and assumptions will be included in the EIA report.
1.20. How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following: 1.20.1. Negative impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?	Refer to point 2.2 above. This will be investigated during the EIA phase. The anticipated positive and negative socio-economic impacts will be determined and scored, and management measures suggested to enhance positive impacts and reduce negative impacts.

Question	Response and reference in report
1.20.2. Positive impacts. What measures were taken to enhance positive impacts?	
1.21. Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts (e.g. over utilisation of natural resources, etc.)?	This aspect will be addressed during the EIA phase. The surrounding suburbs and communities are largely urban comprising of established suburbs and informal settlements. Community health, air quality, groundwater and radiation assessments are being undertaken as part of the EIA phase. These studies will be used to determine any expected impacts on livelihoods, and human health and wellbeing.
1.22. What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	NKGM is an existing mine and therefore there can be no location alternatives. The location of the TSF expansion is constrained by the existing TSF and associated infrastructure. The current layout is considered the best practicable environmental option but further options will be considered during the EIA phase. Refer to point 1.3 above for the details of how the proposed activities have been designed to minimise biophysical and social impacts.
1.23. What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?	NKGM is an existing mine and therefore location alternatives are constrained by proximity to the existing TSF and processing plant. A comprehensive public participation process will be undertaken for the project. This process is guided by Chapter 6 of the EIA Regulations (GNR982 of 2014). The TSF will be designed using best practice and the Code of Practice for Mine Residue (SABS 0286:1998) which will include stringent safety precautions to prevent TSF failure. The TSF will be managed as a high hazard facility in terms of the Code of Practice. This will be further addressed during the EIA phase and the development of an EMPr. The EMPr will provide mitigation measures for any expected impacts on all sectors of society and include grievance management measures. The EIA will also include Financial Provision for closure to ensure that the rehabilitation and any long-term impacts of the expanded TSF are adequately provided for.
1.24. What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	The proposed development is not anticipated to significantly affect access to any environmental resources required to meet basic human needs. There may be negative impacts on air quality surrounding the site which will be further considered and assessed during the EIA phase.
1.25. What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	This will be further addressed during the EIA phase and the development of an EMPr. The EMPr will provide mitigation measures for any expected impacts throughout the life cycle of the project – construction, operation, decommissioning, closure, and post-closure. A detailed Dam Break Analysis (DBA) is also being conducted during the EIA phase. The DBA will assess the potential zone of influence, population at risk, potential loss of life and environmental impacts, the results of which will be included in the EIA. The TSF should be designed and operated using best practice and the Code of Practice for Mine Residue (SANS 10286) that include stringent safety precautions to prevent TSF failure. The proposed activities will be operated in strict accordance with the requirements of the Mine Health and Safety Act, No. 29 of 1996. The EIAR will also include Financial Provision for closure to ensure that the rehabilitation and any long-term impacts of the expanded TSF are adequately provided for. Refer to point 2.4 for further details on Financial Provision.

Question	Response and reference in report
1.26. What measures were taken to: 1.26.1. ensure the participation of all interested and affected parties, 1.26.2. provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, 1.26.3. ensure participation by vulnerable and disadvantaged persons, 1.26.4. promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means, 1.26.5. ensure openness and transparency, and access to information in terms of the process, 1.26.6. ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition was given to all forms of knowledge, including traditional and ordinary knowledge, and 1.26.7. ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein were promoted?	A comprehensive public participation process will be undertaken during all phases of the EIA process. The public participation process as per the requirements of Chapter 6 of the EIA Regulations (GNR982 of 2014) is detailed in Section 9). Public participation has been designed to be as inclusive as possible. It will comprise of media notices (newspapers), site notices, information booklets (including a non-technical summary of the Scoping Report and EIA), written notification letters to landowners and adjacent landowners, Open Days and focus group meetings. Documentation will be available in several accessible locations for review. Options for commenting via email, SMS, telephone and in writing are available. Women and the youth, as part of the greater affected communities, have been included in information dissemination, and are allowed equal opportunities to participate in the process. A translator will be present at Open Days as needed. During the public participation process, IAPs will be made aware of the legislated environmental processes and their rights. The specialist findings will also be made available during the EIA and feedback process.
1.27. Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g.. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)	The mine has an existing approved SLP (Social and Labour Plan). Ongoing operational activities at NKGM will be in line with the existing SLP until underground mining ceases. The TSF expansion will allow surface activities associated with the existing processing plant to continue at NKGM. The proposed project constitutes an expansion and will therefore not create additional employment opportunities during the operational phase. However, it will allow for the continued employment for some of the existing surface employees of NKGM.
1.28. What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?	The Applicant will comply with the requirements of the Mine Health and Safety Act, No. 29 of 1996 and will ensure that itself and the contractor/s employed will comply with the Occupational Health and Safety Act, Act 85 of 1993. Employees will be made aware, as part of the EIAR / EMPr (specifically the environmental awareness programme), of Section 4(j) of NEMA, which relates to the right of workers to refuse work that is harmful to human health or the environment and is informed of dangers. The environmental awareness programme will be included in induction material for all employees and contractors.
1.29. Describe how the development will impact job creation in terms of, amongst other aspects: 1.29.1. the number of temporary versus permanent jobs that will be created, 1.29.2. whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area), 1.29.3. the distance from where labourers will have to travel, 1.29.4. the location of jobs opportunities versus the location of impacts (i.e. equitable distribution of costs and benefits), and	Approximately 50 jobs will be created during the construction phase, which is anticipated to last up to 6 months. Construction will be conducted by a contractor. In accordance with the SLP, people from the local area will be prioritized, and at least 80% of construction phase jobs will be sourced from within the CoE. As the proposed project is an extension of an existing mining operation and considering that staff will be sourced from the existing operations, the project will not create additional employment opportunities during the operational phase, but will rather sustain the employment of some of the current NKGM employees involved in surface operations.

Question	Response and reference in report
1.29.5. the opportunity costs in terms of job creation (e.g. a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.).	The negative impacts of the expanded TSF will be experienced by the residents of Skoonplaas and Modder East suburb. Some existing employees are expected to reside in these areas, but these areas are not considered to significantly benefit from the TSF expansion. The proposed western TSF site is currently not being utilised for economic benefit or employment. Only a portion of the proposed northern TSF site is used for the cultivation of crops; therefore, it is unlikely that the project will result in a loss of agricultural employment.
1.30. What measures were taken to ensure: 1.30.1. that there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment, and 1.30.2. that actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?	All relevant national and local legislation, policies, and guidelines were reviewed and incorporated into the Scoping Report, prior to being made available for authority review. All relevant State Departments were provided with copies of environmental documentation for comment. No conflict of interest between organs of state has been identified.
1.31. What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	The EIA phase will determine the potential impacts and suggest mitigation, management and monitoring measures to ensure that any negative impacts on the environment are managed. An EMPr will be compiled to ensure negative impacts are managed, mitigated and to some extent, avoided. The Financial Provision for closure will ensure that environmental remedies and rehabilitation are incorporated, and sufficient budget has been allocated for these. Refer to point 2.4 for further details.
1.32. Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	This will be fully addressed in the EIA phase. Once impacts have been identified, realistic and implementable mitigation and management measures will be proposed as part of the EMPr and Financial Provision will be made for closure and rehabilitation. Refer to point 2.4 for further details.
1.33. What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?	Section 28 of NEMA relates to the "duty of care" and remediation of environmental damage and states that anyone who causes, has caused or may cause significant pollution or degradation of the environment is strictly liable and must take reasonable measures to prevent the pollution or degradation from occurring, continuing or recurring. In line with the requirements of Regulations 5 and 6 of the NEMA Regulations on Financial Provision (GN940 of 2014) and the DMRE Guidelines on Financial Provision, the quantum for closure-related financial provision will be determined to ensure that adequate funds are made available for the rehabilitation, management and remediation of negative residual environmental impacts. Refer to point 2.4 for further details. The EIA phase will determine the potential impacts and suggest mitigation, management and monitoring measures in the form of an EMPr to ensure that potential negative impacts are managed throughout the life of the TSF and beyond. The Applicant will be legally required to comply with the conditions of the EMPr.
1.34. Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?	NKGM is an existing mine and therefore location alternatives are constrained by proximity to the existing TSF and processing plant. The no-go alternative involves not expanding the TSF. Should the proposed expansion not go ahead, NKGM will commence with closure as planned in 2027. There would be an opportunity cost as this would not extend the life of the processing plant and associated established infrastructure. Decommissioning would involve the retrenchment of the approximately 2 600 employees in line with the approved SLP. The EIA phase will determine the potential impacts and suggest mitigation, management and monitoring measures to ensure that any negative impacts are managed for the life of the TSF.

Question	Response and reference in report
1.35. Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?	A Socio-Economic Impact Assessment is being conducted as part of the EIA phase. The preliminary impacts identified are detailed in Section 10)c)ii). The Socio-Economic Baseline report is available in Appendix 15.

6) PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

The period for which authorisation is required is 10 years.

7) DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED SITE

(NB!! – This section is not about the impact assessment itself; It is about the determination of the specific site layout having taken into consideration (1) the comparison of the originally proposed site plan, (2) the comparison of that plan with the plan of environmental features and current land uses, (3) the issues raised by interested and affected parties, and (4) the consideration of alternatives to the initially proposed site layout as a result.)

It has been proposed that the intended TSF expansion and associated infrastructure be located in areas where limited natural vegetation is present and within the existing lease area, keeping as much distance between the infrastructure and the residential communities as possible, while still allowing for sufficient area to be developed to cater for the required ten years of tailings disposal.

As a result, the areas immediately adjacent to the northern and western sections of the existing TSF were selected as the preferred expansion sites. The proposed northern TSF expansion site is dominated by agricultural activities and degraded grassland. The proposed western TSF expansion site is dominated by historical mining activities (excavations, old buildings and infrastructure, and waste rock dumps) and grasslands (modified and degraded).

Other determining factors of the proposed TSF expansion include the proximity to existing infrastructure such as processing plant.

The land located to the south of the existing operations has not been considered as this falls outside of NKGM's lease area. Furthermore, a planned and approved solar farm (Calodex Solar Park) will be developed to the immediate south of the existing NKGM footprint.

The potential for failure of TSF has been introduced in Section 5) and 10)c). This includes a preliminary identification of the impacts on the environment, the safety of people and animals, the destruction of property and the potential impact on agriculture that may occur in the unlikely event of TSF failure. This will be updated with information from the Dam Break Analysis (DBA) which is being conducted during the EIA Phase. The DBA will assess the potential zone of influence, population at risk, potential loss of life and environmental impacts, the results of which will be included in the EIA.

8) DETAILS OF ALL ALTERNATIVES CONSIDERED

(With reference to the site plan and the location of the individual activities on site, provide details of the alternatives considered with respect to:

(a) the property on which or location where it is proposed to undertake the activity

(b) the type of activity to be undertaken

(c) the design or layout of the activity

(d) the technology to be used in the activity

(e) the operational aspects of the activity; and

(f) the option of not implementing the activity.)

a) Site alternatives

No alternative site locations were assessed as the most viable option for location would be adjacent or close to the existing surface infrastructure required for the ongoing operation of a TSF. The proposed expansion sites are in close proximity to the existing processing plant that generates tailings. In addition, one of the criteria for the location was to contain any additional infrastructure to within the lease area. NKGM only has surface rights for the RE of the Farm Cloverfield 75 IR. Properties surrounding the mine have been earmarked for the development of a solar park

(immediately south). The area to the north of the lease area is associated with an unchanneled valley bottom wetland, which was determined to be too sensitive for development.

b) Type of activity

NKGM is an operational mine with existing infrastructure and the expansion of the TSF is required to allow for the continued processing of ore. The location of the processing plant is optimal, as it is central to some of Gold One's other East Rand operations, which have been approved but have not as yet commenced construction. The disposal of tailings material in a surface facility is considered the most feasible for disposal of tailings as it would be an extension to the existing activities.

c) Design and layout alternatives

The chosen layout is the most suitable in terms of fitting the required infrastructure within the boundary of the lease area while taking cognisance of surrounding sensitive receptors (residential communities). The expansion area of the proposed TSF expansion was guided by the footprint of the existing TSF.

d) Technology alternatives

The current technologies being employed at the processing plant for the generation of tailings is considered the most appropriate for the operations and has been developed over the life of the existing facilities. No alternative technologies have been considered for the expansion of the TSF.

e) Operational alternatives

The most appropriate methodology is currently being employed at the mine for the disposal of tailings on surface. For the TSF expansion, the Applicant takes note of the *Regulations for the Planning and Management of Residue Stockpiles and Residue Deposits from Prospecting, Mining, Exploration or Production Operation* (GNR632 of 2015) and intends to install the appropriate barrier system prior to disposal of tailings. Apart from that, the proposed TSF expansion will be operated similarly to the mine's current TSF as the required supporting infrastructure, equipment and skills are already in place. An upstream day wall / paddock system is currently being utilised at the mine which entails the wet deposition of tailings slurry.

f) "No-Go" option

The no-go alternative involves not proceeding with the TSF expansion. Should the proposed expansion not go ahead, NKGM will commence with decommissioning and closure of the underground and surface operations, as planned, in 2027. The no-go option would therefore not extend the life of the processing plant and associated established infrastructure. Decommissioning would involve the retrenchment of the approximately 2 600 employees in line with the processes for downscaling and retrenchments detailed in the approved SLP.

9) DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

(Describe the process undertaken to consult interested and affected parties including public meetings and one on one consultations. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings. Information to be provided to affected parties must include sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land)

The public participation process to be followed will meet the requirements of Chapter 6 of the NEMA EIA Regulations, GNR982 of 2014 (as amended). The Scoping phase public commenting period ran from 21 October to 21 November 2022 and comprised of the following:

Landowner notification

A landowner notification letter was provided to the current landowner (City of Ekurhuleni) and tenant (Mr J van Rooyen) of the RE of the Farm Cloverfield 75 IR. The landowner was notified on 17 October 2022 (Appendix 3.1a). The land tenant was informed telephonically on 17 October 2022.

The adjacent landowners (Table 7) were also notified via email sent on 17, 18 and 25 of October 2022 (Appendix 3.1b). Refer to Figure 6 for a map of the adjacent properties. Where property information is not available (Table 7), information will be sought by going to those properties at the start of the public participation process.

Table 7. Adjacent landowners

Parent Farm and Portion	Owner
Portion 40 of the Farm Modderfontein 76 IR	*No owner information available as per WinDeed supplied by the Deeds Office*
Portion 8 of the Farm Modder East 72 IR	*No property information available as per WinDeed supplied by the Deeds Office*
Portion 4 of the Farm Cloverfield 75 IR	*No property information available as per WinDeed supplied by the Deeds Office*
Portion 54 of the Farm Welgedacht 74 IR	*No property information available as per WinDeed supplied by the Deeds Office*
RE of the Farm Modder East 72 IR	Modderklip Boerdery Pty Ltd
Portion 22 of the Farm Welgedacht 74 IR	AH Du Plessis Landgoed Pty Ltd
Portion 63 of the Farm Welgedacht 74 IR	Transnet Ltd
Portion 5 of the Farm Cloverfield 75 IR	Transnet Ltd
Portion 3 of the Farm Cloverfield 75 IR	Transnet Ltd
Portion 44 of the Farm Geduld 123 IR	Calodex (Pty) Ltd (Note that this is reflected as Sappi Manufacturing in WinDeed documents)
RE of Portion 57 of the Farm Geduld 123 IR	Transnet Ltd
Portion 207 of the Farm Geduld 123 IR	Calodex (Pty) Ltd (Note that this is reflected as Sappi Manufacturing in WinDeed documents)
Portion 88 of the Farm Geduld 123 IR	Municipality of Springs
Portion 117 of the Farm Geduld 123 IR	Eskom Holdings Ltd
RE of Portion 228 of the Farm Geduld 123 IR	Royal Albatross Prop 11 Pty Ltd
Portion 146 of the Farm Modderfontein 76 IR	*No property information available as per WinDeed supplied by the Deeds Office*
Portion 2 of the Farm Cloverfield 75 IR	*No owner information available as per WinDeed supplied by the Deeds Office*

Media notice

A media notice (in English and Afrikaans) was published in two local newspapers (Springs Advertiser and African Reporter) on 20 and 21 October 2022. The media notice provided a brief project description, legislative requirements, the registration process to be followed for Interested and Affected Parties (IAPs), and the availability of the Scoping Report. The purpose of the media notice was to encourage IAPs to review the Scoping Report and subsequently provide feedback on the proposed project. The media notice also provided the contact details of the EAP. Refer to Appendix 3.2.

Site notices

Site notices (in English and Afrikaans) were posted at suitable, conspicuous locations within the surrounding communities on 21 October 2022. The site notices provided information regarding the project description, legislative requirements, the process to be followed to register on the IAP database, the deadline for IAP registration, and contact details of the EAP. Site notices also indicated the location and availability of the Scoping Report, as well as the commenting periods. Refer to Appendix 3.3 for copies of the site notices and proof of distribution thereof.

Interested and affected parties (IAPs) register

An IAP register was opened and representatives from all the relevant State Departments, landowners, adjacent landowners, surrounding businesses and community organisations as well as any IAPs requesting to register, have

been added to the database. Any person who responded to any of the abovementioned notifications were added to the IAP database. Media notices and site notices were used to encourage IAPs to register on the IAP database. IAPs were requested to confirm if they wish to be involved in the process. Refer to Appendix 3.12.

Background Information Document (BID)

A Background Information Document (BID) was compiled (in English and Afrikaans), briefly describing the project, associated potential impacts, the legislated environmental process, availability of the Scoping Report, the IAP registration process and deadline (21 November 2022), and the contact details for queries. The BID was made available to the relevant State Departments, via email, and to surrounding residents via email or by hand, at the commencement of the public consultation process. The BID was also made available to any IAPs requesting further information and was distributed at meetings. Refer to Appendix 3.4 for copies of the BIDs. Refer to Appendix 3.5 for proof of distribution via email thereof.

Scoping Report

The Scoping Report (this document) was made available to the relevant State Departments via email (or hard copy if requested). All registered IAPs may request the report to be emailed to them or will be directed to the Prime Resources website (www.resources.co.za) for download. Hard copies were available at:

- Springs Public Library
- Bakerton Public Library
- Dr Brenda Watson's medical consultation room, Pharmacy Shopping Centre, Dersley
- Golden Fish & Chips takeaway restaurant, Eastvale shopping Centre
- Skoonplaas Community Office (near the Skoonplaas playgrounds)

The document was made available for a 30-day period [as per Regulation 19(1)] from 21 October to 21 November 2022. The newspaper advertisement and site notices indicated the availability of the Scoping Report. Refer to Appendix 3.5 for proof of distribution via email of the Scoping Report and BIDs. Refer to Appendix 3.6 for proof distribution by hand of the Scoping Report and the non-technical report at the above-mentioned locations.

Non-technical summary of the Scoping Report

The Scoping Report was summarised and presented as a non-technical report (NTR) and was made available for IAP review with the Scoping Report at the locations detailed above. This NTR (in English) presents the most important aspects of the Scoping Report in a concise and non-technical fashion that allows readers to easily understand the proposed project and the potential impacts. It provides more information than the Background Information Document. Refer to Appendix 3.7 for copies of the NTR. Refer to Appendix 3.6 for proof distribution via hand-deliveries of the non-technical report.

Public Open Day

A Public Open Day was held on Thursday 27 October 2022 between 13h00 and 16h00. Initially, the Open Day was to be held at the project site, however, due to the heavy rains experienced on the morning of 27 October 2022, the venue was moved to the mine's covered parking area. Registered IAPs were notified of the change in venue via SMS and WhatsApp on the morning of 27 October 2022.

A brief project description was provided verbally by Prime Resources and attendees were afforded the opportunity to ask questions and register concerns. A translator was present on the day to assist with / facilitate discussions. Attendees who signed the attendance register were added to the IAP database. Refer to Appendix 3.8 (for minutes, photographic evidence and attendance register).

Focus group meetings

A presentation was provided to the Blesbokspruit Catchment Management Forum at the August 2022 quarterly meeting. Refer to Appendix 3.9 for the meeting minutes and the presentation.

Focus group meetings were held with confirmed community representatives of Skoonplaas and Eastvale / Modder East on 26 October 2022 and 10 November 2022. Copies of the BIDs and the NTR were made available at these meetings. Refer to Appendix 3.9 for the meeting minutes and the attendance registers.

Comments and Response Report (CRR)

A Comments and Responses Report (CRR) has been compiled (Table 8) and will be submitted to the Competent Authority for consideration in the final Scoping Report (this document) after the 30-day commenting period has ended. It includes all comments raised by IAPs including the relevant State Departments, and the responses thereto. Refer to Appendix 3.10 for all comments received during the commenting period and the response thereto. Refer to Appendix 3.11 for a summary of the comments and responses.

Note: *The Comments and Responses Report and IAP database may only be disclosed to the Competent Authority in accordance with the Protection of Personal Information Act, No. of 2013 (POPI Act). In order to fulfil the requirements for meaningful public consultation in terms of the MPRDA, NEMA and the EIA Regulations, Prime Resources is required to process the personal information (as defined in the POPI Act) of IAPs and relevant Stakeholders. Such personal information may include full names, addresses, designations and any comments or representations. This data will be captured either through wilful disclosure by IAPs and Stakeholders, or, where necessary, from data published on the internet (for example on Departmental Websites). This data will be retained on the IAP database for the duration of the Environmental Authorisation application process- and, if awarded, the duration of any Environmental Authorisation awarded, after which it will be destroyed. In order to uphold the interests of IAPs and Stakeholders, certain elements of the data processed will be disclosed in the reports produced by the EAP; however, full names and contact information will only be disclosed to the Competent Authority.*

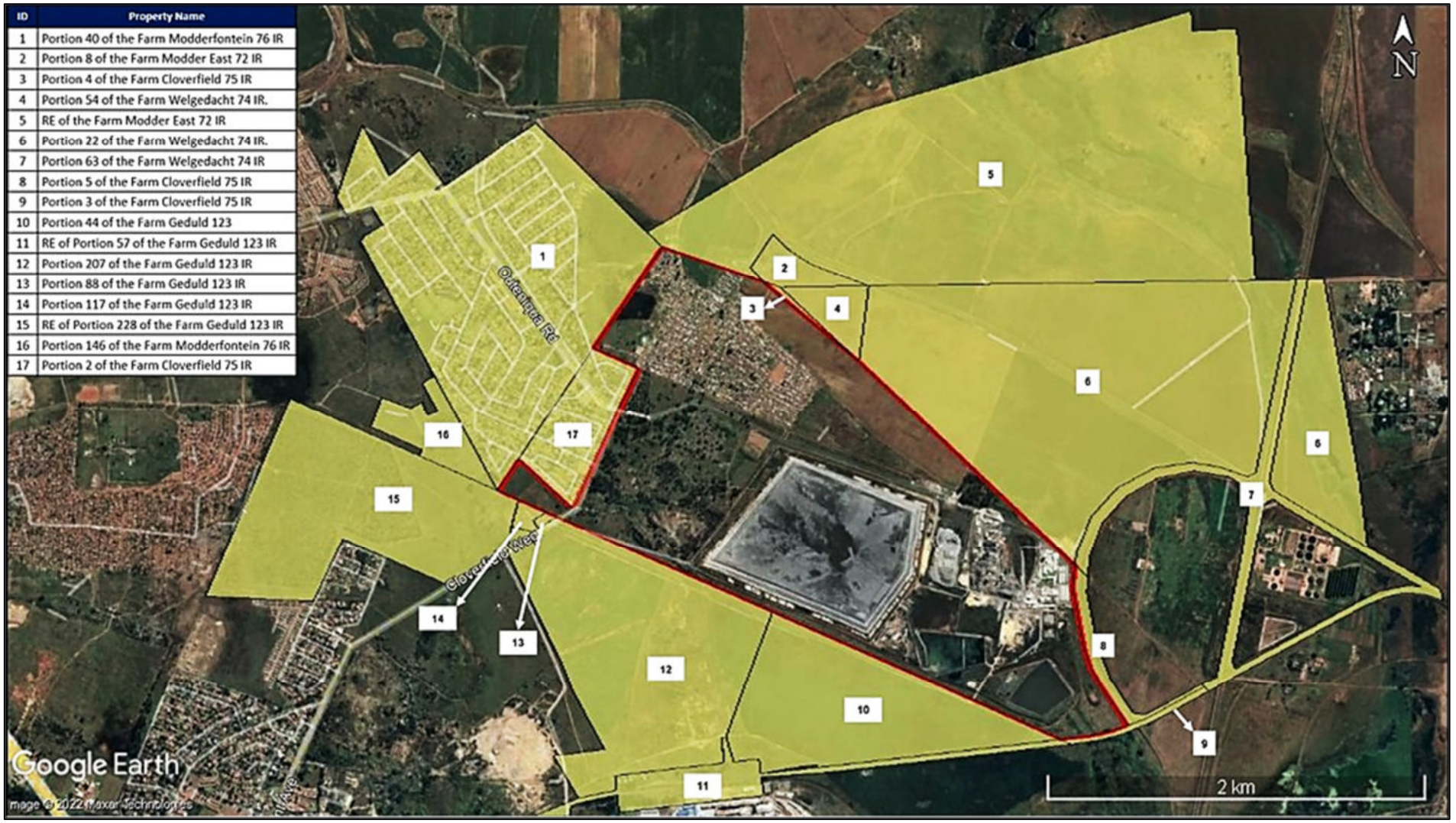

Figure 6. Properties adjacent to the RE of the Farm Cloverfield 75 IR

a) Summary of issues raised by IAPs

(Complete the table summarising comments and issues raised, and reaction to those responses)

Table 8. Summary of issues raised by the IAPs (Comments and Responses Report)

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
Landowner/s and lawful occupier/s of the land where the activity will take place					
Owner of the RE of the Farm Cloverfield 75 IR – City of Ekurhuleni Metropolitan Municipality	17 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Tenant of the RE of the Farm Cloverfield 75 IR – Jaco van Rooyen	17 October 2022 (verbally via telephone)	-	No comments received to date		
Landowners or lawful occupiers on adjacent properties					
Landowner of the RE of the Farm Modder East 72 IR – Modderklip Boerdery Pty Ltd	*No contact information available*	-	-		
Landowner of Portion 22 of the Farm Welgedacht 74 IR – AH du Plessis Landgoed Pty Ltd	18 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Landowner of Ptn 63 of the Farm Welgedacht 74 IR, Ptns 3 and 5 of the Farm Cloverfield 75 IR, and the RE of Ptn 57 of the Farm Geduld 123 IR – Transnet Ltd	17 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Landowner of Ptns 44 and 207 of the Farm Geduld 123 IR – Sappi Manufacturing Pty Ltd	17 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Landowner of Ptns 44 and 207 of the Farm Geduld 123 IR – Calodex (Pty) Ltd	25 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Landowner of Ptn 88 of the Farm Geduld 123 IR – Springs Municipality	17 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Landowner of Ptn 117 of the Farm Geduld 123 IR – Eskom Holdings Ltd	17 October 2022 (via email)	Delivery receipt of email received	No comments received to date		

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
Landowner of the RE of Ptn 228 of the Farm Geduld 123 IR – Royal Albatross Prop 11 Pty Ltd	*No contact information available*	-	-		
Landowner of Ptn 40 of the Farm Modderfontein 76 IR – *No owner information available as per WinDeed supplied by the Deeds Office*	-	-	-		
Landowner of Ptn 8 of the Farm Modder East 72 IR – *No owner information available as per WinDeed supplied by the Deeds Office*	-	-	-		
Landowner of Ptn 4 of the Farm Cloverfield 75 IR – *No owner information available as per WinDeed supplied by the Deeds Office*	-	-	-		
Landowner of Ptn 54 of the Farm Welgedacht 74 IR – *No owner information available as per WinDeed supplied by the Deeds Office*	-	-	-		
Landowner of Ptn 146 of the Farm Modderfontein 76 IR – *No owner information available as per WinDeed supplied by the Deeds Office*	-	-	-		
Landowner of Ptn 2 of the Farm Cloverfield 75 IR – *No owner information available as per WinDeed supplied by the Deeds Office*	-	-	-		
Municipal ward councillor					
Ward 3 Councillor of the CoE – Mr Stone Dean Desmond	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
Municipality					
CoE; Secretary to HOD: Risk Management – Kgothatso Cokoto	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE; Department of Economic Development – Caiphus Chauke	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE; HOD: Roads and Stormwater – Sizwe Cele	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE; Secretary to HOD: Water and Sanitation – Nthabiseng Sereko	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE; Environmental Resource and Waste Management Department – Sifiso Ndwandwe	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE; Department of Environmental Resource Management – Cecilia Rakgoale	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE; Department of Environmental Resource Management – Lilian Kwakwa	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE; Acting Division Head: Legislative Governance and Compliance – Nomvula Flara	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE: Environmental Resource & Waste Management; HOD – Faith Wotshela	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE: Environmental Resource & Waste Management; Environmental Protection, Resilience and Project Management – Daniel Masemola	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE: Water & Sanitation; HOD – Thokozani Maseko	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE: Water & Sanitation; Water quality & Revenue Management – Aser Sekgoela	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
CoE: Department of Human Settlements; HOD – Andile Andile Mahlalutye	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE: Department of Health and Social Development; HOD – Gilbert Motlatla	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE: Department of Health and Social Development; Environmental Health – Jerry Chaka	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE; Operation & Management – Mduduzi Mncube	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
CoE; City Manager – Imogen Mashazi	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Organs of state (responsible for infrastructure that may be affected i.e., Roads Department, Eskom, Telkom, DWS etc.)					
DWS; Catchment officer – Phyllis Maphakela	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
DWS; Engineer – Kelvin Legge	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
DWS; Mine Water Quality Management – Divan van Niekerk	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
DWS; Mine Water Quality Management – Candace Enoch	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
SACAA; Obstacle inspector – Ms Lizell Stroh	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
SACAA; Senior legal advisor – Ms Itumeleng Mogashoa (legal and aviation compliance)	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
ERWAT; Welgedacht WWTW – Giepie Hefer	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Eskom – Tobile Bokwe	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department: Roads and Transport; Chief Director:	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
Transport Planning and Policy – Freeman Masuku					
Gauteng Department: Roads and Transport; Chief Director: Roads Construction – Ruth Morena	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Department of Land Affairs					
Gauteng Department of Rural Development and Land Reform (DRDLR); Office of the Regional Land Claims Commissioner: Gauteng Province – Cindy Benyane	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department of Rural Development and Land Reform (DRDLR); Office of the Regional Land Claims Commissioner: Gauteng Province – Edith Mokgoto	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department of Rural Development and Land Reform (DRDLR); Office of the Regional Land Claims Commissioner: Gauteng Province – Solomon Maruma	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Traditional leaders					
Other Competent Authorities affected					
DMRE; Secretary – Carol Khanyile	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
DMRE; Musa Mangobe	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
DMRE; Jimmy Sekgale	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Department of Forestry, Fisheries and Environment (DFFE) – Thabile Sangweni	21 October (2022 (via email)	24 October (2022 (via email)	Dear Gene Your query below refers.		Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
			For queries related to submitting documents/applications to this Department, please liaise with EIAApplications@dffe.gov.za.		
Department of Environmental Affairs; Director - Land Remediation – Mpho Tshitangoni	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Department of Environmental Affairs; Deputy Director - Land Remediation – Matjelele Phaladi	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Department of Environmental Affairs; Takalani Telekisa	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department of Agriculture Rural Development (GDARD); Director – Environment – Steven Mukhola	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department of Agriculture Rural Development (GDARD); Director – Environment – Matilda Gasela	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Department of Agriculture, Fisheries and Forestry (DAFF); Land Use & Soil Management – Phyllystas Mmakola	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Provincial Heritage Resources Authority Gauteng (PHRAG); Assistant Director – Tebogo Molokomme	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department of Economic Development; HOD – Phindile Mbanjwa	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department of Economic Development; Personal Assistant to the HOD – Mmatshepo Seabela	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
National Nuclear Regulator; Manager: Naturally Occurring	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
Radioactive Material (NORM) – Patle Mohajane					
Gauteng Department: Co-operative Governance and Traditional Affairs; Chief Director: Community Development Workers, Public Participation and Stakeholder Liaison – Mahlomola Mabote	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department: Co-operative Governance and Traditional Affairs; Acting Head of Department – Itumeleng Mokate	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department of Community Safety; HOD – Yoliswa Makhasi					
Gauteng Department of Community Safety; Head of Department – Nontsikelelo Sisulu	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department of Community Safety; MEC for Community Safety – Faith Mazibuko	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Gauteng Department of Community Safety; Personal Assistant to the HOD – Sipho Maseko	21 October 2022 (via email)	Delivery receipt of email received	No comments received to date		
Organisations					
Blesbokspruit Forum					
Mr Henk Coetzee, Council of Geoscience		4 August 2022 (presentation to Blesbokspruit Forum via Zoom)	Asked whether the TSF expansion is being developed over historically undermined areas and whether this has been considered. Mr Coetzee indicated that the DMRE would be able to provide any further information if required.	GM indicated that the western TSF expansion has been designed to avoid a historical shaft. There may be historical undermining but it is expected to be at great depth. This will be confirmed and included in the Scoping Report.	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
			It is noted that the current Modder East tailings facility is 140 metres from the closest community. In the workshops that were undertaken with major affected communities it was noted that communities do not just want to be consulted about these matters, they want negotiation and they want to be involved as partners and not in opposition. This should particularly be borne in mind during construction when there are often unavoidable impacts. Given that it is the hope that the guidelines will be introduced into legislation, have the future changes in legislation to include guidelines been included, and any transitional arrangements been included?	This will be taken into account in the SR and passed onto Gold One. All current legislation is being considered, but future legislative changes cannot be predicted.	Complete
Mr Marc Leroy, GDARD		4 August 2022 (presentation to Blesbokspruit Forum via Zoom)	Queried whether the Gauteng Pollution Control Buffer Zone Guidelines that indicate that a buffer of 1 km from tailings dams had been considered.	GM indicated that Prime Resources and NKGM are aware of the guidelines and reiterated that specialist studies including air quality, radiation and community health are being conducted, and that safety is being considered in the TSF design. The main concern anticipated is dust and air quality, and this is being considered in the AQIA.	Complete
			Regarding buffer zones, it would be up to the Competent Authority, which is the DMRE in this case, to determine if they want to use the guidelines. The guidelines were based on studies that showed that $PM_{2.5}$, PM_{10} and other pollutants were effectively dispersed at distance of 1km from tailings dams, and air quality levels beyond 1km from tailings dams were found to be generally the same as baseline conditions. It is understood that mitigation measures can be put in place to manage the impacts of the tailings facility but GDARD would encourage the guidelines to be implemented.	Noted.	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
Ms Simone Liefferink, Sibanye Stillwater		4 August 2022 (presentation to Blesbokspruit Forum via Zoom)	Appreciated the early notification of the project. Noted that a wetland delineation would likely be undertaken as part of the project, would like to know if there are any wetlands, whether these will be impacted, and if any offsets will be required. Has closure and post-closure of the expanded TSF been adequately considered? Specific concerns regarding illegal mining and safety incidents regarding old tailings dumps in the West Rand.	There are no wetlands in the project area, but there is a small depression approximately 450m from the TSF footprint. This will be identified in the Scoping Report (SR). Provision for closure and post closure will be included, and the potential for safety impacts associated with post closure will be included and assessed.	Complete
Ms Mariette Leifferink, Federation for a Sustainable Environment (FSE)		4 August 2022 (presentation to Blesbokspruit Forum via Zoom)	Queried if Prime Resources has ascribed to the ICMM Guidelines for Tailings Management. The Mine Health and Safety Regulations prescribe 100 m buffer zones, but there are some proposals that it should be 2 000 m. Can the authorities comment on which would be applicable.	The International Council on Mining and Metals (ICMM): Global Industry Standard on Tailings Management (GISTM) guidelines will be incorporated into the TSF design. These will be highlighted in the SR. The GDARD buffer zone guidelines are guidelines rather than legislated requirement but PR would welcome any comments from the authorities.	Complete
Surrounding communities					
Skoonplaas and Eastvale / Modder East					
Abel Mthombeni (representing TCDC)	Invited to focus group meeting	26 October 2022 (Focus group meeting) – Skoonplaas and Eastvale/Modder East	Asked for the TSF liner requirements to be expanded upon.	GM explained that the TSF is required to be lined with an appropriate HDPE (thick plastic) liner to prevent seepage into the groundwater. Jon Hericourt (JH) explained that there has been contamination of groundwater from historic mine activities at the site because historically TSF sites did not need to be lined. The Mine itself is located on a historic TSF site. The TSF expansion will however be constructed with the legally required HDPE and composite lining.	Complete
Abel Mthombeni, David Skhosana (representing TCDC)			There is a committee who then disseminates information to all the representatives from their ward or Voting District (VD). This	GM explained that a Public Meeting would not be held, but rather an Open Day where people could come and visit the Prime	Complete

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			information is then distributed to the community members. Regular public meetings are held where the TCDC and their sub-committees then present information to the communities. David Skhosana explained that education levels are low in large portions of the communities they represent. Providing information to the communities via the structure above allows for the committee to fully understand the topic and investigate further, and then provide feedback information to the community.	Resources stand and ask any questions or raise any issues. This strategy was chosen because experience has shown that Public Meetings are often dominated by individuals with specific agendas, and it does not provide all community members an opportunity to voice their concerns and raise their queries.	
Albert Mkhabela (representing Skoonplaas)				Albert Mkhabela explained that information does reach the communities through these channels. At Skoonplaas, when they receive information, they call a public meeting to inform the community members.	Complete
Abel Mthombeni, David Skhosana and Albert Mkhabela			Abel Mthombeni, David Skhosana and Albert Mkhabela supported the use of an Open Day to share information and agreed that this would provide more people an opportunity to ask questions without complicated dynamics that are often associated with public meetings.	JH provided an overview of the need for expanding the TSF. He explained that the Mining Right area extends over a huge area, but that the underground resources at Modder East have almost all been mined. The Mine was able to extend operations from 2018 to 2026 due to changes in technology, but after 2026 there will be no more resources to mine. The existing gold plant at Modder East will still be able to process material far beyond 2026. There are other Gold One projects such as Holfontein, Modder North, Gedex and Cons Modder that will be able to provide material to the existing plant. It is not financially viable to erect a new plant and TSF at each of these nearby projects, and so the plan is to transport the material to Modder East and process it there. The existing TSF is however reaching capacity, and so they need to expand it to accommodate the waste that is generated by the processing plant. The site chosen will allow for another 10 years' worth of tailings to be deposited at Modder East. After that, if	Complete

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				necessary, they will have to explore establishing a new TSF site.	
Albert Mkhabela			Asked whether the 500m buffer zone would still be in place with the TSF expansion.	GM confirmed that the TSF expansion site will be in close proximity to nearby residential areas. The proposed western expansion will be approximately 140 m from Modder East and 110 m from Skoonplaas. The proposed northern expansion will be approximately 150 m from Skoonplaas. Although the guideline recommends a maximum buffer, it is not a legislated requirement. Due to the close proximity of residential areas, several specialist studies are being conducted. The outcomes of the specialist studies in the EIA Phase will be used to recommend a buffer as necessary. It is understood that the buffer is largely related to dust impacts, specifically PM_{10}. A detailed Dam Break Analysis (DBA) is also being conducted during the EIA phase. The DBA will assess the potential zone of influence, population at risk, potential loss of life and environmental impacts, the results of which will be included in the EIA. This will be conducted independently of the EIA process by an independent specialist.	Complete
				JH indicated that the Mine is exploring establishing waste rock dump barriers around the TSF as an extra precaution to prevent any devastating impacts of TSF failure. The outcomes of the DBA will determine the measures that will need to be put in place.	Complete
Abel Mthombeni			Stated that although there are no legislated guidelines, aspects such as particulate matter and air quality impacts, as well as groundwater impacts, and how these will	GM stated that a Community Health Impact Assessment is being conducted. The scoping phase study identified two potential sources and routes of contamination, and therefore impact on community health:	Complete

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			affect community health in the short and long term should be taken into account.	• Potential seepage from the TSF into the groundwater • Potential release of particulate matter and dust that may be inhaled and could potentially impact the health of people living in the vicinity of the TSF. A Groundwater Impact Assessment and Air Quality Impact Assessment are also being undertaken.	
				JH explained that the Mine undertakes regular dust and water quality monitoring and these are reported to the authorities on a regular basis. There is therefore a good baseline understanding of the current conditions. All of this monitoring information has been provided to the specialists to incorporate as required. The TSF will use wet deposition, so during operation when the tailings are being deposited dust is not likely to be a problem. Once it is closed then dust could potentially become a problem if the TSF is not properly rehabilitated.	Complete
			Questioned how the specialist conducting the assessments are selected and stated the need for the community representatives to be able to ensure the community that these are independent specialists.	GM indicated that Prime Resources has a database of specialists that work in a variety of fields. These specialists act independently and there are legislated guidelines that cover specialist reports. All specialists sign declaration of independence in their reports. The specialist baseline studies conducted so far are all attached to the Scoping Report and can be reviewed by all IAPs.	Complete
				JH reiterated that the Mine has no input in the choice of specialists that are used in the EIA process.	Complete
			Queried whether they can be afforded the opportunity to review and comment on the draft EIA report before the 30 day commenting period so that they can have	GM explained that the timelines in the EIA process are prescribed by the authorities and these timelines do not provide a long period after the Scoping phase starts.	Complete

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			sufficient time in the next commenting period to provide information to the communities and get feedback. They would like to avoid a situation where people are not happy with the project.	However, every effort will be made to accommodate this request.	
			Queried what will happen to the TSF when the Mine closes? Will it be rehabilitated or when the Mine closes does it become a problem for the government to fix?	JH explained the Mine's current closure, rehabilitation and financial provision planning process. Every year a closure and rehabilitation cost and liability assessment is done independently to determine the Mine's liability, which is currently approximately R140 million. The amount stated in this report is set aside in a separate fund that is managed by a financial company, specifically for rehabilitation and closure purposes. This is not paid to the government. At closure, the funds from this account are used to remove all mine infrastructure and rehabilitate the area, including the TSF.	
				GM stated that the EIA will contain provisions for closure and will state that the TSF will have to be rehabilitated to an end land use that will be self-sustaining in the long term.	Complete
Albert Mkhabela			Stated that he would like to see engagement from the mine side, and asked whether there would be another Open Day.	GM replied that at the moment there is only a plan for one Open Day but that smaller focus group meetings could be scheduled.	Complete
			Stated that 30 days is not a long time for the community to understand the project, and provide comments and feedback.	GM explained that the timelines for the public commenting period are defined by legislation. Although the Scoping Report itself is a large and technical document, the Non-Technical Summary report provides a much shorter summary that allows an understanding of the key findings of the Scoping Report. There will be another 30 day commenting during the EIA phase.	Complete

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Abel Mthombeni			Said that he felt that there were few benefits of the Mine being felt by the community and that they felt side-lined and that others were taking unskilled jobs. The people of Modder East/Eastvale and Skoonplaas should be prioritised.	JH noted that and suggested that matters regarding employment and the SLP be further discussed in a separate forum.	Complete
Resident (no name provided)		27 October (Open Day – verbal comments)	Is the community going to be safe, located so close to the TSF?	A dam break analysis is currently being conducted to determine the safety aspects of the existing TSF and proposed TSF expansions. This information will only be available next year but will be shared with the community. The information will be used to advise whether any changes would be required to the design of the proposed TSF expansion.	Complete
Resident (no name provided)		27 October (Open Day – verbal comments)	What are the impacts that will be felt by the community?	There are several potential impacts such as dust and groundwater pollution. The mine will look at a number of ways to mitigate any impacts including dust control and lining the TSF to prevent groundwater pollution. However, the project is still at the scoping phase and detailed technical studies need to be conducted to fully understand the nature and extent of the impacts and then design appropriate measures to mitigate such potential impacts.	Complete
Skoonplaas					
Albert Mkhabela		24 October 2022 (via email)	Good day Gené Main, I hope this email finds well. I have received your email on my imkaholdings address, I hereby confirm my availability.	24 October 2022 (via email) Perfect, thank you. We'll see you on Weds 26 October at 12h30.	Complete
		25 October 2022 (via email)	Good Afternoon Main Thank you will see you at mine		Complete
		26 October 2022 (Focus group meeting) – Skoonplaas and		GM explained that a Public Meeting would not be held, but rather an Open Day where people could come and visit the Prime Resources stand and ask any questions or raise any issues. This strategy was chosen	Complete

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		Eastvale/Modder East		because experience has shown that Public Meetings are often dominated by individuals with specific agendas, and it does not provide all community members an opportunity to voice their concerns and raise their queries.	
		27 October (Open Day – verbal comments)	Mr Albert Mkabhela, the community leader of Skoonplaas, stated that he was not in favour of separate public engagement for Modder East and for Skoonplaas. They are different areas but any impacts felt will be the same for both areas, so meetings should be held together, and this will also allow for everyone to understand each other's grievances. He encouraged people to decide if they wanted to leave based on whether they were satisfied that they have gotten all the information the required, not because they are from either Skoonplaas or Modder East.		Complete
		2 November 2022 (via email)	Good afternoon Gené I hope this email finds you well. Kindly send me a soft copy of the TSF Expansion document.	2 November 2022 (via email) Hi Albert Please see attached	Complete
			Thank you I have received it.		Complete
		21 November 2022 (via email)	Good day Main Please find attached Submissions from Residents of Skoonplaas.	22 November 2022 (via email) Dear Albert and Mandla Thank you for your email. We are capturing all comments and will ensure that yours forms part of our final submission to the DMRE. In response to your comments, please see below.	Complete
			Skoonplaas is high- density informal settlement situated immediately north -west of the existing TSF. The community has been in existence under the apartheid government as farm workers who resided in the land after the farmer left them there. The community saw an	Noted.	Complete

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			exponential growth after the (New Kleinfontain Goldmine (Pty) Ltd entered into a lease with the Ekurhuleni Metropolitan Municipality (EMM). The community has been neglected by the pre and post apartheid State and the living condition of the people of skoonplaas are extremely poor..		
			To prevent tailoring Storage Facility disaster, the mine must heed the concerns of the community. In the wake of the disastrous Jagersfontein tailings dam failure that killed at least one person, destroyed at least 164 homes and displaced almost 400 residents and the lesson learned from that disaster was that never to allow mining companies to regulate themselves. independent experts and frontline workers and communities living adjacent to the mines must have the legal authority to speak and be heard on issues related to tailings safety, and the failure to heed their warnings must have serious consequences for power-holders.	The concerns of the community have been noted and all correspondence will be provided to the DMRE to consider in their decision-making process. The mine is in the process of having a dam break analysis undertaken for the existing tailings dam as well as the proposed expansion. This study will identify areas of concern in case of the collapse or failure of the tailings dam. The preliminary design to date takes into account all required regulations, and the final design will incorporate international standards.	Complete
			Concerns from skoonplaas community The final footprint of the proposed expanded TSF will be close to existing residential areas. The final footprint of the proposed expanded TSF will be close to existing residential areas. The western TSF boundary will be 140 m from houses in Modder East along Cloverfield Road and 110 m from dwellings on the southern edge of Skoonplaas informal settlement. The northern TSF expansion will be 150 m from dwellings on the eastern border of Skoonplaas. As the result of the proposed expansion the following points were raised: 1) Proximity between the proposed expanded TSF and the dwellings poses serious health issues to the quality of life due to the following: a) Noise pollution	Specialists have been appointed to assess the potential impacts of the tailings dam in terms of noise, contamination of water, and dust (among others). To date the noise specialist has determined the noise impact to be very low as both construction, but particularly operation, are anticipated to not generate any significant noise. Other studies will identify potential impacts and mitigation measures to reduce or prevent those impacts.	Complete

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			b) Water pollution c) Dust		
			Access to Analysis report The community has not seen the analysis report on the current status of the air pollution and water contamination and without access to this documents it is very difficult for the community to give free and informed consent to the TSF as proposed. The community reserves their right to consent until such reports are made available..	The current status of air quality and water quality has been included in the Scoping Report. The preliminary specialist studies were also included as appendices. The Scoping Report was made available for review at several locations, and was offered to be provided via email upon request. The baseline (current) status of these aspects will again be included in the EIA phase studies and documents, as well as potential impacts on these (including the cumulative impact).	Complete
			Temporary Employment opportunities The community is very worried by the fact that the expansion of TSF will increase due to temporary employment because this opportunities has been politicized and most members of the community are sidelined when it comes to employment opportunities. Therefore it is the wish of the community to have direct communication with the employer especially where the mine need to source employees from the surrounding communities.	The benefits of employment have been described in the documentation. There will be limited additional employment created during the construction phase. There will also be those individuals at the mine whose employment will be extended due to the delay in closure of the processing plant (once the underground mining ceases). As discussed with the Gold One representative at the Open Day, Gold One is open to discussing direct employment opportunities with the leadership of Skoonplaas. It was suggested that an Employment Desk be created in Skoonplaas. Employment opportunities and policies will need to be further discussed with the mine, in particular with Loselo Segwe (loselo.segwe@gold1.co.za) who is responsible for implementation of the Social and Labour Plan.	Complete
			Conclusion In 2022, 162 frontline communities, indigenous peoples, labour unions, environmental and human rights organisations, academics and scientists from 32 countries endorsed 'Safety First: Guidelines for Responsible Mine Tailings	The Safety First guidelines are noted, thank you. The SLP Coordinator (Loselo Segwe) is the relevant person to approach regarding ongoing engagement. Some community leadership structures are already in place but	Complete

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			Management'. It lays out 17 guidelines to eliminate the riskiest tailings management practices and hold mining companies accountable. Most importantly, it prioritises community consent and oversight for all phases of tailings operations. The community is not against TSF, only if the mine is willing to directly engage the leadership of Skoonpllas community and there is wiliness to comply with statutory requirements laid down by government and international standards. We therefore are interested to further engage with the mine to seek best possible solutions that are mutually benefiting to both parties.	the mine has committed to expanding this to include leadership from Skoonplaas and Eastvale specifically. The mine has noted that it is further committed to implementing best practice with regard to design, construction, operation, management and closure of the tailings dam expansion, as far as possible.	
Skoonplaas resident (no name given)		27 October 2022 (Open Day – verbal comments)	How is this going to affect us as nearby residents? Are the residents of Skoonplaas going to have to be moved?	There are no plans to relocate people. The TSF footprint does not extend over any residential areas. The specialist studies may show that there are design changes that need to be implemented to make the TSF safe for residents, such as changing the shape and size of the TSF. This will be determined one all the studies have been conducted. The mine would prefer to make changes to the design of the TSF rather than to relocate the residents of Skoonplaas.	Complete
Skoonplaas resident (no name given)		27 October 2022 (Open Day – verbal comments)	How far is the TSF from the Skoonplaas community?	At this stage the TSF is 110 – 140 m from the community, however, it is important for the technical studies and impact assessment studies to be conducted and completed and then accurate information will be provided to all IAPs. This is not the final design or layout but rather a preliminary proposal.	Complete
Skoonplaas resident (no name given)		27 October 2022 (Open Day – verbal comments)	What is the recruitment process or policy for applying for jobs at the mine?	The recruitment process for all employment opportunities should go through community representative structures. It was determined that a suitable option would be to establish an employment desk at the Skoonplaas Community Offices, where available positions could also be advertised. It was confirmed	Complete

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				that currently the Gold One website is not set up for a recruitment portal.	
Kabelo Phaahla (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	What about the promises for service delivery that you promised? We are being targeted as we are close to the mine. What will the community benefit? We would like to know the advantages and disadvantages. Will the reject resources not be harmful? Where can we submit CVs for open vacancies for the project?	21 November 2022 (via SMS) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. There are no plans for the mine to provide services such as electricity to the community. The reason for the expansion project occurring close to Skoonplaas is because this land is currently being leased by the mine, and other properties that have been investigated for suitability are not available for further development by the mine. Assessments are still being undertaken by specialists to determine the potential impacts of the TSF expansion on the nearby communities. The benefits of the project to the community are general. Some of the existing employees at the mine will largely be employed for a further ten years as closure of the plant will be delayed. Additional temporary employment opportunities will be created for the construction phase, but these will be limited. The tailings material will be constructed into a dam (or dump). A safety assessment is being undertaken to determine the potential impacts of the dump if it should fail or collapse. From an air quality perspective, the dump will release dust after it has been closed if it is not suitably rehabilitated. The mine has planned for rehabilitation and will put aside additional funds for the rehabilitation if the project is approved. The mine has existing employment channels which it uses to advertise vacancies. It is	Complete

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				however working on setting up an employment desk at the Skoonplaas Community Offices.	
Vusi Mahamba (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	If the community is affected and they have health problems, who will be responsible? Will it be the mine or should the community find the means to look after themselves?	21 November 2022 (via SMS) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. A community health study is currently underway to determine the potential impacts of the TSF expansion on the health of the nearby communities. Once the study is complete, the mine will determine whether there is suitable mitigation available or whether the design of the TSF expansion will need to change to reduce the potential impacts. The mine has been monitoring dust and will continue to do so in order to determine whether the dust levels are a health concern for the community. Measures to reduce dust levels will be implemented.	Complete
Faizzen Malegoka (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	The mine will be closed in 3 years but it must first develop the community. Will the mine or the government provide the community with electricity?	21 November 2022 (via SMS) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. The current plan is for the mine to close in 2027. The mine has been implementing a Social and Labour Plan (SLP) in all the time that it has been operational. The SLP details the various investments that the mine has made into community development. Should you wish to discuss these investments further with the mine, please contact Loselo.Segwe@gold1.co.za. There is no plan for the mine to provide the community with electricity.	Complete

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Eric Msibi (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Verbal comments)	There are not enough English copies of the reports.	Noted. There were not enough printed copies of the English Information Booklets, but these can be provided via email or WhatsApp on request or can be downloaded from the Prime Resources website.	Complete
		27 October 2022; Open Day (Comments form)		21 November 2022 (via email) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. Please find attached an English copy of the Information Booklet as well as a copy of the Non-technical summary which provides more information. Please find attached an English copy of the Information Booklet as well as a copy of the Non-technical summary which provides more information.	Complete
Andries Mmusi (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	I'm concerned about the dam breaking. We have seen what happened in the Free State on the news. Will people be allowed to stay in Skoonplaas or will they be moved? If we are going to be moved, where will we be moved to? Will it be a better location? Is there the possibility of better service delivery and access to houses? I'm concerned about peoples' health and the pollution.	21 November 2022 (via SMS) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. A dam break analysis is currently being undertaken on the existing tailings dam and the proposed expansion to determine the potential areas that might be affected should the dam break. The mine will put in place protection measures or redesign the dam to reduce the impact. There are no plans to relocate any residents of Skoonplaas. A community health study is currently underway to determine the potential impacts of the TSF expansion on the health of the nearby communities. Once the study is complete, the mine will determine whether there is suitable mitigation available or	Complete

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				whether the design of the TSF expansion will need to change to reduce the potential impacts. The mine has been monitoring dust and will continue to do so in order to determine whether the dust levels are a health concern for the community. Measures to reduce dust levels will be implemented.	
Cyprian Mkhize (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	There is already a problem with air pollution. I'm worried it is going to get worse. I'm worried the fresh water will be affected by the dust and chemicals. I'm worried that the underground digging will cause earthquakes.	21 November 2022 (via SMS) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. It is understood that the mine and surrounding communities are located in an airshed that is already degraded. The air quality in the area is not good. The air quality specialists are currently determining the potential impacts of the TSF expansion on air quality. Recommendations from the specialist will be taken into account and information about measures to reduce the impacts will be provided in the next phase. There is one pan (wetland) approximately 500m from the TSF expansion sites. This is too far to be affected by dust and chemicals from the dump, provided that appropriate dust control measures are put in place, and that a liner is installed below the tailings material to prevent / limit the contamination of groundwater from the tailings. The TSF expansion will not result in any further underground mining at Modder East. The TSF expansion is to cater for material brought to the mine from other operations, because underground mining will stop at Modder East in 2026/2027.	Complete
Busisiwe Mabala (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	I'm concerned about the health risks.	21 November 2022 (via email) Good day	Complete

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				Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. A community health study is currently underway to determine the potential impacts of the TSF expansion on the health of the nearby communities. Once the study is complete, the mine will determine whether there is suitable mitigation available or whether the design of the TSF expansion will need to change to reduce the potential impacts. Please find attached an English copy of the Information Booklet as well as a copy of the Non-technical summary which provides more information.	
Genine Manda (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	There have been break-ins in peoples' homes. Thieves hide the items behind the waste rock boulders around the mine. Why are these boulders there? They are also an eyesore for residents.	21 November 2022 (via SMS) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. The waste rock boulders have been placed around the mine boundary as an emergency measure, in response to an armed robbery a few years ago. A palisade fence has since been installed. The mine has put in place a plan to start removing the waste rock from around the property's edge.	Complete
Mhzwi Nthombela (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	How will the mine support small businesses? I have safety concerns about a TSF failure.	21 November 2022 (via SMS) Good day	Complete

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Mzamo Zwane (Skoonplaas resident)	Attended Open Day, 27 October 2022		I am worried about community health impacts. The air pollution is already affecting chickens/livestock.	Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. The mine has been implementing a Social and Labour Plan (SLP) during the time that it has been operational. The SLP details the various investments that the mine has made into community development. Should you wish to discuss these investments and potential support of small business further with the mine, please contact Loselo.Segwe@gold1.co.za. A dam break analysis is currently being undertaken on the existing tailings dam and the proposed expansion to determine the potential areas that might be affected should the dam fail or collapse. The mine will put in place protection measures or redesign the dam to reduce the impact. It is understood that the mine and surrounding communities are located in an airshed that is already degraded. The air quality specialists are currently determining the potential impacts of the TSF expansion on air quality. Recommendations from the specialist will be taken into account and information about measures to reduce the impacts will be provided in the next phase.	
Madubanja Lesetja Kenneth (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comment form)	"*Nna nka thaba gen ka lona kamoka re thola madulo a ma kaone*" Translated (Google Translate): I would be happy gen with you all we get better accommodation	21 November 2022 (via SMS) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. There are no plans to relocate any residents of Skoonplaas.	Complete
Jabulani Ntuli (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comment form)	I'm concerned about the resettlement of Skoonplaas. I have been living there for 5 years.	(Stated at the Open Day that no resettlement was being considered for the residents of Skoonplaas.)	Could not respond to this person's comment

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			The mine should provide us with electricity. We need streetlights. The municipality provides water and toilets.		directly as no contact details were provided
Bernard Ledimo (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comment form)	The mine is hiring people from outside Skoonplaas but there are qualified people in Skoonplaas. The SMMEs need support. I would like my small construction business to be considered for use in the expansion. I have questions about the SLP.	21 November 2022 (via email) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. The mine has been implementing a Social and Labour Plan (SLP) during the time that it has been operational. The SLP details the various investments that the mine has made into community development, as well as employment policies. Should you wish to discuss these policies, investments and potential support of small business further with the mine, please contact Loselo.Segwe@gold1.co.za. Please find attached an English copy of the Information Booklet as well as a copy of the Non-technical summary which provides more information.	Complete
Mbali Xaba (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	I'm concerned about the safety of the TSF and what will happen to Skoonplaas if it fails.	21 November 2022 (via SMS) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. A dam break analysis is currently being undertaken on the existing tailings dam and the proposed expansion to determine the potential areas that might be affected should the dam fail or collapse. The mine will put in place protection measures or redesign the dam to reduce the impact.	Complete
Vusi Pius Nkosi (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	"We, as the custodians of Skoonplaas, we're raising our concerns, on whether we're asked or told about the expandment. Also we sense a sign or feeling of uncertainty about the	21 November 2022 (via email) Good day	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
			proposed separation, since it is exactly the sign of propaganda whereby people are stripped of their only remaining strength, which is self belief. And also the separation makes people skeptic on whether there are benefits or not. With the contamination and dust it is fair to check on whether the profit can harm any"	Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. The Open Day was intended for both the Skoonplaas and Eastvale communities so as to not create divisions within the community. It was requested that a further meeting be held with the Eastvale community. A representative from Skoonplaas attended that meeting, along with the residents committee members from Eastvale. There is no separation of communities, but smaller meetings are more productive, and all questions can be answered suitably. The same information is shared between all the communities. The air quality specialists are currently determining the potential impacts of the TSF expansion on air quality. Recommendations from the specialist will be taken into account and information about measures to reduce the impacts will be provided in the next phase. Please find attached an English copy of the Information Booklet as well as a copy of the Non-technical summary which provides more information.	
Mgababa Andries Phwala (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	As a Skoonplaas person we ask the mine to inform us about what is happening on the mine, please. We also need the right place to stay.	21 November 2022 (via SMS) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. The mine is currently finalizing the Scoping Report which is the first stage of the EIA process to obtain Environmental Authorisation for the TSF expansion project. Additional information will be made available to the communities during the next stage of the EIA process. Everyone who has signed	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
				the IAP registration form, or sent in comments via email, SMS or WhatsApp will be added to the database of people that will be notified when the information becomes available. There are no plans to relocate the residents of Skoonplaas.	
Nthabiseng Mashego		27 October 2022 (via email)	Good day, I saw a notice regarding the expansion of Gold one mine. My question is does it mean that the Skoonplaas residents will be moved?	31 October 2022 (via email) Good day Thank you for your email. Your details have been added to the Interested and Affected Party (IAP) database and you will be informed about project information as it becomes available. There is currently no plan to relocate or move the residents of Skoonplaas.	Complete
Nthabiseng Mashego		27 October 2022 (via WhatsApp)	Hi I saw the post by Eastvale shops regarding the expansion of the mine. Does that mean Skoonplaas residents will be moved?	27 October 2022 (via WhatsApp) Good day, thank you for your message. No, Skoonplaas residents will not be moved/relocated. Would you like to register as an IAP (Interested and Affected Party)? This will allow you to receive updates on any new information regarding the project that becomes available. Kind regards, Prime Resources	Complete
			So our homes are safe? Yes please I will like to register as an IAP	27 October 2022 (via WhatsApp) Kindly provide me with your name and surname so that you can be added to the IAP database. Please be informed that there is an Open Day today, 27 October, from 13:00 to 16:00 at the main security gate at Modder East Operations. Representatives from Prime Resources will be available for questions, comments and IAP registration.	
			Eish I knock off late but thanks for the update		

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
Saidy Selepe		22 October 2022 (via email)	Hi i like to thank Gold Mine and the Government to great job opportunities as the people of Skoomplas were so happy about this project thank so much.	25 October 2022 (via email) Good morning Saidy Thank you for your email. Your contact details have been added to the IAP Register and you will be informed of any new information that becomes available.	Complete
		6 November 2022 (via WhatsApp)	Details 1 Name and Surname -Saidy Selepe 2 I'D number -9011115717082 Cell phone -082 2586 204 4 NKGM TSF -Mine water supply pipeline and powerlines	7 November 2022 (via WhatsApp) Good day Saidy, Thank you for your message. You have been added to the database of Interested and Affected Parties (IAPs) and will be informed about any new project-related information as it becomes available.	Complete
Siphiwe (Skoonplaas resident)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comments form)	I'm concerned about air and water pollution and how safe the residents of Skoonplaas will be.	21 November 2022 (via email) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. Specialists are currently assessing the potential impacts of the TSF expansion on the residents of Skoonplaas and Eastvale. A dam break analysis is currently being undertaken on the existing tailings dam and the proposed expansion to determine the potential areas that might be affected should the dam break. The mine will put in place protection measures or redesign the dam to reduce the impact. The air quality specialists are currently determining the potential impacts of the TSF expansion on air quality. Recommendations from the specialist will be taken into account and information about measures to reduce	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
				the impacts will be provided in the next phase. The mine is required to install a liner beneath the tailings material to reduce or prevent any contamination of the groundwater from the tailings. This forms part of the design of the facility. Please find attached an English copy of the Information Booklet as well as a copy of the Non-technical summary which provides more information.	
Eastvale / Modder East					
Modder East resident (no name provided)		27 October 2022 (Open Day – verbal comments)	As a Modder East resident I have the following concerns: You want to build a tailings dam right near our houses and clear all the vegetation. It is too close.	The footprint of the TSF will have to be cleared of vegetation, but the trees that are along Cloverfield Road and Outeniqua Road will as far as possible not be disturbed, and these will partly shield the TSF from view of residents in Modder East. The footprints that have been indicated for the proposed expansions are the maximum footprints being considered and assessed. There is still an opportunity for these footprints to be reduced, pending the outcome of the specialist studies and EIA process.	Complete
			We had a meeting before, when the mine was first establishing, and wanted to meet with mine management at that stage. A meeting was promised but no meeting ever happened.	JH explained that the previous process had occurred before he was working at Gold One. He is the Senior Vice President of Operations at Gold One and can therefore be considered senior management, and is available to discuss the project with the community.	Complete
			There is a lot of noise already from the mine, this will add to it.	There may be some noise generated during construction, but the TSF is not expected to generate any additional noise during operation.	Complete
				When the TSF has reached capacity, it will be decommissioned, rehabilitated and closed according to an approved Closure Plan. The	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
			What happens when the mine stops? Will the TSF be rehabilitated or will it be left for other people to reprocess?	EIA will contain provisions for closure and will state that the TSF will have to be rehabilitated to an end land use that will be self-sustaining in the long term. The Financial Provision for closure and rehabilitation costs will be updated annually to ensure there are sufficient funds available for rehabilitation.	
				Rehabilitation will include grassing, vegetating of the TSF. Another option that may materialise after closure is that the tailings could be reprocessed by DRD or a similar company, because there is still a small amount of gold in the tailings that cannot be processed by Modder East's plant.	Complete
			We experience high crime and break-ins, and the stolen goods are found behind the rock dumps that Gold One has put up along the fence. Why are these dumps here, they are an eyesore.	JH explained that the waste rock material had been placed all around the boundary of the mine as a safety precaution after the armed robbery that took place at the mine. JH stated the Gold One would look into removing the rock dumps.	Complete
Sibusiso Sukwini		27 October 2022 (via email)	As a resident I am against the expansion: youth in the area are unemployed. roads are deteriorating due to heavy duty trucks an increase of squatter camps which are in a rise and a great potential of higher crime rate that, as residence we suffer from. This expansion will again increase the deterioration of properties with cracks and pollution of the air with dust and water polluted. and it will be of great interest that you create an online platform for public participation for this consultation to avoid future conflicts.	1 November 2022 (via email) Good day Thank you for your email. Your contact details have been added to the Interested and Affected Party (IAP) database and you will be informed of project information when it becomes available. There are several methods available for communicating with the EIA consultants on this project and all comments raised, regardless of the platform, are included in the Scoping Report that is submitted to the authorities. While it is understood that the roads are deteriorating, the road through Modder East (Outeniqua / Modder Bee Road) appears to be in the worst condition. The mine currently has no trucks hauling material on this road,	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
				nor will the expansion to the tailings dam result in any additional trucks on that route. With regards to youth employment, it is acknowledged that unemployment in the area is high. The mine is not however currently recruiting and when it does, it does so via established channels, including through the community forums and in line with the approved Social and Labour Plan. The expansion of the tailings dam will result in temporary employment during construction, as well as continued employment at the surface operations (processing plant) when underground mining ceases. There is no blasting associated with the TSF expansion. The potential impacts on the environment and community health are still in the process of being assessed. These results will be made available during the next round of consultation during the EIA phase which is estimated to be in around February 2023.	
Charlie Molepo		30 October 2022 (via email)	Dear Eastvale Community, I object to the extension of Gold One on the following grounds: 1. Increase of heavy-duty truck on our road 2. The road infrastructure is not geared towards mining industry but for residential 3. The noise will negatively impact on our well being 4. The aesthetic beauty of our view will impacted negatively 5. The is potential of health hazard that would have long term effect on our community 6. Contamination of underground water 7. Negative environmental impact on our fauna and vegetation	16 November 2022 (via email) Dear Mr Molepo Thank you for your email. Your contact details have been added to the Interested and Affected Party (IAP) database and you will be informed of project information when it becomes available. Please find attached a copy of the Non-Technical Summary Report which gives more information on the project and the preliminary impacts that have been identified. In response to your comments below, please find our responses. All correspondence between ourselves will be incorporated into the final Scoping Report to be submitted to the DMRE.	Complete

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			8. Food security by turning a farming area into a dumping site. 9. No financial gain for the community 10. No new job opportunities	1. The impact of heavy vehicles has been considered separately for the Holfontein and Gedex projects. An additional traffic study will also be undertaken during the EIA phase to determine the cumulative impact of the additional trucks on the current traffic volumes on the roads of Modder East / Eastvale. 2. The traffic study should identify whether the roads are acceptable for use by heavy vehicles and whether any upgrades are required. 3. The process of constructing and operating the tailings dam is relatively quiet and has been assessed by the noise specialist to have a low short term noise impact during construction, and a minor noise impact during the other phases of the project. 4. The tailings dam will likely be a permanent fixture in the area, and this has been taken into account in the Scoping Report and visual impact assessment. Mitigation measures that have been recommended to decrease the visual impact include leaving the trees along Cloverfield Road in place as much as possible to screen the tailings dam from the community. A palisade fence will be constructed and additional trees will be planted on the boundary of the tailings dam to further serve as a visual barrier or screen. 5. The health impact in terms of dust is being considered by a specialist. The results of this assessment will be made available during the EIA phase, approximately in February 2023.	

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				6. The impact on groundwater is also being considered by a specialist. The results of this assessment will be made available during the EIA phase. The mine is required to put in place suitable barriers or a liner to limit the contamination of groundwater from the tailings dam. 7. The area currently being considered for the tailings dam expansion has been assessed by ecology specialists and they have determined that the site is degraded and modified, and does not provide suitable habitat for any animals of conservation importance. It is also considered significantly infested with invasive plant species. The significance of the impact on flora and fauna has been assessed as low. 8. Approximately 4.7 ha of high potential agricultural land will be developed for the tailings dam expansion. It must be noted that this is the maximum area that is currently being considered, and it has been determined by the specialists appointed to the project that although this will result in a loss of soils, this is a low overall impact as this small area does not contribute to food security in the area. 9. The benefits of the mine would be described in the Social and Labour Plan. Alternative forums / platforms are available for information regarding the investments in community development that have already been made by Gold One. The relevant contact person is Loselo Segwe, loselo.segwe@gold1.co.za. There will be limited employment opportunities created during construction of	

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				the tailings dam expansion. The main employment benefit of the expansion project is that it extends the employment for some of the employees at the Modder East Operations.	
Juanita van der Westhuizen		7 November 2022 (via email)	Good day I live in Eastvale. As such I am an IAP as you shortened it. My name is Juanita Van Der Westhuizen Tel no: 0678133868 15 Magaliesbergweg, Eastvale. EMail wwnita@yahoo.com We are a large family. We moved here because the area is quiet and save for kids and animals. The last few years since the mine re-opened there has been more traffic making it less quiet and save. The roads, which was not made for the large trucks has been damaged and is now so bad it is damaging the vehicles of the community. We might add that the mine has done nothing to help maintain or repair the roads. Despite a problem with sewage lines between Eastvale and Dersley, there has always been some beautiful birds in the area. (We have enough problems trying to get Ekurhuleni to sort that issue out) We would also like to mention we have enough dust and really don't want more. As for the agricultural land they want to bury. Isn't there enough other less fertile land the mines can bury? We have to look after this world, our resources are finite. Especially water and food. So why even take a chance, to contaminate groundwater. That affects not	16 November 2022 (via email) Good day Juanita Thank you for your email. Your contact details have been added to the Interested and Affected Party (IAP) database and you will be informed of project information when it becomes available. Please find attached a copy of the Non-Technical Summary Report which gives more information on the project and the preliminary impacts that have been identified. The mine has been operating since 2008. No hauling (transporting of rocks) is currently being done by the mine but there are deliveries and support services that would create additional traffic at the mine. Development in the area has also grown significantly, which has invariably contributed to the increase the traffic volumes through Eastvale / Modder East. The condition of the roads has deteriorated over time, but the repairs of urban roads is considered the responsibility of the Municipality. The mine will be undertaking a traffic impact assessment to determine the additional impact of the traffic that will be generated as a result of the TSF expansion. The high potential agricultural land that is proposed to form part of the footprint of the TSF expansion comprises an area of 4.7 ha. It has been determined by the specialists appointed to the project that although this will result in a loss of soils, this is a low	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
			just here but every-where the water flows underground. If we do not take care of our environment, it will not be able to take care off us. We used to have falcons. When you drove down the road they used to sit on the wires next to the road. Now you are lucky if you see one. In the mornings and afternoons there is a huge amount of traffic coming to and from the mine. They do not live here. We do not believe that there's been any significant hiring of any locals. So we don't believe there is any reason to think that will change. Which means people moving here looking for work, as it is ambiguously promised, won't find it. This will increase the workless individuals that might turn to crime to support themselves and their families. Then please note that what the mine is proposing will also lower the property values. We found an out of the way place to settle. It makes it hard to do your shopping if you do not have your own transport. But we're willing to put up with that. What we do not want is more ugly, dirty, smelly or noisy. Please respect our wishes. From everyone at Magaliesbergweg 15 A and B. Kind regards Juanita Van Der Westhuizen Susan Hopkins Raymond Hopkins Griffin Hopkins Dylan Templeman Natasha Templeman Barbara Draper Jim Draper	overall impact as this small area does not contribute to food security in the area. The mine has considered alternative sites for the TSF expansion. The current proposed footprint is restricted to the property that is currently being leased by the mine, so that it does not directly affect any adjacent properties. The property to the south of the mine is being developed as a solar park, so that area is also not available to use for the expansion. With regard to groundwater contamination, the mine will be required to install a barrier or liner to reduce the potential for groundwater contamination from the tailings dam expansion. The potential impact on groundwater is currently considered to be of low significance, but this will be further assessed by the specialist. The mine has a Social and Labour Plan which it uses to guide its investment in community projects, and to manage employment. For more information on employment, labour sending areas and community investment projects, the relevant contact person at the mine is Loselo Segwe loselo.segwe@gold1.co.za. It is understood that people do move into areas where it is expected that employment will be available. This is difficult to control with any development and is ultimately something that needs to be managed by a larger forum, including the mine and the Municipality. The mine applies strict employment criteria and will not hire anyone at the gate. This, and other measures, will be recommended to deter the in-migration of job seekers.	

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			Theresa Draper Greame Carstens	A property valuation study will be undertaken to determine whether there will be an impact on property values. If the individuals who are listed at the end of your email would also like to be considered IAPs on the project, please could you ask them to contact me directly via email, WhatsApp or SMS.	
Samuel Nkotoba (Eastvale resident)		10 November 2022, Focus Group meeting (Eastvale)	We requested our own meeting because at the previous meeting there was a conflict between Skoonplaas and Eastvale residents, we do not have the same impacts resulting from the project. Residents of Eastvale have come here to retire; residents of Skoonplaas may be moved at some time in the future. We have long term concerns. The disadvantages of the TSF expansion being 140m from our suburb and homes, has a personal impact on me and my family. There are retired people living in this area, this is a health risk.	Dust impacts are only expected to become an issue during decommissioning and closure when the TSF dries out. During operations the tailings is deposited as a wet material, and this helps prevent the spread of dust. There is also the potential for the tailings to be removed and reprocessed after closure but that's not what is being considered here. The current application deals with depositing the tailings on the expanded tailings dam over a 10 year period and then rehabilitating the TSF when it has reached capacity. During rehabilitation, grass will be planted on surface of the TSF. The vegetation will bind the dust and prevent the spread of dust. This can only be done after the mine stops depositing tailings, so only at closure. The closure plan allows for 5 years of post-closure monitoring, to ensure that the vegetation establishes successfully. A fund has been set aside for rehabilitation of the current TSF and is managed and assessed by an independent company. This cost is reviewed annually. The mine is committed to rehabilitating the TSF at closure as per legislated requirements. There is still gold in the tailings but not a lot and it may be worthwhile for another company to remove the tailings sometime in the future. In this case, the tailings dam will be removed, and tailings will be processed at another plant. The current plant at the mine	Complete

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				cannot rework the remaining lower-grade gold contained in the tailings.	
			We met for more than 2 hours this weekend (as a community). There is no footprint of Gold One in our community. No library or anything. Residents will be sitting with the problem. Illegal miners will come when the mine closes. The community is not happy. We are totally against this project. The people who are working here, renting in Eastvale, they're not from here, they're from other provinces. The mine will disappear, and we will live with the long-term risks. There have been break-ins here. The mine should be doing something to help with the crime, be part of the community. Who can we discuss these things with?	Loselo Segwe (LS) confirmed that the comments regarding the SLP and benefits to the community are noted. He indicated that the discussion around investments in community development should be undertaken in a different forum separate from this process. Gold One has done a lot for the community but these have maybe not directly benefitted the people of Dersley and Eastvale. He stated that Gold One should engage more to see what else can be done. It was confirmed that the person to engage with from Gold One is Loselo Segwe. Andrew Modise (AM) reverted to the point of employment and employees not being from the local area. LS responded that it's part of an ongoing discussion.	Complete
			What plans are currently in place to mitigate the impacts of the TSF expansion? Are there already recommendations for the impacts? Is Gold One already addressing the identified impacts? We need better engagement with the mine.	There are also several plans recommended in the documents to mitigate the impacts, for example on dust, dust suppression vegetating of the tailings dam have been recommended. Additional measures will be included once we have received the final reports from specialists.	Complete
Sibongile Mafola		31 October 2022 (via email)	Good morning I am a concerned citizen of Eastvale (Modder East) in the East Rand, we received the attached document from one of community members. When reading through it we then realised that our lives are in danger and our house hold are no longer safe as this will results in unstable environment. We calling out on the media to assist us as we can see we are on our own, some of our community members went to a meeting to find out who represented Eastvale as mention on	16 November 2022 (via email) Dear Sibongile Thank you for your email. Your contact details have been added to the Interested and Affected Party (IAP) database and you will be informed of project information when it becomes available. Based on the content of your email it would appear that you have received a copy of the Scoping Information Booklet that was distributed in Eastvale on 21 October	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
			the document? They then realised this is more than us as none of the community members knew about this. Potential impacts on the environment and the community The key potential issues, which will be investigated further, were identified with the aid of specialist investigations and the National web-based Screening Tool. The final footprint of the proposed expanded TSF will be in close proximity to existing residential areas. The western TSF boundary will be 140 m from houses in Modder East along Cloverfield Road and 110 m from dwellings on the southern edge of Skoonplaas informal settlement. The northern TSF expansion will be 150 m from dwellings on the eastern border of Skoonplaas. Potential negative impacts include: A decrease in ambient air quality through increased dust and particulate matter generation Community health impacts associated with decrease in ambient air quality A permanent change in the topography of the project sites Visual intrusion on the residents of Skoonplaas and Modder East suburb Potential groundwater contamination, although this is expected to be minimal Loss of 20 hectares of agriculturally important soils The disturbance of flora and fauna, although the expansion areas are considered to be	2022. The impacts that you've listed in your mail are as per this document. The impacts are currently being assessed and those noted in the Scoping Information Booklet are considered preliminary impacts, which are currently being investigated further by specialists. Please find attached a copy of the Non-Technical Summary Report which gives more information on the preliminary impacts that have been identified, and their expected significance. However, please note that the significance of the impacts can only be fully determined once the specialist studies are complete. Once the specialist information is available, this will be incorporated into an Environmental Impact Assessment (EIA) Report, with an Environmental Management Programme, and this information will be made available for review. The EIA will include a final rating of the expected significance of these impacts and the measures that will have to be implemented to reduce and manage these impacts. The current project does not pose an immediate danger to the surrounding communities, nor does it pose a threat in terms of an unstable environment. There are several assessments still underway. A dam break analysis is being conducted to determine the risk of the tailings dam extension, should it fail or collapse. This will provide information on where the tailings dam needs to be redesigned or where additional measures need to be put in place to prevent impacts from a break or collapse. It must also be noted that the project is still in a very early phase, with a lot of work still to be done in terms of design. What has been proposed to date is the maximum footprint	

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
			largely transformed and have low to moderately low sensitivity A minor increase in noise during construction Socio-economic impacts including the potential in-migration of job seekers and associated expansion of informal settlements Potential risk of TSF failure (unlikely) and associated loss of life, damage to property and contamination of watercourses. Potential positive impacts include: Temporary employment opportunities during construction The continued operation of the existing NKGM processing plant and continued employment for some of the current surface employees due to a delay in closure of the processing plant, and the associated downstream benefits of this. Scoping Phase Environmental Impact Assessment (EIA) Decision making Public consultation period from 21 October to 21 November 2022 Public notified via site notices, media notices, information booklets and a public Open Day (27 October 2022) – this was during working ours and only few of the residents attended with no outcome I have copied Mrs Ntuli one of our representative regarding this matter. Looking forward to your response.	that is being considered by the mine, it does not mean that this has been accepted or finalised. Many approvals are also still required from various authorities on this project. With regard to the Open Day held on 27 October, this was only one of the ways in which information is being shared with the community. The Open Day was advertised via the following means: In the Information Booklets • In notices posted along the edge of the site and at several locations in Eastvale, Springs, Dersley • In two newspaper adverts which were published on 20 and 21 October 2022 • Via emails and SMS to those individuals who had registered on the Interested and Affected Party (IAP) database In the Scoping Reports that were also advertised for review via the above-mentioned methods There is no requirement to have attended the Open Day. The intention of the Open Day was to provide information to individuals who wanted to further discuss the project face to face. There was a large turn out from both Skoonplaas and Eastvale. There are however options to raise concerns or comments via email, SMS, WhatsApp or telephone. The attached Non-Technical Summary Report also provides more detailed information on the project, and this report is also available in several locations in Modder East and on the Prime Resources website. We appeal to the community to send in their comments or questions so that we can include these in our final documents, to ensure that we have addressed the concerns of the communities.	

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		16 November 2022 (via email)	Dear Gené Thank you for the detailed information, with regards to communicating with the community regarding this matter I still feel that better communication could have been done. Let us see what the outcome will be and we will take it from there.		Complete
Reineth Zwane		27 October 2022 (via WhatsApp)	Good morning I would like to register as an IAP My name is Reineth Zwane, I live @ 7 outeniqua rd Moddereast	27 October 2022 (via WhatsApp) Good morning Reineth, Thank you for your message. Your contact details have been added to the IAP Register and you will be informed of any new information that becomes available.	Complete
			Thank you	27 October 2022 (via WhatsApp) Due to the heavy rains this morning, the Open Day venue has been moved to the main security gate at Modder East Operations. Representatives from Prime Resources will be available for questions, comments and IAP registering (you have already been added) from 13:00 to 16:00 today, 27 October 2022.	Complete
Donald Sekgobela		26 October 2022 (via email)	Good Day I trust you're well Kindly register us as both affected and interested Community members from Eastvale. We would like to reject the above expansion by all possible means due to the below reasons. Currently as residents of Eastvale we are already affected by the current operation The environmental impact will be adding to what we are already having, Ants 🐜 Cracked houses Noise due to every day blasting State of our main roads Rodent and snakes due to the rubbish dumped outside clover field road. 95% of people working at Gold1 are not from	2 November 2022 (via email) Good morning Thank you for your email. Your details have been added to the Interested and Affected Parties (IAP) database and you will receive updates on the progress of the project and future opportunities for comment. In addition to the temporary employment created during construction, the project will benefit those employees that will remain employed in surface operations, as the processing plant will continue to operate. There will also be the continued implementation of SLP commitments connected to this mining right. While these	Complete

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			Eastvale. We definitely don't want the expansion close to our houses. What will the community benefit, The potential temporary "JOBS"? Temporary unskilled labour who will immediately become unemployed after construction, Instead they will be bringing more waist from other areas to Modder East. This mine is left with two years according to the document, we suggest they must take their processing to those that still have a longer period and rehabilitate our area. Our road infrastructure cannot survive more trucks bringing waist from other mines to Modder East. The impact on the environment and health is clear on the document and for what? The biggest issue with the environmental impact cases is that the health hazards of this mines become evident 15-20 years later when they have long ceased to exist by then we have kids and everyone suffering from unknown diseases. By then there will be no doctor or scientist to link those diseases to operations taking place amongst our residential area. Exactly what is happening with our crack houses as the vibration test that the mine use to determine the possible impact cause of cracked houses cannot be detected because they are currently mining 10 to 50 KM away from Eastvale underground and with the vibration test results the mine will not take responsibility. Lastly what has Gold 1 Mine done for our community specifically Eastvale? I trust you will find the above in order	may not all be specific to the Modder East community, they will service the larger community surrounding the mine. The processing plant is considered central to the other Gold One operations in the East Rand – hence material being brought from these other operations to be processed at Modder East. These operations are located to the south and north-west of the mine, and traffic from these operations will not travel through Modder East (via Outeniqua or Modder Bee Road). They will be restricted to the access road (on mine property) and Cloverfield Road along the edge of Modder East. The existing traffic through Modder East is attributed largely to non-mine vehicles as the mine is not currently hauling any material to be processed at its plant. The impacts on the environment and community health are still in the process of being assessed. This includes the impacts after closure of the mine. These results will be made available during the next round of consultation during the EIA phase which is estimated to be around February 2023. There is no blasting associated with the TSF expansion. With regard to community development / benefits of the project, we have been in touch with the mine regarding their Social and Labour Plan (SLP) commitments. As independent consultants we can unfortunately not respond to specific questions about existing SLP commitments. The SLP details the Local Economic Development programmes that have been implemented. The location and type of development projects were decided upon with input from the community in the Stakeholder Engagement Forum, in collaboration with the	

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				Municipality. The SLP is updated every 5 years and is due to be updated soon. The relevant contact person at the mine to contact with regard to these questions and concerns is Loselo Segwe (loselo.segwe@gold1.co.za). Please feel free to cc ourselves in your communications with Mr Segwe as it would be useful to include this correspondence in the final project documentation.	
		10 November 2022, Focus Group meeting (Eastvale)	I am worried about the impacts for all, whether they stay in Eastvale or Skoonplaas. The BID shows that there will be health risks from the TSF expansion. The health risk will affect everyone, regardless of how long they live here. At 110m from people's houses, there will be a health risk. Employees at the mine are provided with protective equipment because it is a health and safety requirement. Is the mine going to provide PPE to the community? The impacts will be the same. What is the current (baseline) air quality? Can we see the scoping report? We need to know what is here currently, and then the mine will add to that with the dust from the TSF. The air quality impact will be long term. We understand that the extension is a positive impact in terms of jobs. But the needs of employees are not the same as residents. There are trucks on the roads coming to and from the mine. Your email to me says that the trucks from the mine are not causing damage to the roads. I counted the trucks, there are a lot of them on this mine road. The extra trucks with the expansion project will increase the traffic volumes on our roads, cause accidents, and cause more damage to the roads. What is the life of the mine versus the longer-term life of the residents in the area? The	The current baseline air quality is indicated in the specialist reports and the Scoping Report. It is understood that the area is already in a poor air quality area but that doesn't mean that it's acceptable to further pollute the air with dust. Mitigation measures are planned to prevent further impacts on air quality. JH added that dust monitoring has been taking place at the mine since it started in 2009. These records are available and have been included in the air quality baseline report. In response to the trucks travelling on the roads, GM clarified that her email stated that there is currently no hauling of material/ore to or from the mine through the Eastvale community towards the prison. It is understood that there is mine-related traffic on the mine road and the surrounding roads, and that there will be a cumulative impact of trucks on the roads. Separate traffic studies have been undertaken for the other projects that will be bringing ore to the mine, but a further study could be considered to understand the cumulative impact of additional traffic on Modder East. Although there is mine-related traffic on the roads, responsibility for the roads lies with the municipality.	Complete

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			people at the mine will leave but we will be left with the long-term impacts after the mine closes. What happens if people only experience impacts in 10-20 years, but Gold One has gone? What recourse do people have? Can you not consider moving the TSF expansion in different directions, maybe south, away from the people, to avoid bringing it so close to the community? If there is a solar park planned in the area, we would prefer the solar park to be closer to us rather than the TSF. Can you not swap land with them and expand to the south? With regard to air quality, I've seen it, and spoken to people living close to tailings dams. They have dust in their houses, in their yards. All the time, even though rehabilitation was supposed to happen. You can't stop the dust. Assistance from the mine is one thing, and it is important, but we are here to discuss the negative impacts. Employment is also something to take offline and have a separate discussion.	JH stated that the mine has considered all areas immediately adjacent to the current lease area as potential possibilities for the location of the TSF. The current plan is to contain the TSF to the mine's lease area and to not directly affect other properties. The area to the south was considered, but this falls outside of the mine's lease area and there is a planned solar park that is being developed privately on that property, and has been approved. They have engaged with the owner of the solar park to swap land with them, but a much bigger portion of land is needed for the solar park and it is not feasible for the owner of the solar park to split the solar park to allow for the TSF development on their land. The mine has also considered the option of going east but that land is restricted by a railway line. JH indicated that employees at the mine are only expected to wear dust masks if they work in the plant, and not for the rest of the mine site. There is no dust impact for general employees at the mine and it would not be expected that this impact will be significant on employees. Dust may potentially become an issue at closure when the tailings dam dries out, and if it has not been vegetated and rehabilitated. The mine intends to rehabilitate the TSF at closure and funds will be allocated specifically for this.	
			You say there is a 5-year plan for closure and yet there are 4 years left until closure and we've not been provided with the closure plan or told what is happening. We don't believe that closure will happen, this expansion is already part of the plan. Why has closure not started if it is a 5-year plan? The plan should be available and there should be transparency about the closure and rehabilitation. If the	The 5-year plan is two-fold – it must be in place 5 years prior to closure, and it includes a 5-year post-closure monitoring plan. It does not mean that closure commences 5 years before the mine stops operating. Infrastructure that is no longer required, such as dams for example, can be removed and rehabilitated before closure, but most of the infrastructure is required to be operational	Complete

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			mine is truly closing in 4 years, then why has closure not started? I have cracks in my walls from when the mine was blasting years ago. When people came to test for vibrations of course there were none because the mining had moved to another area, not close to my house. But the damage had been done by previous mining. The ground shakes sometimes, we can feel it. If there is gold left in the tailings as you say, then the zama zamas will come for it and then we will have other problems. The trucks on the mine roads might not be hauling material to and from the mine but they are supporting the mine with services and deliveries. There are a lot of trucks on our roads. Skoonplaas is shaking, you can feel it when you walk. And what about the sewage problem right in front of Gold One? These are the kinds of things we should be looking at. What is the lifespan of the other projects? Can the tailings not be set up near the other projects rather than here? Construction will bring a lot of noise and dust. How will the community be protected against this? Will PPE be provided to the communities? With regard to the rocks / boulders that Gold One has put up around the property, they are an eye sore. Why did the mine not engage with the community about that? It would have been easy to understand why they are there if we had been engaged with. But they are used by criminals who hide behind them. We are part of the CPF, and we see these things. The track record of engaging with the community is poor. The community can stop the mine from operating by parking their cars across the	until mining stops. Only once mining stops will there be large-scale closure happening on site. The current plan is to close in 4 years time. That is what the mine is planning for. The TSF expansion is only a proposal at this stage, and if it gets approved then closure will be delayed by about 10 years. Construction of the tailings dam is a relatively quiet process. It involves clearing of ground and vegetation which may cause some noise and dust, but the operation of the tailings dam is not expected to cause noise. The plastic liners will be placed on the ground after clearing and this will also stop the spread of dust from the site. The TSF is not expected to create high noise impacts such as what you might expect from a housing development. As mentioned previously, the operational phase of the TSF is not noisy or dusty. PPE will not be required by the community. JH stated that the other Gold One projects have about a ten-year life span but they cannot provide enough ore to supply the plant on their own. Gedex will only be able to provide about 40% of the ore requirements to the plant, and Holfontein is still being determined. Additional prospecting is still underway to confirm the resource there. The TSF has to be located close to the plant, for logistics and for cost purposes, otherwise the tailings material needs to be piped to another site, and it is not economical to do so. The plant can't be moved because that would cost almost as much as constructing a new plant. Gold One placed the boulders around the edge of the property as a result of an armed robbery that occurred a few years ago. The waste rock was put in place as an emergency measure to prevent another robbery where	

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			access road, but we don't want to do that, we've accepted that there are impacts from the mine. People are leaving the area for all sorts of reasons. This will have an impact on property values. What will be the impact on topography?	criminals were able to drive off the site. A concrete palisade fence was subsequently placed around the property afterwards. The mine has a plan in place to remove the waste rock boulders and will slowly process them on the site over the next few months. The TSF is a permanent structure and will therefore be a permanent change in topography. The plan is to vegetate and rehabilitate the TSF at closure to ensure minimal dust generation. The specialists are assessing all the impacts.	
			You will remove the trees for the tailings dam, and we will be able to see the tailings dam clearly. There will be visual intrusion as it says in the information booklet.	The trees will remain in place as much as possible. The mine does not want to remove all the trees and will only remove what is necessary. It has also been recommended that additional trees are planted around the TSF expansion, to provide additional screening for the community.	Complete
		18 November 2022 (via email)	Good afternoon I trust you're well Kindly see the attached from the Eastvale community. Following receipt of the attached subject notification for comments, The Eastvale community has resolved on the attached. Kindly log every house signed on the attached petition. On behalf of the Eastvale Committee.	21 November 2022 (via email) Good day Donald Email and petition received. This will be incorporated into our final documentation to be submitted to the DMRE.	Complete
			Dear Sir/Madam Re: New Kleinfontein Goldmine (Pty) Ltd Tailings Storage Facility (TSF) Expansion Project We are writing this letter to voice our opposition to the mining permit application for New Kleinfontein Goldmine (Pty) Ltd Tailings Storage Facility (TSF) Expansion Project to the existing mine located in Springs, Modder East.		

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			Eastvale used to be a peaceful residential place where residents can escape the noise and busyness of the city and townships and relax in the tranquillity of their properties. On average most of the residents bought properties in the area 25 years ago because of the peaceful lifestyle to raise their family and eventually retire here. An extension to the current Tailing storage right in the heart of the community would be devastating and ruin the quality of life that we and our neighbours enjoy so much. We beseech you to hear our concerns and to take into careful consideration the enormous negative impact such an operation would have on the community and the environment in which we live. The following are our concerns; 1. Traffic and Public safety. There is only one access in and out of the community, which is Outeniqua and Clover field Road. The roads are narrow with blind corners, very little room on the shoulder and several school bus stops. The community shops and petrol stations are located on the same roads near the entrance to the community houses with very little room on the shoulder to park. Many residents and their children walk, run or bike on these roads at all times of the day. With the proposed extension the amount of waste planned to be extracted, it would mean more waste trucks per day one way would be travelling on these same roads causing congestion, pollution, more wear and tear on the roads, and a greater potential for accidents. 2. Noise, dust, and pollution Eastvale is unique in its topography with the current mining activities already impacting our daily lives and the decrease in ambient air		

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			quality through increased dust particles and will worsen the current situation. The noise, dust, and pollution to be created by this proposal would adversely affect the entire community as wind travels through the valleys of Eastvale every day. 3. Ground water contamination The applicant proposes to process more than 100 tons of general waste per day or more than 1 ton of hazardous waste per day, excluding recovery that takes place as an integral part of an internal. Water always follows the path of least resistance and any single, multiple, or successive development or site alteration activities and would have an irreversible negative impact on community and important wetlands. Airborne particles as well as toxic emissions from trucks, equipment and machinery may seep into the ground and contaminate groundwater, which flows into the wetland and into neighbouring wells. 4. Loss of agricultural land Loss of 20 hectares of agriculturally important soil would have an enormous negative impact to food security of the country. 5. Socio-economic impact If this application is approved, it will lead to negative socio-economic effect, including the potential in-immigration of job seekers and associated expansion of information settlements. We are already being surrounded with a lot of illegal and poorly planned informal settlements with no tarred roads, electricity etc, which has led to several socio-economic challenges of unemployment and high rate of crime, whilst on the other hand there are no job opportunities for the local community		

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			members, or any community development programs. In closing, we would like to say that the extension would drastically affect our ability to enjoy our properties that we have invested so much money and time into, decrease our property values by as much as 30%, and destroy the quiet, peaceful community in which we live. Our properties are already exhibiting structural damage (cracks on walls). If a permit is granted, the negative impact that this storage would have on the environment and its inhabitants is irreversible. It would compromise the health and safety of our community and ruin the character of this unique place forever. We thank you for taking the time to hear our concerns and hope you will take them into consideration when making your decision about the future of our community.		
Duma Motha, Dersley resident		10 November 2022, Focus Group meeting (Eastvale)	The venue for a larger public meeting was not available and people can't make comments. We need to be able to take information to the people so need more booklets please to be able to provide them with information and contact details. The committee cannot make decisions for the people. A big question is – what has Gold One done for the people of Eastvale and Dersley? We've not even benefitted from the mine and now we have to have the TSF so close to us. You need to do something for the community so that the impacts can be balanced with benefits. The community has poor views of Gold One.	A hundred booklets were printed in English and provided for the committee members to take back to their constituents. The booklets are also available electronically if required. Loselo Segwe (LS) confirmed that the comments regarding the SLP and benefits to the community are noted. He indicated that the discussion around investments in community development should be undertaken in a different forum separate from this process. Gold One has done a lot for the community but these have maybe not directly benefitted the people of Dersley and Eastvale. He stated that Gold One should engage more to see what else can be done. It was confirmed that the person to engage with from Gold One is Loselo Segwe. Andrew Modise (AM) reverted to the point of employment and employees not being from	

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				the local area. LS responded that it's part of an ongoing discussion.	
Viola Shumba, Eastvale resident		10 November 2022, Focus Group meeting (Eastvale)	So you say the project is set up, but small adjustments can be made here and there to reduce the impacts maybe?	The project is still in the very early stages and the layout has not been finalised, and studies are still underway. There is still a lot that must be done and can be done in terms of the layout and design, and it the design may have to change. It could be rejected or authorised by the authorities. It's still a 2-3 year process to determine whether all the necessary approvals are granted.	Complete
Abel Mthombeni, TCDC		10 November 2022, Focus Group meeting (Eastvale)	We represent a structure that engages with the mine. We had a focus group meeting with the mine and Prime Resources to discuss the project. If there is a negative impact on the community then it shouldn't go ahead. Specialists must not be connected to the mine, they should be independent. The Scoping Report is a start, there is another round still to come. People must make comments and engage with the reports. The rehabilitation fund doesn't go to the government, we understand that it is reviewed annually. It's good to know the fund is kept separate. The fund should be transparent, rehabilitation should start before the mine closes, and we need to understand how to make sure that rehabilitation will be done properly. At closure, no one must pack their bags and go. We've seen in the media that these things happen. We need reassurance. What guarantees are there and what rehabilitation can be done in advance? The roads must be included in the rehabilitation process.	To clarify – the specialists and Prime Resources operate independently of the Mine. Some of the specialist reports will have been written by Prime Resources but they act independently of mine, and the Mine has no input in deciding which specialists get appointed to the project. The specialists have a relationship with Prime Resources but not with the mine. Specialist reports are accompanied by declarations of independence. The rehabilitation fund is well-controlled by Centric. It is an external independently managed fund that can only be drawn down on for specific rehabilitation purposes. Every year the value of the fund is adjusted based on an independent closure and rehabilitation assessment of what needs to be done, what has been done, and what it will cost. This usually increases every year because of inflation. The closure plan and rehabilitation fund will need to be updated to include the TSF expansion. The rehabilitation plans and closure assessment reports can be made available if requested.	Complete
Fikile Ntuli (Eastvale resident & committee member)	Attended Open Day, 27 October 2022	27 October 2022; Open Day (Comment form)	Please contact me on 0610020209 to set up a meeting with the Eastvale community. The community interests are: 1.) boomgates; 2.)	21 November 2022 (via email) Good day	Complete

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			safety (pollution, etc.). We would like the mine to help us in the above.	Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022. The mine has been implementing a Social and Labour Plan (SLP) during the time that it has been operational. The SLP details the various investments that the mine has made into community development. Should you wish to discuss these investments and potential support of community projects, please contact Loselo.Segwe@gold1.co.za. A dam break analysis is currently being undertaken on the existing tailings dam and the proposed expansion to determine the potential areas that might be affected should the dam break. The mine will put in place protection measures or redesign the dam to reduce the impact. The air quality specialists are currently determining the potential impacts of the TSF expansion on air quality. Recommendations from the specialist will be taken into account and information about measures to reduce the impacts will be provided in the next phase. The mine is required to install a liner beneath the tailings material to reduce or prevent any contamination of the groundwater from the tailings. This forms part of the design of the facility. Please find attached an English copy of the Information Booklet as well as a copy of the Non-technical summary which provides more information.	
		30 October 2022 (via WhatsApp)	Good evening. My name is Fikile and I am the committee member from Eastvale. We would like to have the meeting with you guys about the proposed dump site. We have the different concerns about the project than Skoonplaas.	2 November 2022 (via WhatsApp) Good afternoon Fikile, Would it be suitable to have the meeting with the Eastvale community on Thursday 10 November, at 16h00? If that is suitable,	Complete

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			Please let me know if you have any questions about this in order to get answers from other committee members.	please advise how we ensure that the Eastvale community is appropriately notified of the meeting. Is it sufficient to confirm with yourself and members of the TCDC that the meeting has been scheduled? Could you also please advise of a suitable venue? If possible, could you please also provide an email address.	
			Good afternoon. Let me forward your message to the Committee members and I will come back to you. My email address is fikile.ntuli3363@gmail.com	Thank you, Fikile.	Complete
Lindiwe Mthembu		31 October 2022 (via WhatsApp)	Hello, I am Lindiwe Mthembu resides at 5 Du Toitskloof Avenue, Modder East. I say NO to the expansion	2 November 2022 (via WhatsApp) Good day Lindiwe, Thank you for your message. It has been noted and will go into the records of public participation. You have also been added to the database of Interested and Affected Parties and will be informed about any new project-related information as it becomes available.	Complete
Minenhle Mthembu		21 November 2022 (via email)	I am writing to express my absolute disapproval of the expansion of the tailing dam. As a permanent resident of Eastvale Springs, I am disappointed with how the mine has been nonchalant about the youth unemployment in the area with many of Gold one's employees being people who are renting. The constant logistics of trucks that have degraded our roads, the miner's Active role in the population boom and establishment of illegal squatter camps in and around my area. The fundamental idea of the expansion of the tailing dam with no future plans of land rehabilitation is a violation of our rights and well being. The tailing will be permanent, the looming possibility of the dam collapsing will also be permanent and Gold one would have long exploited our area and left. The tailing	22 November 2022 (via email) Good day Thank you for your email. Your details have been added to the Interested and Affected Party (IAP) database and you will be notified of any further information as it becomes available. Gold One has been implementing a Social and Labour Plan (SLP) since it has been operational. This addresses employment and community investment aspects. Should you wish to obtain more information about these aspects, please feel free to contact Loselo Segwe (loselo.segwe@gold1.co.za) directly. A traffic study is being undertaken to determine the impacts of the additional traffic	Complete

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			dam is unnecessary and will not benefit the community in no way at all. The very idea is blatant disrespect, and a display of the highest order of a capitalist monopoly and manipulation, all at the cost of our health, value of houses and safety and general well being. Minenhle Mthembu Against the expansion of the tailing dam	volumes (specifically trucks) on the existing traffic and road conditions. Gold One has not been involved in the development and expansion of the informal settlement at Skoonplaas. Growth of informal settlements is unfortunately a common occurrence in South Africa (and across the world), as individuals move into areas where there is the potential for employment. The expansion of the tailings dam does include a plan for rehabilitation and closure. The intention would be ensure the successful establishment of vegetation on the slopes and top of the tailings dam once it has been decommissioned and closed. This cannot be done during operations. The tailings dam will be a permanent feature in the landscape and the impact thereof is being assessed by various specialists. Financial arrangements will be put in place to ensure that sufficient funding is available to rehabilitate the facility once it is closed. This funding will be added to an existing fund that is currently strictly monitored and managed by an independent financial firm. Gold One does not intend to leave behind an unrehabilitated site. In order for the processing plant at Modder East to remain operational, a tailings dam is necessary. It would also ensure that Gold One's other operations in the East Rand are viable. The sustained employment at Modder East would be a significant benefit to the employees and the communities in which they live. Several specialist studies (in addition to traffic) are still being conducted, including community health, dam break analysis, and property valuation studies. We trust that	

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				these will be able to provide answers to the questions raised.	
		22 November 2022 (via email)	Is there an option for Gold One to buy out permanent residences who have not benefited from your claims of community participation and are not interested (at all, regardless of whatever study Gold One will undertake) in living in an area that Gold One plans to compromise with the expansion of the tailing dam? Tailing dams have a negative impact on people's health, the air quality, the value of houses (this is factual!) and there are many examples of dams collapsing, I'm not interested in living in Eastvale as a direct result of the mines operations. A couple of years ago the mine against their initial word went on and opened another mine shaft (in a meeting that was not adequately advertised except for one A4 paper loaded with tiny words at the garage), in the meeting just as you are doing now, we were told what the mine will do. We were not asked to have a say or be given an option to vote against it. Minenhle Mthembu Against the expansion of the tailing dam	22 November 2022 (via email) Good morning The mine has no plans to purchase any properties at the moment. It is currently leasing the property where it is proposing to expand the TSF. I followed up with the mine regarding the below point about the opening of another shaft – Gold One expressly states that it has not opened any new shafts in the vicinity of Eastvale.	Complete
Vusi Mashinini (Modder East resident)	Attended Open Day, 27 October 2022	27 October 2022 (Open Day – verbal comments)	I want to express my unhappiness with the Open Day as a process for information sharing. Why is this happening on a week day during working hours? Are you satisfied that the turnout at the Open Day is representative of the Modder East community?	The Open Day was initially planned for a Sunday, but the community leaders that were consulted advised that this would not be the most suitable time for an Open Day. The purpose of the Open Day is to advise IAPs of the project, share information about the project and gather concerns. There is a 30 day commenting period in which to submit comments. It is hoped that attendees of the Open Day will inform their neighbours and other residents in their networks of the project and encourage them to submit comments. Comments can be sent to Prime	Complete

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				Resources via email or SMS before the consultation period ends on 21 November 2022. It is understood that not all affected parties will be available to attend the Open Day. It must be reiterated that this was considered as one information sharing opportunity, and that it was not the only forum or platform for raising concerns or making comments.	
			Why are there only Afrikaans information booklets available? An Afrikaans booklet was provided to my house.	GM apologised for this. Both English and Afrikaans booklets were printed. Hundreds of copies were distributed to Eastvale in both languages and unfortunately Afrikaans booklets would have gone to some houses where Afrikaans may not have been a first or second language. At the Open Day, due to the high numbers of people in attendance, the English booklets had run out. The English version of the booklet is available via email and can be provided or can be downloaded from the Prime Resources website.	Complete
			There are not enough attendees at this meeting. How was it advertised?	The meeting notices were place at various public points such as the public libraries, nearby shops, along the edge of the mine property, and the Skoonplaas Community Office. It was also advertised in two local newspapers, and registered IAPs (where contact details were available) were notified via email and SMS. It is also important for those community members who are aware of a project meetings to inform others so that as many as possible stakeholders participate and receive detailed information.	Complete
		27 October 2022; Open Day (Comment form)	I'm concerned about the traffic and damage to the roads from the big trucks. Why is the expansion being planned in the direction towards the communities instead of in other directions?	21 November 2022 (via email) Good day Thank you for your written comments raised at the Modder East TSF Expansion Open Day on 27 October 2022.	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
			I would prefer no expansion because there are no benefits, only problems.	Specialists will undertake a traffic assessment to determine the potential impact of traffic on the existing traffic volumes. Road conditions will also be assessed. This information will be made available during the next stage of the EIA process. The mine has considered developing on areas of land adjacent to the TSF, but those areas are not suitable. The area to the south is being developed as a solar park. The mine is currently leasing the portion of land that is being proposed for the expansion of the TSF. Please find attached an English copy of the Information Booklet as well as a copy of the Non-technical summary which provides more information.	
		22 November 2022 (via email)	Good Day, This is to confirm that the e-mail and attachments have been dully received, thank you.		Complete
Mr. Castro	Attended Open Day, 27 October 2022	27 October 2022 (Open Day – verbal comments)	It is clear that there are two very different audiences here- those looking for jobs, and those who have concerns about the project. He suggests that people should not write down their names on the attendance register as this will be used against them to show that they have approved the project. The register that has been filled in by all these people should just say that they are all looking for jobs.	GM assured the attendees that the purpose of the attendance register was to allow all present to register as IAPs, and therefore to allow Prime Resources to communicate with them and be informed of all project developments and future opportunity to comment. Prime Resources is not involved in any recruitment or employment associated with the Mine or the proposed TSF expansion. Attendees are also free to not provide their contact details or sign the register.	Complete
			The residents of Modder East/Eastvale should be consulted in a separate formal meeting and he proposed that the meeting be closed and adjourned.	GM indicated that a further meeting could be held specifically for Eastvale residents if required but the intention of a meeting for both communities was to ensure that the same information is shared with both communities. GM stated that the community leaders (TCDC) were consulted regarding the	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
				Open Day. She asked for clarification as to who should be involved in setting up future meetings. The TCDC was confirmed as the correct channel for organising future consultation.	
			It is clear that the environmental impact will be big and long term. The consultants and people from Gold One do not live here, the residents are the ones that live here and they are the ones that will have to live with the impacts that will remain.	GM indicated that Mr Castro's comments had been noted.	Complete
			The people of Modder East have suffered enough. As soon as you drive into the suburb on the Modder Bee Road you can see there is a mine by the impact on the roads. The community leaders put another settlement next to Alliance without even informing the residents of Modder East.	The existing traffic through Modder East is attributed largely to non-mine vehicles as the mine is not currently hauling any material to be processed at its plant.	Complete
			This project will devalue our property.	Noted; that is indicated as a possible impact. The relevant studies still need to be conducted.	Complete
Steven Mtema	Attended Open Day, 27 October 2022	27 October 2022 (Open Day – verbal comments)	Is the impact assessment ongoing, and are you going to share the findings? How will this be done?	The specialist studies are ongoing, and once completed will be compiled into an EIA report. There will be a second round of consultation during the EIA phase to share the findings of the impact assessment. One of the key purposes of this Open Day is to gather contact details of all IAPs so that they can be informed of the progress of the project, and future opportunity to comment. IAPs will be notified by SMS and email of the EIA commenting period. There will be a similar information sharing opportunity then. The EIA report will be available for comment. As with the Scoping Report, a shorter Non-Technical Summary Report will be available to make it easier for people to get all the relevant project information without having to read a very technical EIA document.	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
			The Mine should engage in more social responsibility in the Modder East and Skoonplaas communities, for example fencing and boom gates to increase safety, and encouraging youth employment. We have approached mine management in the past (e.g. for boom gates to reduce crime) but haven't received support.	JH addressed the social responsibility aspect and explained that it is a separate issue to the TSF expansion. He explained that Gold One has an approved SLP in place and they employ people from all areas around the mine, particularly for unskilled positions. The Mine has also implemented several initiatives like the Springs Taxi Association at a cost of approximately R1.5 million a month. Approximately R20 million is spent on implementing aspects of the SLP such as training, LED initiatives.	Complete
			The time of this meeting (i.e in the afternoon) and the provision of Afrikaans documents show that the company does not understand the community. No provision has been made for the elderly and disabled. Who advised to have the meeting during the week, and which languages to print?	It is understood that English is the preferred language, and all future consultation and documentation will be in English. This Open Day was not intended to be a public meeting and this is the reason that the event was not held in a hall. The venue does however have shade and seating for those in need and has allowed for all present to participate. One of the community leaders from the TCDC, Mr Abel Mthombeni, advised that it would be best for the meeting to be held during the week as some community members may not be able to attend the meeting during the weekend due to personal commitments. The languages to be printed were determined by Prime Resources based on experience with other projects. From past experience, community members prefer printed materials to be in English rather than African languages. Afrikaans copies were also printed because Eastvale comprises some Afrikaans-speaking residents and these also needed to be accommodated.	Complete
			How can we be guaranteed that this is not just another malicious compliance process.	GM reassured Mr Mtema that the purpose of the Open Day and the public consultation was	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
				to involve as many people as possible. Attendees are encouraged to share information about the project with their fellow residents, and encourage them to raise any concerns via the email address provided on the BID.	
			The Mine's responses regarding the SLP and social responsibility are not satisfactory. We suggest that the Mine engage with the residents of the neighbouring areas so that we can better understand what the Mine is doing as part of its SLP. It is clear there is a gap in understanding between the Mine and the community. Can we get a copy of the audit report to understand how the mine is doing in terms of its SLP commitments?	JH stated that the Mine is happy to share the contents of the SLP with the community. A new SLP for the coming 5 years is due to be implemented. The DMR had that morning conducted an audit of the SLP. The Mine would like to communicate with the community so that there can be an understanding of what has been done. JH noted that he would be happy to engage on the community development and investment aspects of the SLP. JH confirmed that the audits are conducted annually and where necessary improvements are undertaken based on the audits.	Complete
			What is the process to follow to get support from the Mine in terms of upgrading roads, etc.	JH noted that the roads are a Municipality concern, but that the Mine has an entire Department that deals with SLP issues. To get involved in a road upgrade they would have to go via the Municipality. There are also other organisations using the roads, not just the mine.	Complete
			Some stakeholders, such as labour union representatives, are not here in this meeting and community members don't have experts to assist them in understanding technical documents. What happens in this case?	The company is committed to ensure that all stakeholders fully understand the project and its impacts. Prime Resources, an independent and professional consulting company, has been engaged by the mine to conduct studies and the process will be objective based on scientific facts. Furthermore, Prime Resources will ensure that it explains all the processes and technical details involved.	Complete
Eastvale Community (including Fikile Ntuli, Sibongile Mafola,		18 November 2022 (via email)	Good evening to all stakeholders	21 November 2022 (via email) Good day all	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
Albert Mkhabela, Samuel Mkotoba)			I hope this email finds you well. Please find attached partition from the community of eastvale	Email and petition received. This will be incorporated into our final documentation to be submitted to the DMRE.	
Eastvale Community (including Fikile Ntuli, Sibongile Mafola, Albert Mkhabela, Samuel Mkotoba)		19 November 2022 (via email)	Good afternoon Stakeholders I hope this email finds you well. Please find follow up partitions from eastvale community.	21 November 2022 (via email) Good day all Email and petition received. This will be incorporated into our final documentation to be submitted to the DMRE.	Complete
Tebzology Ngubeni		21 November 2022 (via email)	I am writing to express my absolute disapproval of the expansion of the tailing dam. As a permanent resident of Eastvale Springs, I am disappointed with how the mine has been nonchalant about the youth unemployment in the area with many of Gold one's employees being people who are renting. The constant logistics of trucks that have degraded our roads, the miner's Active role in the population boom and establishment of illegal squatter camps in and around my area. The fundamental idea of the expansion of the tailing dam with no future plans of land rehabilitation is a violation of our rights and well being. The tailing will be permanent, the looming possibility of the dam collapsing will also be permanent and Gold one would have long exploited our area and left. The tailing dam is unnecessary and will not benefit the community in no way at all. The very idea is blatant disrespect, and a display of the highest order of a capitalist monopoly and manipulation, all at the cost of our health, value of houses and safety and general well being.	22 November 2022 (via email) Good day Thank you for your email. Your details have been added to the Interested and Affected Party (IAP) database and you will be notified of any further information as it becomes available. Gold One has been implementing a Social and Labour Plan (SLP) since it has been operational. This addresses employment and community investment aspects. Should you wish to obtain more information about these aspects, please feel free to contact Loselo Segwe (loselo.segwe@gold1.co.za) directly. A traffic study is being undertaken to determine the impacts of the additional traffic volumes (specifically trucks) on the existing traffic and road conditions. Gold One has not been involved in the development and expansion of the informal settlement at Skoonplaas. Growth of informal settlements is unfortunately a common occurrence in South Africa (and across the world), as individuals move into areas where there is the potential for employment. The expansion of the tailings dam does include a plan for rehabilitation and closure. The intention would be ensure the successful establishment of vegetation on the slopes	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
				and top of the tailings dam once it has been decommissioned and closed. This cannot be done during operations. The tailings dam will be a permanent feature in the landscape and the impact thereof is being assessed by various specialists. Financial arrangements will be put in place to ensure that sufficient funding is available to rehabilitate the facility once it is closed. This funding will be added to an existing fund that is currently strictly monitored and managed by an independent financial firm. Gold One does not intend to leave behind an unrehabilitated site. In order for the processing plant at Modder East to remain operational, a tailings dam is necessary. It would also ensure that Gold One's other operations in the East Rand are viable. The sustained employment at Modder East would be a significant benefit to the employees and the communities in which they live. Several specialist studies (in addition to traffic) are still being conducted, including community health, dam break analysis, and property valuation studies. We trust that these will be able to provide answers to the questions raised.	
Tshepo Maredi		24 October 2022 (via email)	Good day. I would like to raise my concerns regarding the proposed project. I am a resident of Modder East and has been for the past 25 years. As a community, we have raised our raised various concerns to the mine, none of them have been addressed or attended to. Amongst others, these are some of the issues that we are concerned about:	31 October 2022 (via email) Good afternoon Thank you for your email. We have discussed the content of your email with mine management, who have advised that we should put them in touch with you directly for questions relating to community development and Social and Labour Plan (SLP) commitments. As independent consultants we can unfortunately not respond to specific questions about existing SLP commitments.	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
			1. The majority of people employed by the mine are not the residents of Modder east. 2. The mine has been involved in developing other communities outside of Modder east but we are not aware of anything they have done for the Modder east community. 3. For the past 3 years, I have been enquiring if the mine is doing anything to develop the local SMMEs and to this day, none of my emails have been responded to. How are we to trust that proposed project will be beneficial to our community?	The TSF expansion will not specifically require a change or update to the Mine's existing and approved SLP. The SLP deals with employment, Local Economic Development and procurement procedures. 1. The SLP includes the details of the labour sending areas for the Mine. The mine has been in operation for a long time, and most employees are employed long-term. There is very little ongoing recruitment that takes place. Almost all employees of the Mine are from Gauteng, with the majority from Springs and surrounding areas (including Benoni, Daveyton, Tsakane, Westonaria, Slovo Park, Kwa Thema, Payneville). 2. The SLP also details the Local Economic Development programmes that have been implemented. The location and type of development projects were decided upon in with input from the community in the Stakeholder Engagement Forum, in collaboration with the Municipality. 3. According to the SLP, Modder East assisted and developed several SMME's in the Supplier Development Strategy. The SLP is updated every 5 years and is due to be updated soon. The relevant contact person at the mine to contact with regard to these questions and concerns is Loselo Segwe (loselo@gold1.co.za). Please feel free to cc ourselves in your communications with Mr Segwe as it would be useful to include this correspondence in the final project documentation. The TSF Expansion Project itself will have benefits to those employees that will remain employed in surface operations at the mine once underground mining ceases, as the processing plant will continue to operate.	

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
				There will also be the continued implementation of SLP commitments connected to this mining right. While these may not be specific to the Modder East community, they will service the larger community surrounding the mine. You have been added to the Interested and Affected Parties database (IAP) and will receive updates on the progress of the project and future opportunities for comment. Should you have any further questions about the TSF Expansion Project please feel free to get in touch.	
				31 October 2022 (via email) Good afternoon Apologies, there's a typo in the email address. It should read Loselo.segwe@gold1.co.za.	Complete
				31 October 2022 (Email from Loselo Segwe) Thank you Gene Your emails sums up everything in respect of the SLP. We have indeed met with Tshepo this afternoon and we will continue to engage him going forward.	Complete
Resident (no name provided)		31 October 2022 (via WhatsApp)	Good day, I'm a resident of the eastvale community And I just want to make it clear that we don't agree with this expansion. The mine has failed to in various aspects in aiding the community. The roads are terrible, the least that the mine could have done was to refurbish the roads leading to the mine	2 November 2022 (via WhatsApp) Good day, Thank you for your message. It has been noted and will go into the records of public participation. You have also been added to the database of Interested and Affected Parties and will be informed about any new project-related information as it becomes available. Could you please provide your name, if possible, for our records.	Complete
Interested parties					
Christopher Ramaremela		31 October 2022 (via SMS)	NKGM TSF. Job opportunities	2 November 2022 (via SMS) Good day,	Complete

Interested and Affected Parties	Date & method notified	Date comments received (method)	Issues raised	(Date & method of response) EAP's response to issues as mandated by the applicant	Consultation status
				Thank you for your message. It has been noted and will go into the records of public participation. You have also been added to the IAP database and will be informed about any new project-related information as it becomes available. Could you please provide your name, if possible, for our records.	
Siphiwe Leeu		24 October 2022 (via email)	Good day. I am writing on behalf of an organisation to register as an Interested and Affected Party (IAP) with the following details: Name of the Organisation: Legal Quotes Pty Ltd. Contact details: 073 660-6312/ 073 197 1795.	25 October 2022 (via email) Good morning Siphiwe Thank you for your email. Your details have been added to the IAP register.	Complete

10) ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE SITE

a) Baseline environment

(Type of environment affected by the proposed activity - its current geographical, physical, biological, socio-economic, and cultural character)

i) Climatology and topography

The application area is located in the summer rainfall region of the City of Ekurhuleni (CoE), East Rand, Gauteng, South Africa. According to the Köppen-Geiger climate classification, Springs falls under the subtropical climatic zone with a Moist Highveld Grassland climatic region (Conradie, 2012). Typical summer rainfall patterns vary from gentle soaking rains to late afternoon thunderstorms. The mean annual precipitation (MAP) is estimated to range from 600 to 800 mm/a (millimetre per annum). The rainy season of the study area takes place during spring, summer and autumn (September to April) (Figure 7).

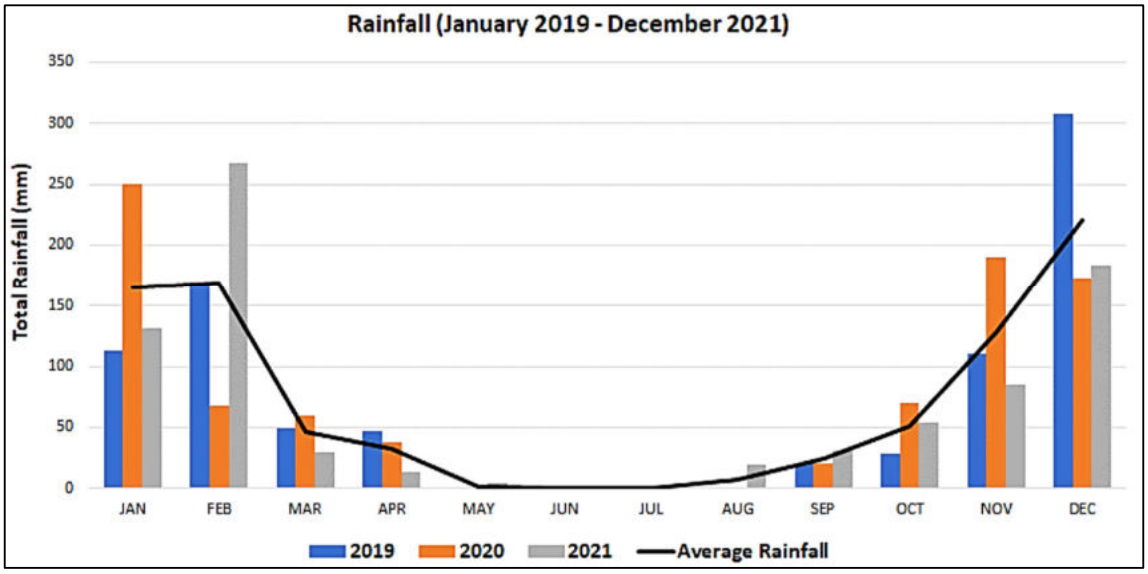

Figure 7. Total monthly and average rainfall for the project site for the period January 2019 to December 2021 (Rayten, 2022)

The area has a mean annual temperature (MAT) of 14.8 °C and often experiences thermic continentality i.e., high extremes between maximum summer and minimum winter temperatures, frequent occurrence of frost, and large thermic diurnal (24-hour cycle) differences (Scientific Terrestrial Services, 2022). The warmest month of the year is January with an average high and low of 30.6 °C and 9.5 °C respectively. The winter months (June to August) are characterised by intermittent cold spells. The coldest month is July with an average high of 18.6 °C and low of -3.4 °C. Refer to Table 9 for the average temperatures from January 2019 to December 2021.

Table 9. Minimum, maximum and monthly average temperatures for January 2019 to December 2021 (Rayten, 2022)

Monthly Average Temperatures (°C)												
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Minimum	9.5	10.4	8.4	6.2	-0.2	-0.9	-3.4	-1.4	2.4	4.9	10.2	9.6
Maximum	30.6	29.1	29.1	26.2	21.8	18.6	18.6	21.6	24.9	29.1	30.6	30.5
Average	21.3	20.5	19.3	15.7	12.0	8.3	8.3	11.5	11.5	17.8	20.7	20.6

The topographical elevations of the RE of the Farm Cloverfield 75 IR range from 1 588 mamsl to 1 625 mamsl (metres above mean sea level). The site topography associated with the proposed northern TST expansion site differs from the topography associated with the proposed western TDS expansion site. The northern site slopes in a north-eastern and eastern direction and the western site slopes in an eastern and south-eastern direction. The

general topography is undulating in nature. Due to the existing mine operations, the localised topography of the area has been altered as dams and dumps protrude above the natural horizon.

The predominant wind directions originate from the north-northeast, north and north-northwest. Seasonal variation wind fields for the period of January 2021 to December 2022 are illustrated in Figure 8. The prevailing wind during autumn and winter originates from the east, whilst the prevailing winds during spring and summer are from the north-northeast. Less frequent northerly, north-north westerly, north-easterly and east-south easterly winds are observed throughout the seasons. Significant variation in the wind field data is observed during winter. Wind speeds are generally high during all seasons. This is primarily a result of the migration of a high-pressure cell during seasonal changes. The average wind speed for the area is in the order of > 3.6 m/s (meters per second).

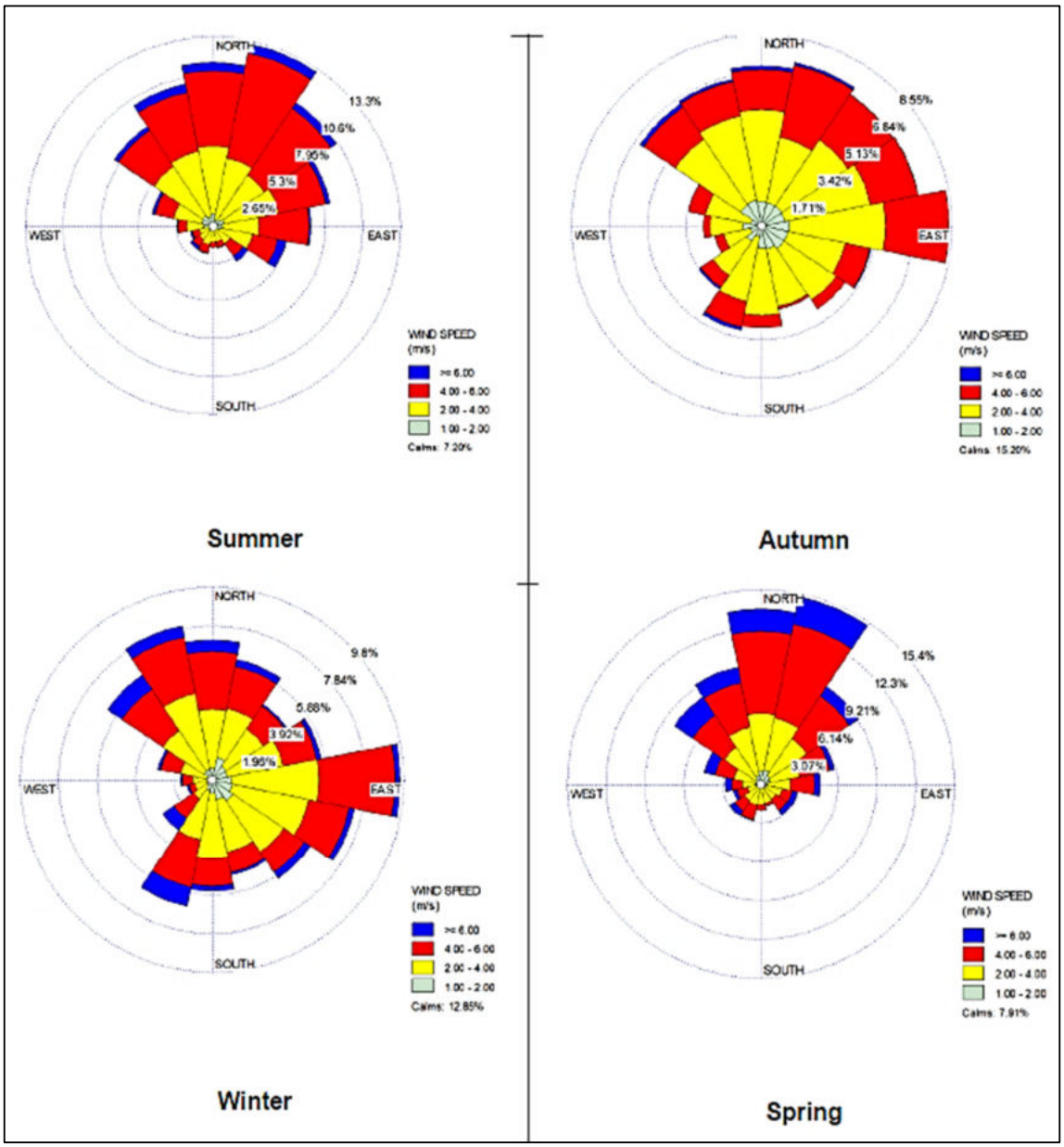

Figure 8. Seasonal variation of winds for the project site for the period January 2019 to December 2021 (Rayten, 2022)

ii) Air quality

An air quality study was undertaken by Rayten Engineering Solutions for the proposed project (Appendix 4). The project area is located within the nationally declared Highveld Priority Area (HPA) (Figure 9), which is associated with poor air quality due to elevated concentrations of criteria pollutants such as PM_{10}, $PM_{2.5}$, SO_2 and NO_x. Industrial emitters are the largest contributor of criteria air pollutants, accounting for 89% of PM_{10}, 90% of NO_x and 99% of SO_2 (DEA, 2011).

Major industrial sources in the HPA are grouped into the following categories:

- Power generation
- Coal mining
- Primary metallurgical operations
- Secondary metallurgical operations
- Brick manufacturers
- Petrochemical industry
- Ekurhuleni industrial sources (excluding the above)
- Mpumalanga industrial sources (excluding the above) (DEA, 2011).

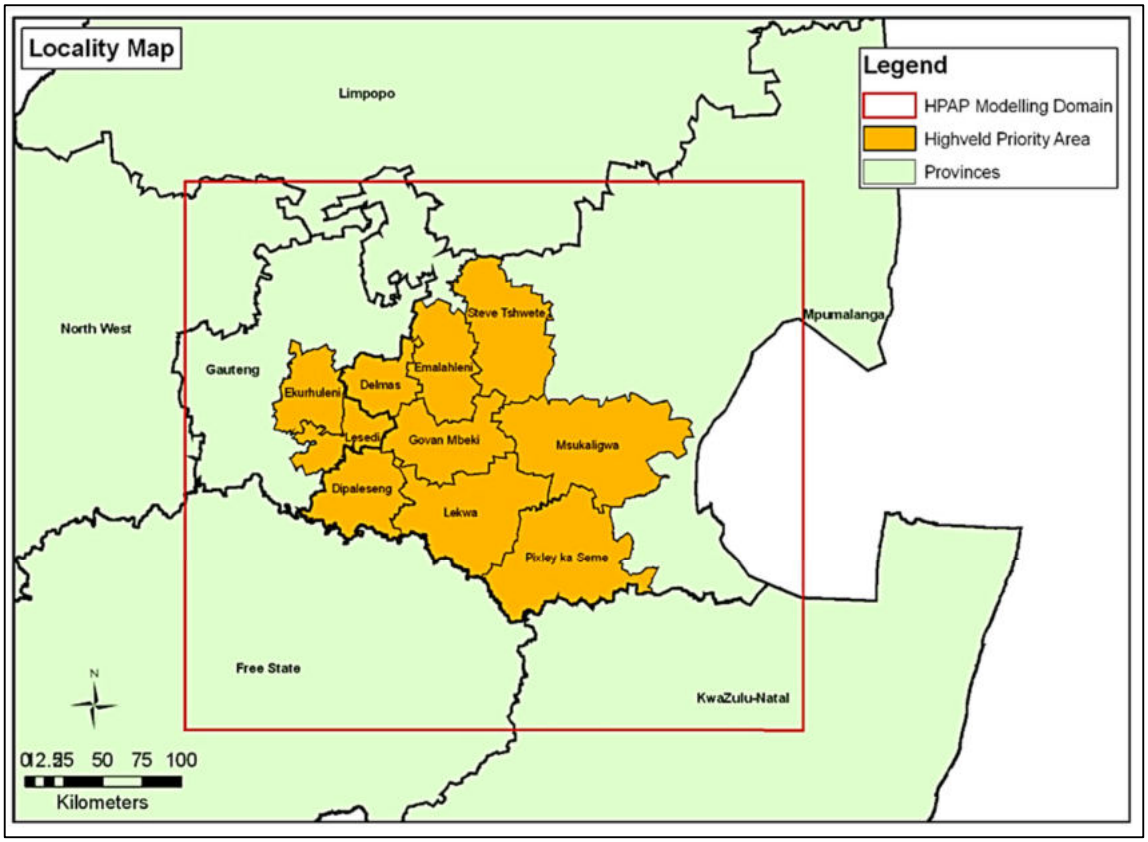

Figure 9. Locality map depicting the HPA (DEA, 2011)

Sources of air pollutants in the CoE were compiled during the development of an Air Quality Management Plan for the Ekurhuleni Metropolitan Municipality (now CoE) in 2004. Sources of air pollutants within the CoE include:

- Industrial and commercial – including fuel burning by businesses, hospitals and schools
- Waste treatment and disposal – waste incineration, landfills and wastewater treatment works
- Residential – household combustion of coal, paraffin, liquid petroleum gas and wood

- Transport – petrol and diesel driven vehicle tailpipe emissions, vehicle entrained road dust, brake and tyre wear fugitives, rail-related and aviation emissions
- Mining – especially wind-blown emissions from mine tailings impoundments
- Other – tyre burning, wildfires, fugitive dust emissions from open areas and agricultural activities.

Potential sources of emissions and air pollutants within close proximity to the mine were identified by assessing the surrounding land uses / industries. Existing and potential sources of emissions include:

- Enstra Paper Mill, located approximately 1.6 km to the south-southwest of the project area
- Impala Platinum, a base and precious metal refinery, located approximately 3.4 km to the south-southwest of the project area
- Grootvlei Proprietary Mines, a gold mine, located approximately 6 km to the south-southeast of the project area
- Largo Colliery, a coal mine, located approximately 7.2 km to the south-east of the project area.
- PFG Glass, a producer of structural and windscreen glass, located in the New Era industrial site in Springs approximately 8.2 km to the south-southwest of the project area
- Fuel burning appliances such as boilers, generators and heaters at schools, hospitals, households etc.
- Fugitive dust sources from roads, open areas, agricultural activities and mining (surrounding areas)
- Landfills and waste resource dumps (south-southeast and south-west of mine)
- Vehicle activity and exhaust emissions (surrounding areas)
- Agricultural activities such as tilling, harvesting, fertilizer and chemical treatment, and burning of residue crops (mainly north-east and south-east of mine)
- Wind-blown emissions from closed / decommissioned TSFs.

The existing air quality was assessed using available monitoring data for the period of January 2021 to December 2022 from the Springs Air Quality Monitoring Station (AQMS), located 8.8 km southwest of the mine (Table 10).

Table 10. Air pollutants from the Springs AQMS for January 2021 – December 2021 (Rayten, 2022)

Pollutant	Year	Annual average (ppb)	Daily / hourly average concentrations	Capture rate (Jan 21 – Dec 22)	Comments
PM_{10}	2019	62.85	56.68 µg/m^3 (daily)	71.5%	234 exceedances of the PM_{10} daily standard of 75 µg/m^3 were observed over the period. Annual standard of 40 µg/m^3 was exceeded for 3 years. Possible sources: unpaved roads, solid fuel combustion at nearby informal settlements and small-scale agricultural activities.
	2020	52.93			
	2021	54.46			
$PM_{2.5}$	2019	30.08	29.93 µg/m^3 (daily)	71.5%	199 exceedances of the $PM_{2.5}$ daily standard of 40 µg/m^3 were observed over the period. Annual standard of 20 µg/m^3 was exceeded for all 3 years. Possible sources: unpaved roads, solid fuel combustion at nearby informal settlements and small-scale agricultural activities.
	2020	30.05			
	2021	29.38			
SO_2	2019	5.12	5.80 µg/m^3 (daily)	73.2%	No annual or daily exceedances were recorded. Possible sources: solid fuel combustion at nearby informal settlements and vehicle exhaust emissions from surrounding roads.
	2020	6.70			
	2021	5.57			
NO_2	2019	No data	0.00 - 124.57 ppb (hourly)	59.2%	No annual exceedances were recorded. 1 exceedance of the NO_2 hourly standard of 106 ppb was observed over the period.
	2020	14.53			
	2021	14.51			
CO	2019	No data	323.81 ppb (hourly)	54.1%	No exceedances of the CO hourly standard were recorded. Possible sources: vehicle exhaust emissions and solid fuel combustion at nearby informal settlements.
	2020				
	2021				

Pollutant	Year	Annual average (ppb)	Daily / hourly average concentrations	Capture rate (Jan 21 – Dec 22)	Comments
O_3	2019	No data	28.68 ppb (8-hourly)	52.9%	25 exceedances of the O_3 8-hourly standard of 61 ppb were recorded during the period. Possible sources: vehicle exhaust emissions and solid fuel combustion at nearby informal settlements.
	2020				
	2021				

Moderate to high data was recorded for most pollutants. The overall ambient air quality of the Springs area is generally of poor quality as several exceedances of particulate matter were noted (Table 10).

The following existing emission sources were identified within the mining footprint (Rayten, 2022):

- Material handling operations (truck offloading operations at the ROM feed bin and at the WRD)
- Crushing activities
- Wind erosion from exposed areas (existing TSF and WRD)
- Vehicle dust entrainment on unpaved access roads
- Diesel-fired process equipment
- Stack emissions.

In accordance with the National Environmental Management: Air Quality Act, 2004 (NEMA: AQA) and the site's current Atmospheric Emissions License (AEL), dustfall monitoring has been recorded and reported annually since February 2010. The NKGM dust fallout monitoring network currently consists of 10 single-unit dust bucket stations. All but three of the stations are monitored in terms of the non-residential area standard (1 200mg/m^2/day); GM-9, GM-18 and GM-20 are considered in terms of the residential area standard (600 mg/m^2/day) due to the proximity to informal and formal dwellings. Monitoring sites are illustrated in Figure 10 and dustfall monitoring results for the period of February 2021 to January 2022 are shown in Table 11.

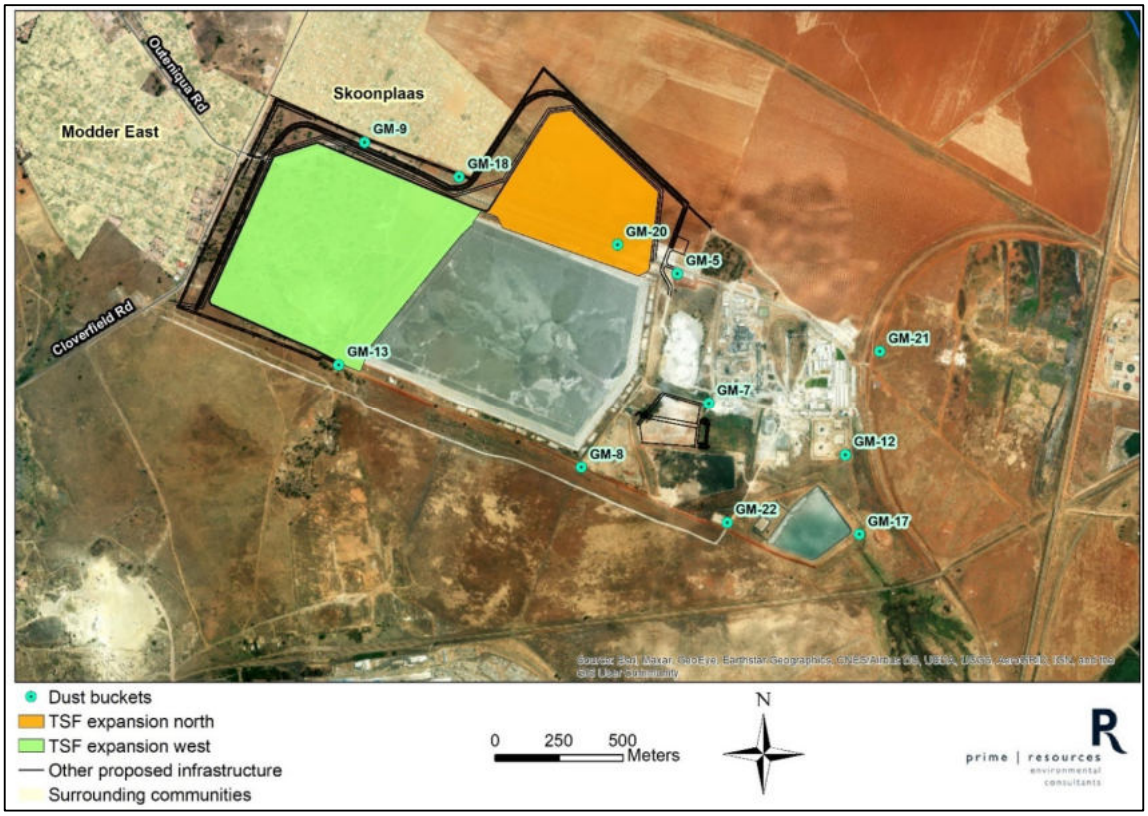

Figure 10. Dustfall monitoring sites at NKGM (Rayten, 2022)

Note: The bucket at Site GM-7 was decommissioned in November 2021 and relocated to site GM-22, thus site GM-7 is no longer active.

Table 11. NKGM dustfall exceedances at the monitoring network sites from February 2021 to January 2022 (Rayten, 2022)

Modder East Mine					Exceedances of the Residential Standard (D < 600)	Exceedances of the Non-Residential Standard (600 < D < 1 200)
Site ID	Description	Unit type	Classification	Coordinates		
GM-5	Near Northern Premises Boundary, near Security Entrance	Single	Non-residential	26°11'24.30"S 28°27'16.08"E	-	1
GM-7*	South of Plant	Single	Non-residential	26°11'40.80"S 28°27'20.40"E	-	3
GM-8	South-East Corner of TSF	Single	Non-residential	26°11'48.96"S 28°27'2.40"E	-	-
GM-9	West of TSF	Single	Non-residential	26°11'7.44"S 28°26'32.04"E	2	-
GM-12	Eastern Premises Boundary	Single	Non-residential	26°11'47.52"S 28°27'39.66"E	-	-
GM-13	South-West Corner of TSF	Single	Non-residential	26°11'35.70"S 28°26'28.26"E	-	-
GM-17	South-Eastern Premises Boundary	Single	Non-residential	26°11'57.66"S 28°27'41.58"E	-	-
GM-18	Northern Premises Boundary, along Access Road	Single	Non-residential	26°11'11.89"S 28°26'45.35"E	4	2
GM-20	Northern Premises Boundary, along Access Road, north of TSF	Single	Non-residential	26°11'20.59"S 28°27'7.65"E	-	-
GM-21	North-East of Mine, near Railway Line	Single	Non-residential	26°11'34.27"S 28°27'44.56"E	-	-
GM-22	Next to Magazine (Southern Premises Boundary)	Single	Non-residential	26°11'56.09"S 28°27'22.94"E	-	-

D = Dustfall rate (mg/m^2/day)
**GM-7 was decommissioned in November 2021 and relocated to site GM-22.*

Dustfall rates ranged from 69 to 5 652 mg/m^2/day. On average, higher dustfall rates were recorded over the August to October monitoring periods.

Between February 2021 and January 2022, 6 exceedances of the non-residential standard (D > 1 200 mg/m^2/day) were recorded in terms of the National Dust Control Regulations (2018). One of these monitoring sites (where there were two exceedances) are located along the access road on the edge of Skoonplaas.

A total of 6 exceedances of the residential standard (D > 600 mg/m^2/day) were recorded for the monitoring period. Both these monitoring sites are located along the access road, adjacent to Skoonplaas.

iii) Noise

A noise study was prepared by Enviro-Acoustic Research (EARES) for the proposed project (Appendix 5). The prevailing ambient noise levels are largely caused by emissions from a combination of noise sources along the boundaries of the mine. Potential sources and contributors to the soundscape of the area include vehicular noise (both light motor vehicles and heavy-duty trucks), mine activity noise (processing plant, conveyors, workshops), industrial noise, agricultural noise, railway noise and ventilation noise. As the existing mine is located within 8 km of an aerodrome, aircraft noise may be heard from time to time.

EARES conducted several noise measurements at 6 strategic points around / at the mine (Figure 11). Measurements included semi-continuous long-term measurements over a two-night period (labelled L01 and L02). Several short-term 10-minute measurements were recorded twice during the day and once during the night (labelled S01 – S04).

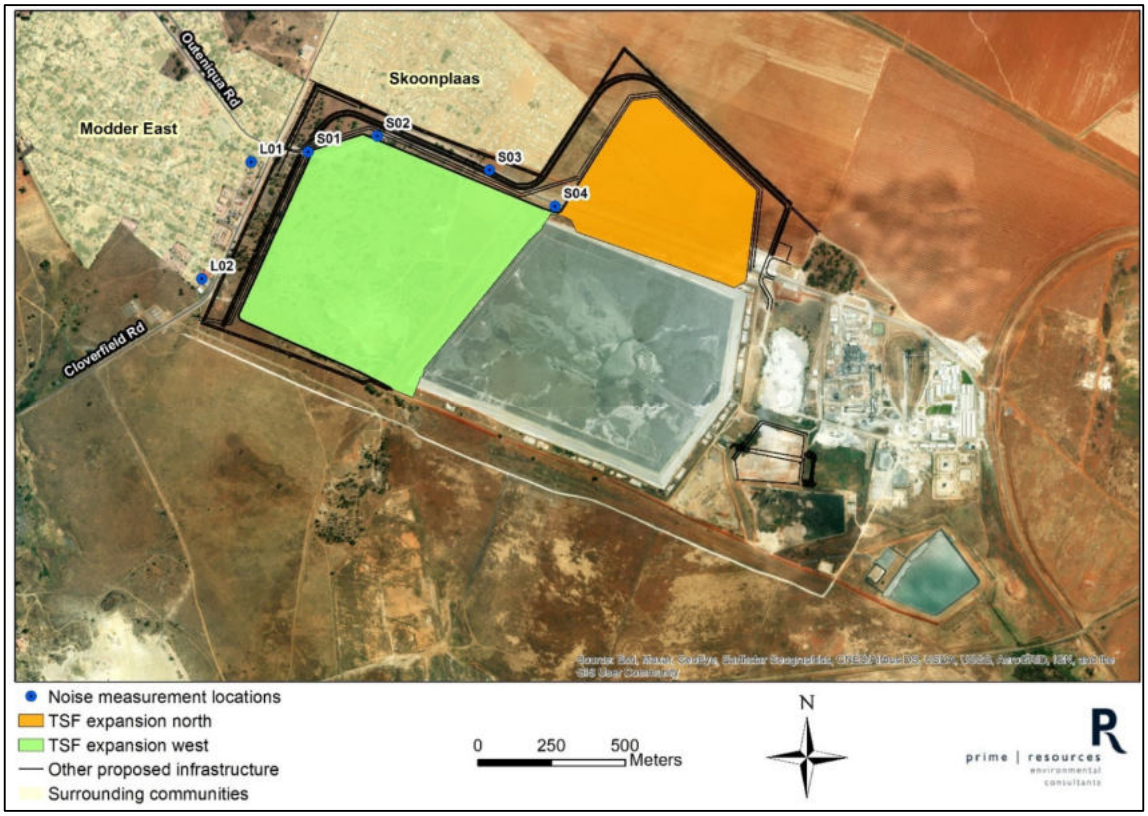

Figure 11. Localities where ambient sound levels were measured (EARES, 2022)

The highest sound level during the day was measured at 67.0 dBA (L02) and the lowest sound level was measured at 35.0 dBA (L02). The highest sound level during the night was measured at 53.5 dBA (L02) and the lowest sound level was measured at 27.7 dBA (L01). Daytime average sound levels at the mine are 50.4 dBA and night-time average sound levels are 41.2 dBA. The short-term measurement results are presented in Table 12 below.

Table 12. Results of the short-term measurements collected in the area (EARES, 2022)

Measurement locality ID and time	$L_{Amax,i}$ (dBA)	$L_{Aeq,i}$ (dBA)	$L_{Amin,f}$ (dBA)	$L_{Aeq,f}$ (dBA)	$L_{A90,f}$ (dBA90)	Comments
S01 (11:36)	53.1	40.2	33.9	39.0	35.2	Birds dominant; dogs barking in area; passing cars and cars revving in areas; hooting from vehicles; traffic noises from Cloverfield Weg.
S02 (11:52)	61.8	50.0	33.3	46.7	35.1	Birds dominant; passing cars; audible music; plane overflight in distance.
S03 (12:07)	68.8	55.3	34.4	51.7	35.9	Loud voices from township; audible birds; audible road noise in distance; audible mining noise; Boeing dominant when passing over; rooster crowing; cars passing.
S04 (12:25)	65.4	50.1	33.3	47.4	34.7	Audible birds; kids' voices playing in distance; trucks passing; plane overhead.
S01 (16:44)	61.8	51.3	32.8	45.3	34.7	Audible birds; dogs barking in area; passing cars; music from township; traffic noises from Cloverfield Weg; plane overflight in distance.
S02 (17:02)	73.1	53.5	31.1	49.1	35.8	Audible birds; passing cars; audible music from township; voices from direction of township; plane overhead.
S03 (17:19)	73.5	54.0	33.8	49.7	34.2	Audible birds and crickets; passing cars; audible music from township; voices from direction of township.
S04 17:33)	84.8	56.1	33.7	51.0	35.9	Audible birds; passing cars; clearly audible music from township; plane overflight significant.
S01 (21:44)	62.0	42.8	30.2	39.0	32.4	Audible insects (crickets); audible music from township; traffic noises from Cloverfield Weg; plane overflight in distance.

Measurement locality ID and time	$L_{Amax,i}$ (dBA)	$L_{Aeq,i}$ (dBA)	$L_{Amin,f}$ (dBA)	$L_{Aeq,f}$ (dBA)	$L_{A90,f}$ (dBA90)	Comments
S02 (22:06)	65.6	48.2	31.3	41.4	33.4	Audible insects (crickets); passing cars; traffic noises from Cloverfield Weg; audible music from township.
S03 (22:06)	84.4	47.2	32.4	44.4	32.3	Audible insects (crickets); dogs barking in area; passing cars; traffic noises in distance; audible music from township; plane overflight significant.
S04 (22:51)	62.7	45.8	32.2	37.9	30.4	Audible insects (crickets); dogs barking in area; traffic noises in distance; audible music and voices from township.

The baseline noise levels at NKGM are in line with the recommended noise levels as prescribed in SANS 10103:2008. The ambient sound levels of the project area and surrounds are typical of a suburban noise district:

- 50 dBA for the daytime period
- 40 dBA for the night-time period.

Noise-sensitive receptors generally include places of residence and areas where members of the public may be affected by noise generated by the proposed activities. Potential noise sensitive receptors in the area were identified to be the Skoonplaas informal settlement and the suburb of Modder East.

iv) Visual aesthetics

A visual study was compiled by Prime Resources for the proposed project (Appendix 6). The visual quality of the greater surrounds is not of high quality. The following existing landscape features dominate the character of the project site and surrounds:

- Mining and associated infrastructure (including the existing TSF)
- Overhead railway structures and power lines
- Rural and residential land-use features
- Agricultural land-use (crop cultivation) features.

The most sensitive receptors have been identified as the residents of Skoonplaas and Modder East due to their proximity to the proposed project.

v) Radiation

A radiation technical memorandum has been prepared by Aquisim Consulting (Pty) Ltd for the project (Appendix 7). Naturally occurring radionuclides associated with the uranium, thorium and actinium decay series are associated with the Witwatersrand gold-bearing reefs. These naturally occurring radionuclides are present in ore brought to the surface for processing and consequently will be carried through to the mineral processing residues. Activities that exploit these gold-bearing reefs have the potential to enhance the concentrations of naturally occurring radionuclides in the environment by concentrating and moving radioactive material from inaccessible locations to locations where humans can be exposed.

Materials that contain naturally occurring radionuclides are generally referred to as Naturally Occurring Radioactive Material (NORM). Most of these naturally occurring radionuclides are members of the uranium (U-238), actinium (U-235), and thorium (Th-232) radioactive series. NORM has the potential to impact negatively on the health of humans that are exposed to these materials. Practices that exploit the earth's resources may further enhance the potential for human exposure to NORM by way of their products, by-products, residues and wastes. Gold mine tailings are expected to have levels of radon (a naturally occurring radioactive gas) and uranium. Radioactivity is a result of radionuclides in the uranium decay chain.

In South Africa, the protection of human health and the environment from adverse effects associated with exposure to ionising radiation is regulated in terms of the National Nuclear Regulator Act (NNRA) (Act No. 47 of 1999) and the Nuclear Energy Act (NEA) (Act No. 46 of 1999). The NNRA established the National Nuclear Regulator (NNR) as the statutory body responsible for regulating the nuclear industry, as well as regulating NORM associated with the mining and mineral processing industry.

Gold One holds a Certificate of Registration issued in 2007 by the NNR for the Modder East Operations.

Given the historical nature of the Project area, it can be assumed that the natural radiological background conditions of the area have been disturbed through several years of mining activities. All available environmental radiological data that are currently available for the Project area will be included in the current baseline site characterisation.

The only criteria that are included in legislation that can be used to evaluate a potential radiological impact are:

- An activity concentration of 500 Bg/kg for solids (radionuclide specific), which indicates if the material can be classified as radioactive
- The dose criterion of 1 mSv/year (or a dose constraint of 0.25 mSv/year).

Radiological assessments done to date at the mine indicate that members of the public are not exposed above the dose constraint of 205 uSv/y (or 0.25 mSv/y).

A radiation study considering the radiation exposure through groundwater and atmospheric pathways is underway and the findings and recommendations will be included in the EIA phase.

vi) Community health and vulnerability to disease

A Scoping Rapid Appraisal Health Impact Assessment (RAHIA) was compiled by Infotox for the project (Appendix 8). The study looked at the current health status of Ekurhuleni as a whole by assessing the leading causes of natural death and comparing these with provincial and national figures to determine if there are existing health vulnerabilities in the surrounding communities. Ward and community (e.g. formal or informal) level health data was not available, and therefore the entire CoE was used to infer data for the study area.

<u>All age groups</u>

The scoping study indicated that communities within the CoE are not more vulnerable to mortality due to any of the top ten leading underlying diseases (Table 13) in comparison to the South African and Gauteng population in general. The CoE communities are comparably or slightly less vulnerable. Therefore, an increased vulnerability concerning the respiratory and cardiovascular systems due to the exposure to air pollutants is not indicated in the all-age population.

Table 13. National, provincial and CoE leading underlying causes of death in 2018 of all ages (Infotox, 2022)

Cause of death	South Africa		Gauteng		CoE	
	%	Rank	%	Rank	%	Rank
Tuberculosis	6.0	1	4.3	3	4.6	2
Diabetes mellitus	5.9	2	4.7	2	4.3	3
Cerebrovascular diseases	5.1	3	4.1	4	3.8	5
Other forms of heart disease	5.1	4	5.8	1	4.8	1
Human Immunodeficiency Virus (HIV)	4.8	5	2.7	10	*Not ranked*	
Hypertensive diseases	4.5	6	3.7	6	3.4	4
Influenza and pneumonia	3.9	7	3.9	5	4.0	7
Ischaemic heart disease	3.0	8	3.4	7	3.3	8
Chronic lower respiratory diseases	3.0	9	2.8	8	2.8	9
Malignant neoplasms of digestive organs	2.4	10	2.7	9	*Not ranked*	

%: Percentage of death due to cause

Rank: Rank of cause of death, from 1 to 10 based on the number of deaths

Not ranked: Not among the top 10 causes of death

Population younger than 15 years

As children are more susceptible to health effects of air pollution and considering that this age group represents 20 to 30% of the total receptor population, this age group was examined separately. A moderately increased vulnerability to mortality due to heart disease and other respiratory diseases is prominent in the Gauteng population when compared to the South African population in general. Differentiated age-group data is not available for the CoE population. However, the trend of comparative to slightly decreased vulnerability has been applied to the CoE population younger than 15. Thus, a slightly increased vulnerability of the cardiovascular and respiratory systems due to exposure to air pollutants might be prevalent in the population younger than 15 years at the CoE.

Population older than 60 years

The age group older than 65 was assessed separately (*albeit* only representing 1.4 to 9% of the total receptor population) because the elderly are known to be sensitive to the health effects of air pollutants. A moderately increased vulnerability to mortality due to ischaemic and other forms of heart disease is indicated in the Gauteng population. A slightly increased vulnerability to the cardiovascular system, but not to the respiratory system, due to exposure to air pollutants might be prevalent in the CoE.

In summary, the Infotox study found that communities in CoE as a whole are not more vulnerable to mortality due to any of the relevant diseases when compared with the South African and Gauteng population in general. Communities in CoE are comparably, or in some cases less vulnerable, and therefore an increased vulnerability to the respiratory and cardiovascular effects of exposure to the air pollutants of interest is not indicated in the all-age population. The population under 15 and over 65 were considered separately because they may be more susceptible to air pollutants. Those younger than 15 make up 20 to 30 % of the total population in the receptor area, and the study found that a slightly increased vulnerability to the cardiovascular and respiratory effects of exposure to the air pollutants of interest might be prevalent in CoE. The group aged 65 and over constituted only 1.4 to 9 % of the population in the receptor area, and the Infotox study showed a slightly increased vulnerability to the cardiovascular, but not to the respiratory effects of exposure to air pollutants might be prevalent in CoE.

vii) Land use, soils and land capability

A soil and land use study was compiled by Zimpande Research Collaborative (Appendix 9). The current land use of the proposed western TSF site is dominated by abandoned derelict buildings and a waste rock dump consisting of soil and rock remains, possibly originating from historic mine-related excavations. The proposed northern expansion site is dominated by agricultural land which includes soya bean and maize crops. The soil type at the proposed western expansion site is of the Witbank (Wb) form and the soils at the proposed northern expansion site are of the Hutton (Hu) and Nkonkoni (Nk) forms.

Witbank soils

Soils of the Witbank formation are man-made soil deposits that have no recognisable diagnostic soil horizon, have not undergone pedogenesis and have very low agricultural potential. The land capability of the Witbank soils is classified as Class VIII (extremely severe limitations, not suitable for grazing or afforestation) and the land potential is classified as L8 (very low potential land).

Hutton soils

The Hutton soil form is distinguished by a uniform red colour in the second diagnostic horizon. The land capability of the Hutton soils is classified as Class II (slight limitations, arable land) and the land potential is classified as L3 (good potential land). These soil forms are suitable for arable agricultural land use with minimal management interventions.

Nkonkoni soils

Soils of the Nkonkoni form display similar characteristics to the Hutton soil form. The distinctive difference is that these soils can be found at depths < 60 cm and the lithic horizon occurs at shallower depths; thus, limiting the choice of crop to be cultivated. The land capability of the Nkonkoni soils is classified as Class IV (severe limitations, arable land) and the land potential is classified as L4 (moderate potential land). Although there are restrictions, the Nkonkoni soil form is suitable for arable agricultural land use and is able to make a moderate contribution to agricultural productivity on a regional and national scale.

Dominant soils at the proposed northern expansion site

Photo 1. Hutton soil form

Photo 2. Hutton soil form

Photo 3. Nkonkoni soil form

Photo 4. Nkonkoni soil form

Dominant soils at the proposed western expansion site

Photo 5. Witbank soil form

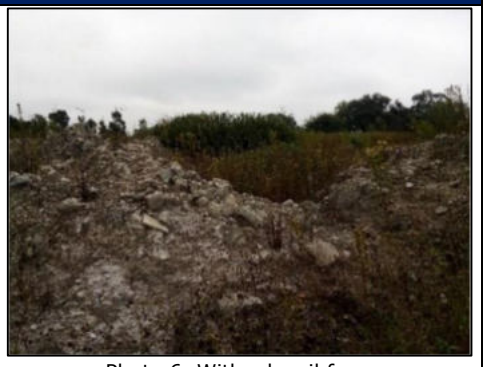

Photo 6. Witbank soil form

Figure 12. Dominant soils associated with the investigation area (ZRC, 2022)

viii) Archaeology

A heritage study was undertaken by Archaetnos Culture & Cultural Resource Consultants (Archaetnos) (Appendix 10). No sites of the Stone Age, Iron Age or the Historical Age were recorded during the field survey. Four sites of

cultural heritage significance were identified in the surveyed area and surrounds (Figure 13). The sites of cultural heritage significance are summarised below:

- Site 1 – An office complex (western expansion site): Remains comprise of old foundations and collapsed concrete and brick buildings with some being older than 60 years (Photos 1, 2, and 3 in Figure 14). This site is approximately 200 m x 200 m.
- Site 2 – Remains of old mining infrastructure (small portion in western expansion site): Remains comprise of large concrete foundations and old dam walls (Photos 4 to 7 in Figure 14). This site is approximately 172 m x 140 m.
- Site 3 – Remains of old mining infrastructure (western expansion site): Ruins are thought to form part of a previous mining industry and waterworks. These features comprise concrete channels, underground tunnels, walling, tall concrete structures and pillars and it is believed that these features are older than 60 years (Photos 8 and 9 in Figure 14). This site is approximately 175 m x 103 m.
- Site 4 – A fenced-off graveyard (not located in proposed TSF expansion sites): The cemetery comprises several unmarked graves (Photos 10 and 11 in Figure 14) and is approximately 170 m x 150 m.

The remains of other old buildings and structures were also noted in the study area; however, the specialist deemed these structures as having no heritage significance. The cultural significance of Sites 1, 2, and 3 is *low*. These sites may be disturbed (after the EA has been awarded) without a formal permit application. The cemetery was determined to be of *high* cultural significance; however, it is not located within the proposed development footprint.

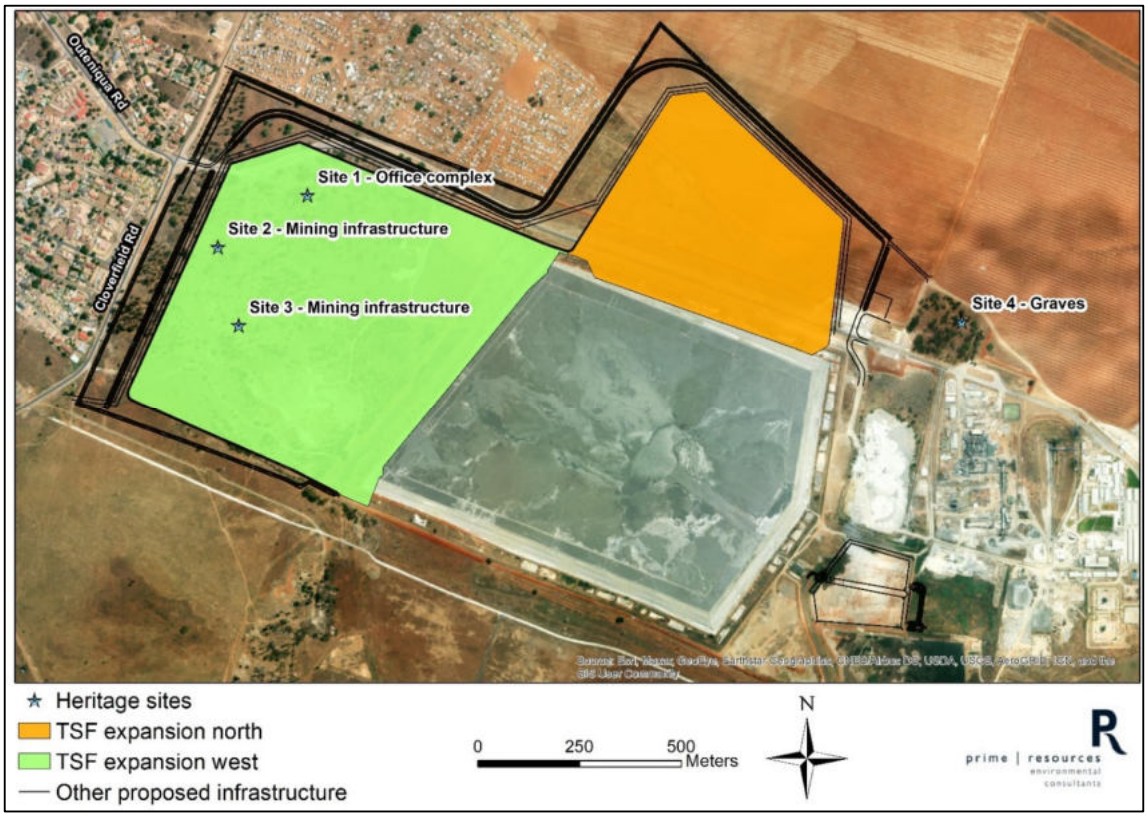

Figure 13. Location of the identified archaeological sites (Archaetnos, 2022)

Site 1: Office complex (26°11'11.66"S 28°26'26.05"E)

Photo 1. Structure older than 60 years

Photo 2. Remains of foundations

Photo 3. Outside view of a pavilion younger than 60 years

Site 2: Mining infrastructure (26°11'15.75"S 28°26'18.10"E)

Photo 4. Remains of old mining infrastructure

Photo 5. Remains of concrete foundation blocks

Photo 6. Remains of an old dam

Photo 7. Wall younger than 60 years

Site 3: Mining infrastructure (26°11'22.01"S 28°26'19.93"E)

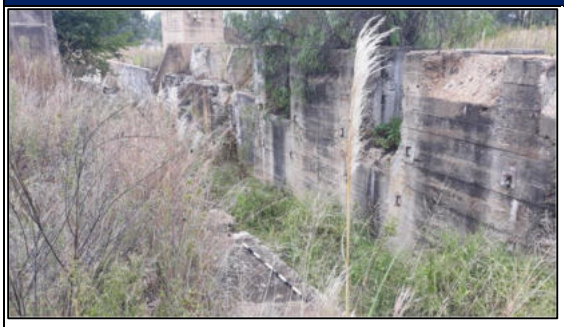

Photo 8. Remains of concrete channels

Photo 9. Large concrete structures

Site 4: Graveyard (26°11'21.95"S 28°27'23.85"E)

Photo 10. Fenced-off graveyard

Photo 11. View of graves

Figure 14. Archaeological sites within the application area and surrounds (Archaetnos, 2022)

ix) Geology and palaeontology

The study area is located on the East Rand Basin (ERB). This area of the CoE is underlain by rocks from the Swaziland to Mesozoic eras, which comprise of basement granite gneisses, arenaceous and argillaceous sediments of both the Witwatersrand (2.8 Ga) and Ventersdorp (2.7 Ga) Supergroups, and sediments and dolomites of the Transvaal sequence. Overlying the older rocks is a cover of thin veneer, younger Karoo sediments belonging to the Karoo Supergroup (302 to 180 Ma).

These Karoo sediments comprise of shale, sandstones, tillite and coal beds of the Ecca Group with the Vryheid Formation overlying the Dwyka formation at its base. Along the rivers and watercourses are recent deposits of sand and alluvium of the late Quaternary age (Figure 15). Unconsolidated to semi-consolidated sediments are restricted to the major river courses. The Transvaal Supergroup is divided into two Groups, the lower Chuniespoort Group and the upper Pretoria Group. The Chuniespoort Group is divided into the basal Malmani Subgroup that comprises of chert-rich dolomites, breccia and limestones. The Black Reef Formation, which is the principal target at NKGM, lies at the base of the overlying Transvaal Supergroup. The Black Reef quartz-pebble conglomerates are hosts for gold mineralisation. The lithology of the ERB is summarized in Figure 16. The current TSF area and proposed TSF expansion areas have been historically undermined at great depth (between 620 and 900 metres below surface).

A doleritic sill forms the majority of the sub-crop in the mining area. The Malmani dolomite overlying the Black Reef quartzites is 250 m to 270 m thick and has been intruded by several virtually flat-lying sills. The Malmani Dolomites around NKGM is of the Monte Christo formation (chert-rich) and Oaktree formation (chert-poor).

The greater area surrounding the NKGM is dominated by geological structures of various ages such as faults, dykes and sills (Figure 17) which serve as conduits resulting in the hydraulic linkage between the Malmani dolomites and the Witwatersrand strata. The Modder East Dyke crosses over a section of the proposed western expansion site. Two parallel striking dykes crossed over the proposed northern expansion site. Geological models of the underlying Witwatersrand Supergroup indicate block faulting which resulted in small-scale graben structures. A groundwater

study undertaken by Groundwater Square in 2018 noted that geological structures in the overlying Malmani Dolomite (Chuniespoort Group) and Dwyka-Ecca Groups may have originated as a result of the reactivation of earlier post-Witwatersrand structures. The recorded geological structures cut through both the Witwatersrand (Central Rand Group) and Transvaal (Malmani Dolomites) Supergroups (Groundwater Square, 2018).

Figure 15. General surface geology of the study area

Supergroup	Group	Subgroup	Formation	Reef	Layer	Thickness (m)
Karoo Supergroup	Ecca					60
	Dwyka		Dwyka			0-15
Transvaal Supergroup	Chuniespoort	Malmani	Eccles Lyttleton Monte-Christo Oak Tree			75-370
				Black		10-30
Ventersdorp Supergroup	Klipriversberg		Alberton			0-455
Witwatersrand Supergroup	Central Rand	Turffontein	Mondeor			210-260
			Elsburg			400-420
			Kimberley	Kimberley		150-250
			Doornkop			0-200
		Johannesburg	Booysens			100-130
			Krugers-dorp			100-250
			Rand-fontein			250-300
			Main	Main/ South		0-90
	West Rand	Jeppestown	Roode-poort			90-100
			Crown			30
			Babrosco			100-350
			Rietkuil			110-230

Figure 16. Lithostratigraphic column for the East Rand Basin (Labuschagne, 2015)

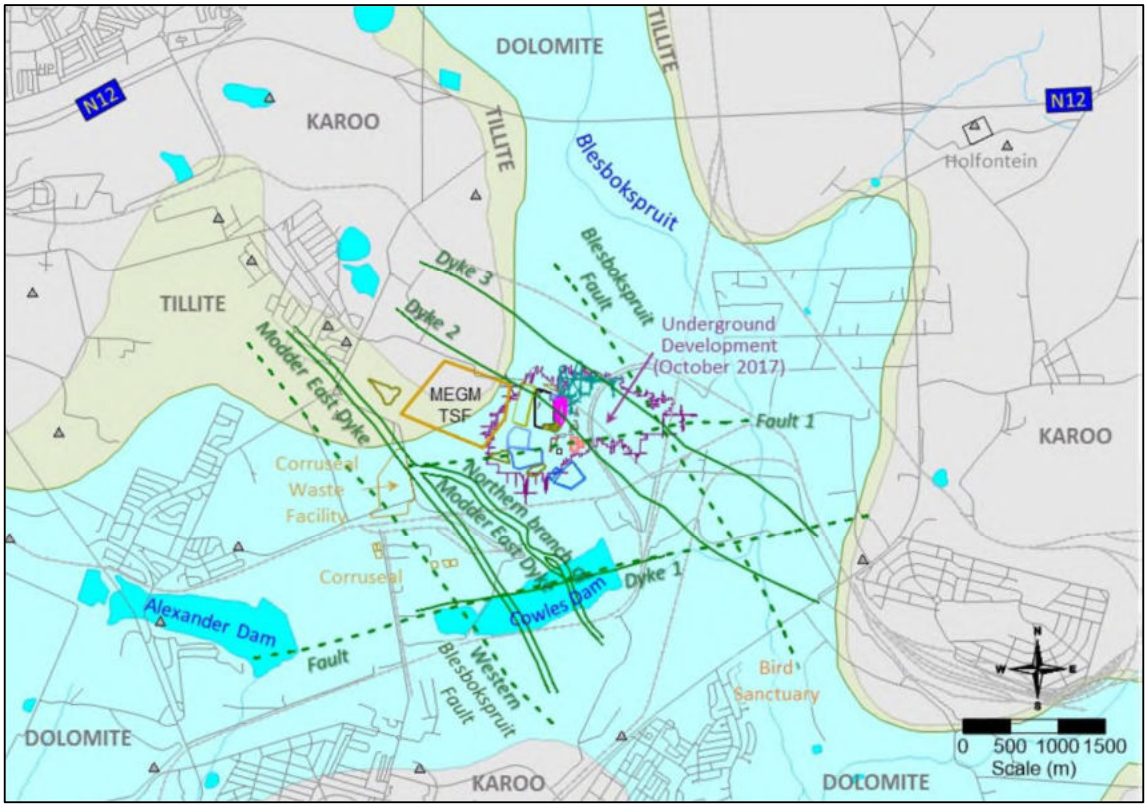

Figure 17. Structural geology of the greater surrounds (Groundwater Square, 2018)

According to the online SAHRIS map, the area is indicated as having a *very high* sensitivity in terms of palaeontology (Figure 18). This palaeontological sensitivity is triggered as stromatolites, trace fossils of algal colonies, could occur in the Malmani Subgroup (Transvaal Supergroup, Chuniespoort Group). Transported, fragmented fossils of the *Glossopteris* flora and invertebrates could be preserved in the Dwyka Group (Karoo Supergroup). The Vryheid Formation (Karoo Supergroup, Ecca Group), host to extensive coal seams, could preserve impressions of plants. These include plants of the *Glossopteris* flora that comprise of leaves, seeds, reproductive structures and wood of *Glossopteris*, as well as other plants such as lycopods, sphenophytes, ferns and early gymnosperms. However, studies suggest that the Witwatersrand Supergroup is non-fossiliferous as it is too old and has been metamorphosed (McCarthy, 2006).

A palaeontology study was undertaken by Professor Marion Bamford (Appendix 11). No fossils were found during the site survey and the specialist confirmed that it is extremely unlikely that fossils will be encountered in the overlying soils and sands of the Quaternary. The specialist further concluded that there is a small chance that fossils may be found below the ground surface in the dolomites of the Malmani Subgroup or the shales of the Vryheid Formation.

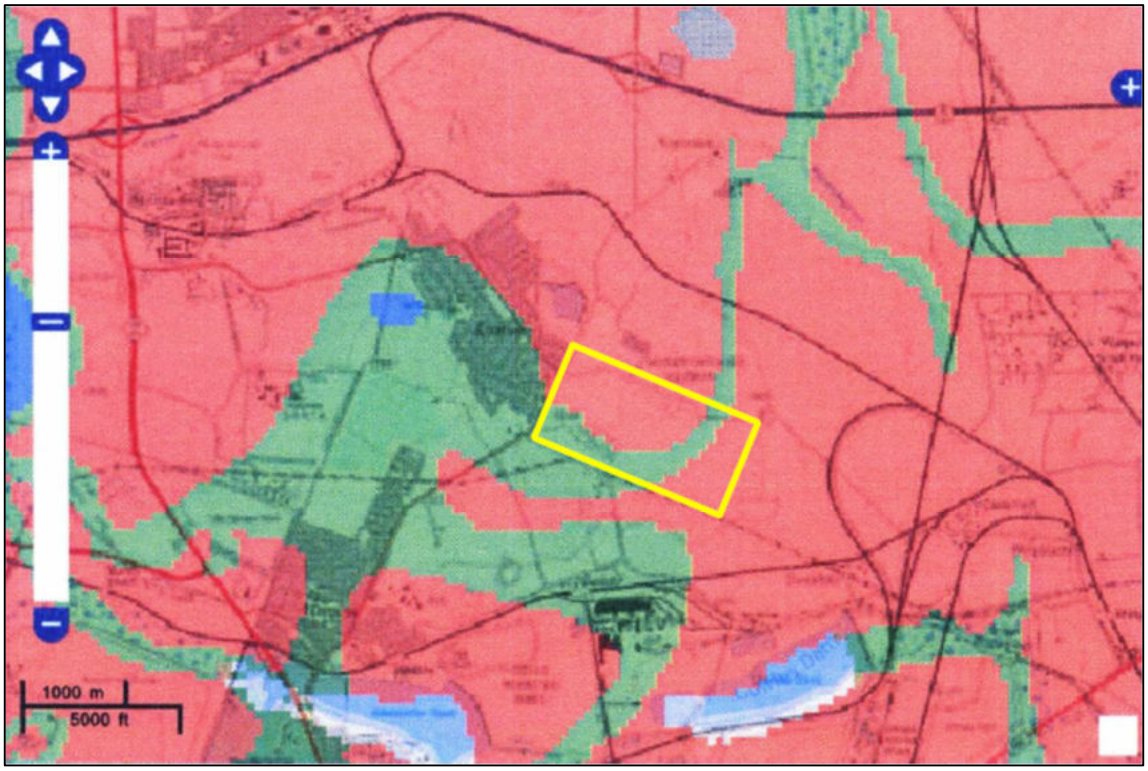

Figure 18. SAHRIS palaeo-sensitivity map for the site for the NKGM operations
**Red = very high sensitivity; Green = moderate sensitivity; Yellow = project area*

x) Hydrogeology

A hydrogeological baseline study was undertaken by Wesst Consulting (Appendix 12). Additional information contained in this section was sourced from previous hydrogeological studies for Modder East Operations which cover the same footprint as the application area:

- Groundwater Model Update, Drilling of Deep Monitoring Boreholes and Recommendations from Water Monitoring Report compiled by Groundwater Square, November 2018
- Groundwater Impact Assessment compiled by Groundwater Square, April 2006

The project area is situated within the East Rand Basin (ERB) which has been extensively mined in the past. As a result, the hydrogeological setting has been altered considerably. Furthermore, NKGM is situated in a historically active geological setting (Groundwater Square, 2018).

Hydro-stratigraphic units / Aquifers

The general area is underlain by dolomite, particularly the Malmani Dolomite incorporating dolomitic and karst aquifer systems, as well as an intergranular and fractured aquifer system. According to the DWS Hydrogeological map (series 2526 Johannesburg), these aquifers have average borehole yields between 0.1 and 0.5 L/s (litres per second) (intergranular and fractured aquifer) to > 5.0 L/s (dolomitic aquifer).

A horizontal boundary divides the Malmani Dolomite in an upper major aquifer of approximately 100 m thick, including a shallow weathered zone aquifer, and a lower less permeable aquifer. Faults and dyke contacts serve as preferential flow paths, while the Modder East Dyke and its Northern Branch Faults are believed to be very impermeable below the highly permeable shallow weathered zone aquifer (Groundwater Square, 2018). In general, these features may significantly influence groundwater flow, effectively linking shallow and deep aquifers with the mine. Surface water sources like the Cowles Dam and the Blesbokspruit are also intersected at several localities, serving as links to the aquifers. The Cowles Dam is the main source of surface water ingress into the neighbouring

Grootvlei Mine's underground workings (Groundwater Square, 2006). The main aquifer systems of the saturated zone applicable project area are summarised in Table 14.

Table 14. Aquifer systems of the saturated zone relevant to the project area (Wesst, 2022)

Hydro-stratigraphic units / Aquifers	Description
Shallow weathered aquifer	Considered a secondary porosity aquifer occurring in the transitional soil and weathered bedrock zones. This aquifer is generally unconfined with phreatic water levels. This aquifer is most susceptible to contamination.
Deep intergranular and fractured aquifer	Groundwater yields are more heterogeneous and generally higher than that of the shallow weathered zone. This aquifer is generally semi-confined or confined with piezometric heads often significantly higher than the water-bearing fracture position.
Deeper karst / dolomite aquifer	The groundwater yields and permeability in this dolomitic zone is higher than the shallow weathered aquifer. This aquifer system stores large quantities of groundwater due to the karst channels and fissures in the rock system. The kart / dolomite aquifer system is extremely vulnerable to various pollution sources.

Groundwater recharge

Prior to mining in the area, the major groundwater characteristic was likely a seasonal high-low water level fluctuation, with most of the groundwater activity taking place in the upper levels of the Malmani Dolomite. Mining has however changed the hydrogeological setting of the ERB with the development of a secondary aquifer system with several preferential recharge areas. The dewatering activities in the area have resulted in the lowering of groundwater levels. A cone of dewatering exists immediately to the north of Cowles Dam on the Enstra property. The groundwater table in this area has likely been affected by the Modder East Dyke, which has been mined through by Grootvlei Mine (Groundwater Square, 2006)

To the east of the site, the Malmani Dolomite is covered with Karoo strata. Groundwater recharge on the Karoo Strata is estimated at 1.5% of the MAP (mean annual precipitation), compared to 10% on the dolomite. The groundwater contribution to the Cowles Stream and the Blesbokspruit appears to be minimal.

Groundwater gradient and flow

The general groundwater flow direction is towards the Blesbokspruit and Cowles Dam (south-east direction). Limited deeper flows could have occurred along preferential pathways formed from water-bearing faults and dyke contact zones. Groundwater level elevations with flow directions, as calibrated with the numerical flow model, are depicted in Figure 19. Groundwater tends to flow in an easterly, south-easterly direction towards the Blesbokspruit and Cowles Dam, largely aligning with the topography (Figure 20).

Hydrocensus

ERWAT is the only user of groundwater located within 3 km of the surface and underground activities of the mine. In accordance with NKGM's Water Use Licence (WUL), the mine currently conducts quarterly groundwater monitoring in and around the site at 28 monitoring boreholes. An additional 4 boreholes were drilled at the proposed expansion sites to obtain a better understanding of the local groundwater flow and hydrogeological character. The results will be included during the EIA phase.

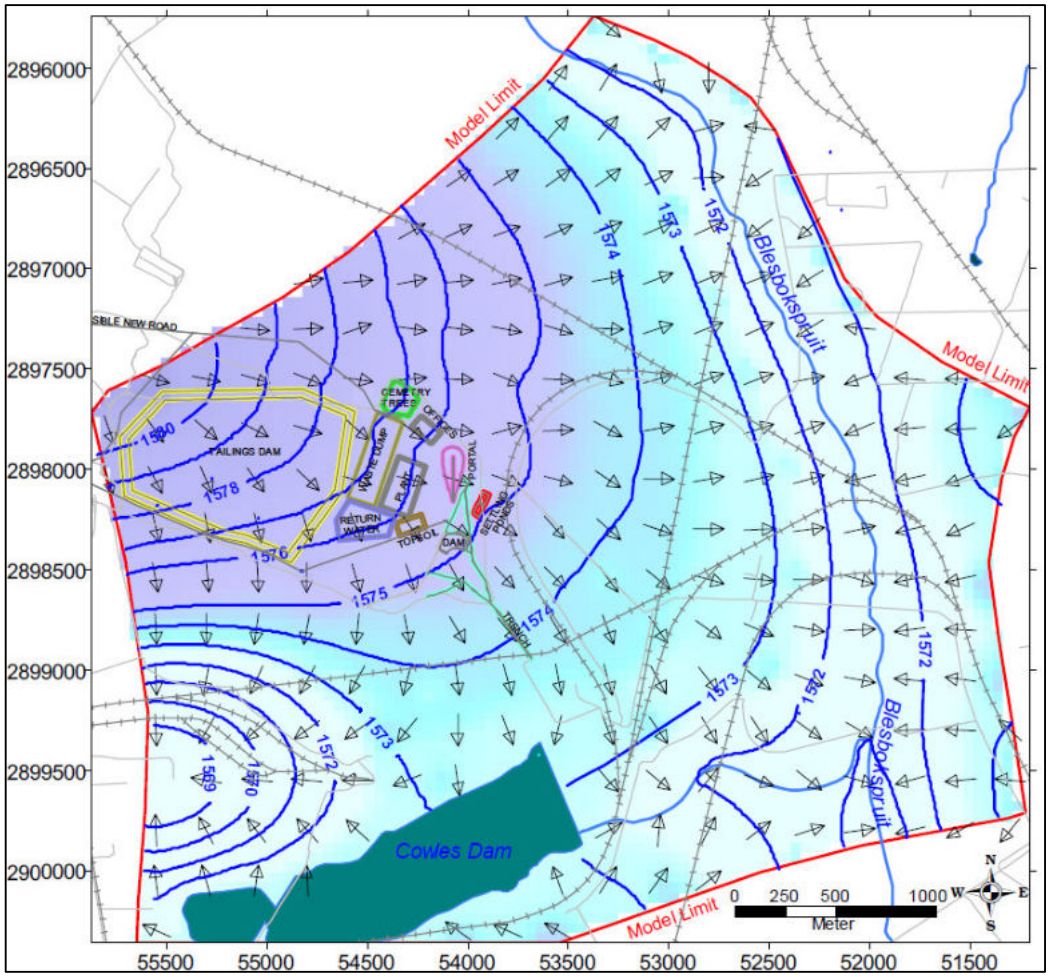

Figure 19. Groundwater levels and flow direction in the NKGM area (Groundwater Square, 2006)

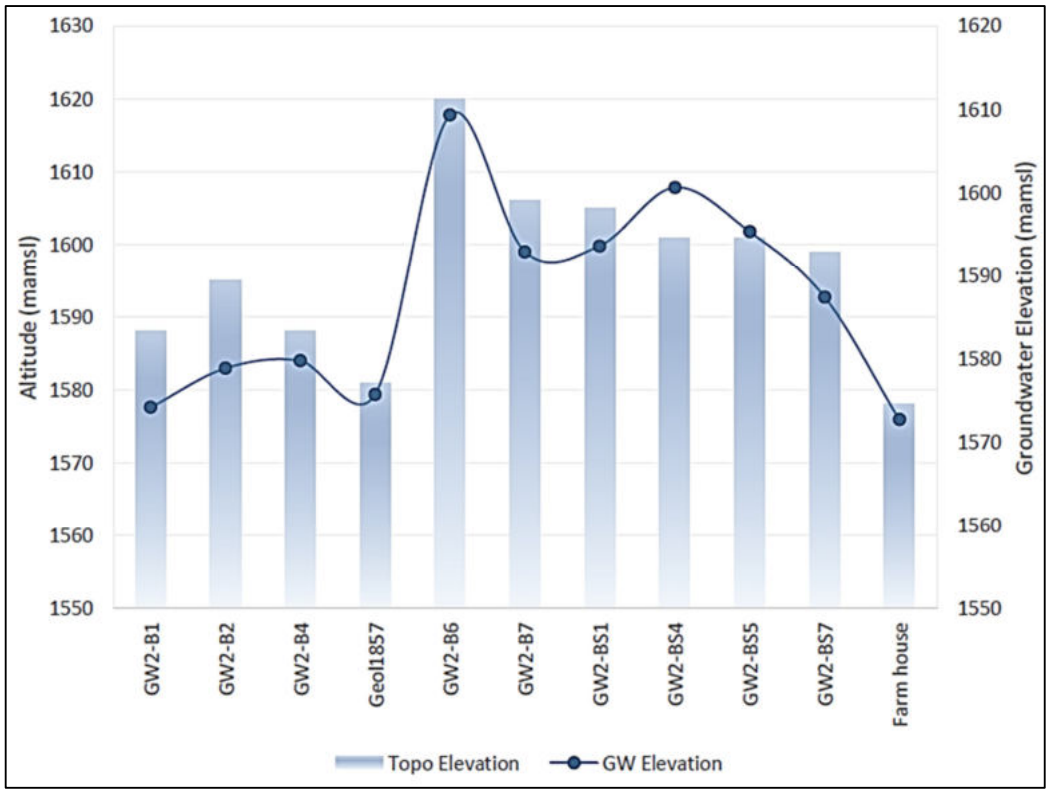

Figure 20. Topographical elevation vs. groundwater elevation correlation graph (Wesst, 2022)

Hydrochemistry

Groundwater quality has been altered due to historic and current mining activities in the ERB. NKGM's March 2022 quarterly monitoring results are presented in Table 15 and were evaluated against the SANS 241 (2015) Drinking Water Standards. Several exceedances of parameters were noted.

Groundwater quality can generally be classified as neutral (pH of 6 – 8.5), with the majority of sampling points classified as being hard to extremely hard ($CaCO_3$ > 600 mg/L). The salinity, as measured by TDS (Total Dissolved Solids), of the groundwater monitoring localities varied from non-saline (TDS < 450 mg/L) to saline (TDS > 450 mg/L) and extremely saline (TDS > 2 400 mg/L).

Elevated sulphate and metal (iron and manganese) concentrations were observed at monitoring boreholes downstream of the NKGM operations. These elevated concentrations are usually associated with mine pollution indicators. Increased nitrate concentrations were also observed in some monitoring boreholes. These may be indicative of mine blasting activities or other anthropogenic activities. The chemical distribution and the locations of the monitoring boreholes for the March 2022 quarterly sampling occasion is illustrated in Figure 21.

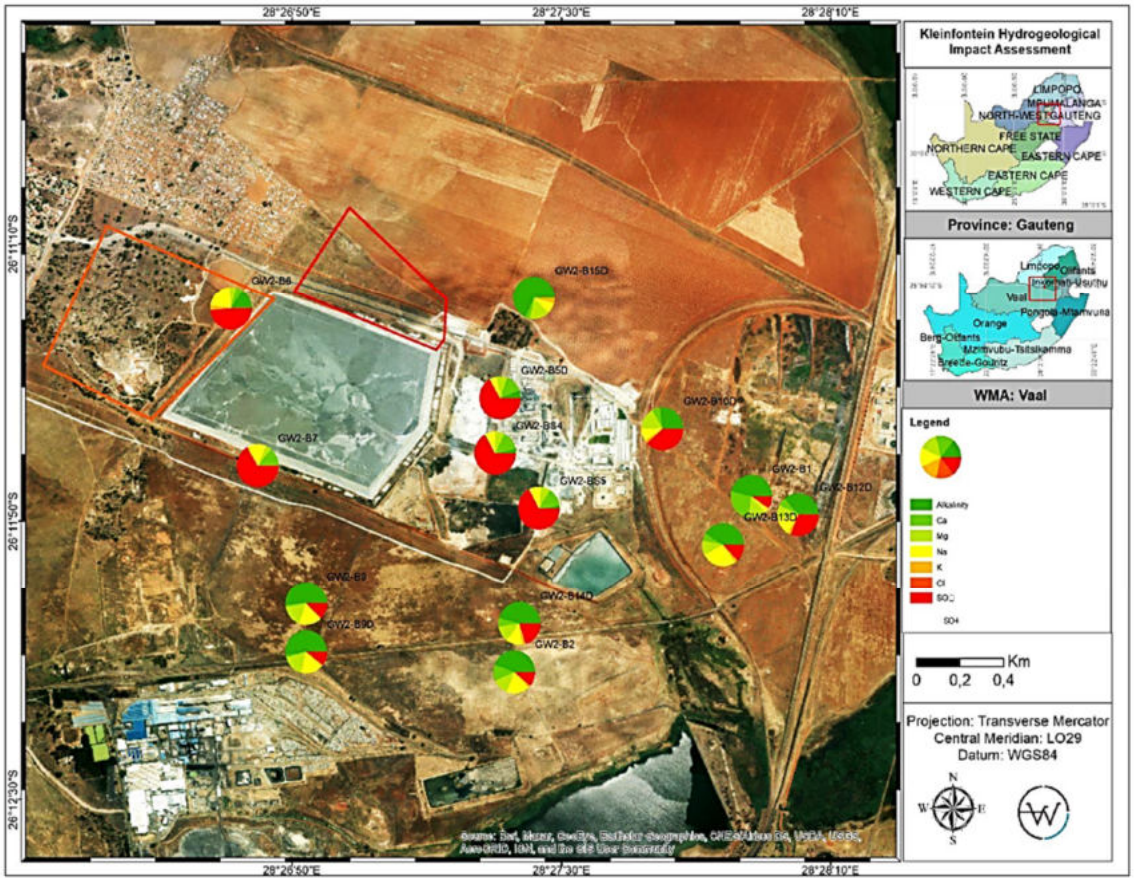

Figure 21. Chemical distribution of monitored boreholes (Wesst, 2022)

Table 15. Groundwater quality results associated with the March 2022 monitoring event (Wesst, 2022)

Parameter / analyte	Unit	Risk	SANS 241:2015 limits	Groundwater monitoring boreholes													
				B1	B2	B5D	B6	B7	B9	B9D	B10D	BS4	BS5	B12D	B13D	B14D	B15D
pH @ 25 C	pH	*Operational*	≥ 5.0, ≤ 9.7	7.06	7.40	6.99	7.03	6.21	7.47	7.81	8.18	6.54	5.32	7.54	8.81	7.66	7.56
EC (electrical conductivity)	mS/m	*Aesthetic*	≤ 170	111.00	89.60	313.00	7.03	529.00	163.00	175.00	50.80	364.00	198.00	60.00	81.00	36.60	20.10
Total Alkalinity (as $CaCO_3$)	mg/L	-	-	190.00	152.00	168.00	45.70	28.80	413.80	430.00	56.80	104.00	24.50	103.00	121.60	76.00	58.80
Total Hardness (as $CaCO_3$)	mg/L	-	-	514.29	272.44	1885.95	98.17	2349.93	592.26	600.23	172.96	2142.49	859.72	163.00	173.52	108.93	63.20
TDS (total dissolved solids)	mg/L	*Aesthetic*	≤ 1200	727.36	527.65	2781.58	329.65	4913.26	953.10	967.87	343.13	3447.31	1509.42	311.66	441.23	187.25	86.57
Cl (chloride)	mg/L	*Aesthetic*	≤ 300	53.00	98.40	70.80	52.60	419.95	308.00	324.00	34.00	229.00	144.00	63.60	122.07	40.20	20.60
SO_4 (sulphate)	mg/L	*Health / Aesthetic*	≤ 250 / ≤ 500	37.00	37.70	1844.00	140.00	2917.73	99.80	85.30	80.10	2162.36	880.00	87.10	37.60	33.41	0.85
F (fluoride)	mg/L	*Health*	≤ 1.50	BDL	BDL	BDL	BDL	0.28	BDL	0.09	BDL	BDL	0.40	0.10	BDL	BDL	0.14
NO_3 (nitrate)	mg/L	*Health*	≤ 11	76.13	32.32	BDL	0.51	3.61	0.35	BDL	22.69	BDL	10.10	BDL	8.90	1.97	BDL
PO_4 (phosphate)	mg/L	-	-	0.47	BDL	BDL	0.24	BDL	BDL	BDL	BDL	BDL	BDL	0.10	BDL	0.19	BDL
NH_4 (ammonium)	mg/L	*Aesthetic*	≤ 1.5	BDL	5.62	BDL	2.11	19.10	1.13	0.75	17.47	1.38	0.61	4.46	7.57	1.86	BDL
Na (sodium)	mg/L	*Aesthetic*	≤ 200	12.50	61.00	147.00	62.50	618.62	136.00	139.10	19.40	267.57	124.00	38.34	79.10	21.09	7.22
K (potassium)	mg/L	-	< 100	4.70	6.77	16.50	11.10	48.90	8.85	9.29	5.48	14.89	10.80	7.95	8.30	4.34	3.72
Ca (calcium)	mg/L	-	< 300	108.00	40.50	336.40	14.82	624.46	12.90	13.22	12.70	468.33	184.00	17.93	17.31	10.92	3.21
Mg (magnesium)	mg/L	-	< 100	59.40	41.60	235.81	14.85	192.00	136.00	137.75	34.30	236.30	97.20	28.71	31.64	19.83	13.40
Al (aluminium)	mg/L	*Operational*	≤ 0.30	BDL	BDL	BDL	0.02	BDL	BDL	BDL	BDL	BDL	0.74	BDL	BDL	0.04	0.71
Fe (iron)	mg/L	*Health / Aesthetic*	≤ 0.30	0.03	0.04	BDL	0.60	0.99	0.16	0.07	0.03	0.58	5.98	0.07	0.02	0.11	1.34
Mn (manganese)	mg/L	*Health / Aesthetic*	≤ 0.10	0.02	BDL	0.04	0.02	30.60	0.10	0.009	BDL	4.07	1.52	BDL	BDL	BDL	0.09
Si (silicon)	mg/L	-	-	16.90	7.34	20.60	0.43	26.70	0.51	0.50	2.50	1.57	6.08	2.68	2.15	1.16	1.48
Cu (copper)	mg/L	*Health*	≤ 0.05	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Cr (chromium)	mg/L	*Health*	≤ 2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.02	BDL	BDL	BDL	BDL
Co (cobalt)	mg/L	*Health*	≤ 0.50	BDL	BDL	0.23	BDL	0.51	BDL	BDL	BDL	0.02	0.13	BDL	BDL	BDL	BDL
Pb (lead)	mg/L	*Health*	≤ 0.01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
As (arsenic)	mg/L	*Health*	≤ 0.01	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Sn (tin)	µg/L	*Health*	≤ 0.04	BDL	0.02	0.01	BDL	1.01	0.03	0.03	BDL	0.01	BDL	BDL	0.02	BDL	BDL
Zn (zinc)	mg/L	*Aesthetic*	≤ 5	BDL	BDL	BDL	BDL	0.03	BDL	BDL	BDL	BDL	0.17	BDL	BDL	BDL	0.01
CN (cyanide)	mg/L	*Health*	≤ 0.20	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ni (nickel)	mg/L	*Health*	≤ 0.07	BDL	BDL	BDL	BDL	0.98	BDL	BDL	BDL	0.02	0.25	BDL	BDL	BDL	BDL

Cells highlighted are in exceedance of SANS 241:2015 Drinking Water Limits

xi) Hydrology, aquatic ecology and wetlands

A Watercourse Verification was prepared by Scientific Aquatic Services (SAS) (Appendix 13). The proposed project is situated in the C21D quaternary catchment in the Upper Vaal Water Management Area (WMA), the Highveld ecoregion, and the Blesbokspruit (C21D-01267) / unnamed river (C21D-01334) sub-quaternary catchment. The study area is located within a sub-WMA which is not considered important for achieving biodiversity targets for river ecosystems and fish species. The application area and surrounds are situated within the Eastern Karst Belt National Strategic Water Source Area (SWSA) (SAS, 2022).

No rivers, wetlands or freshwater ecosystems were identified within the study area. According to the 2018 National Biodiversity Assessment (NBA) database, a depression wetland is situated approximately 500 m north-northwest from the edge of the proposed western TSF site and an unchannelled valley-bottom wetland is situated approximately 500 m to the north of the proposed northern TSF site (Figure 22). A hillslope wetland was identified by the specialist which is situated 500 m south-west of the proposed western TSF site (Figure 23). The hillslope wetland is highly disturbed and greatly impacted by sewage discharge. The depression wetland, unchanneled valley bottom wetland, and the hillslope wetland all occur within the 500 m regulated zone (GN509 of the NWA, Act No 36 of 1998) of the study area.

The closest river, the Blesbokspruit, is located approximately 1.4 km east of the study area. The Cowles Dam lies approximately 1.5 km south and the Alexander Dam lies approximately 3 km south-west of the site. According to the Gauteng C-Plan, buffers / regulated areas associated with a non-perennial river and the aforementioned depression wetland intersect with the study area (Figure 24). The proposed infrastructure is not located within or near the 1:50 and 1:100 year floodline (Figure 25).

Localised ponding of water has been noted at the proposed western expansion site due to mine-related excavations and trenches; however, this does not indicate the presence of watercourses as these areas do not possess / display a vegetative wet response.

The National Web-based Screening Tool deemed the area as having a *very high* aquatic biodiversity sensitivity due to the study area and surrounds being located within the Eastern Karst Belt National SWSA (for groundwater) and its proximity to wetlands. The specialist confirmed the absence of freshwater ecosystems within the study area.

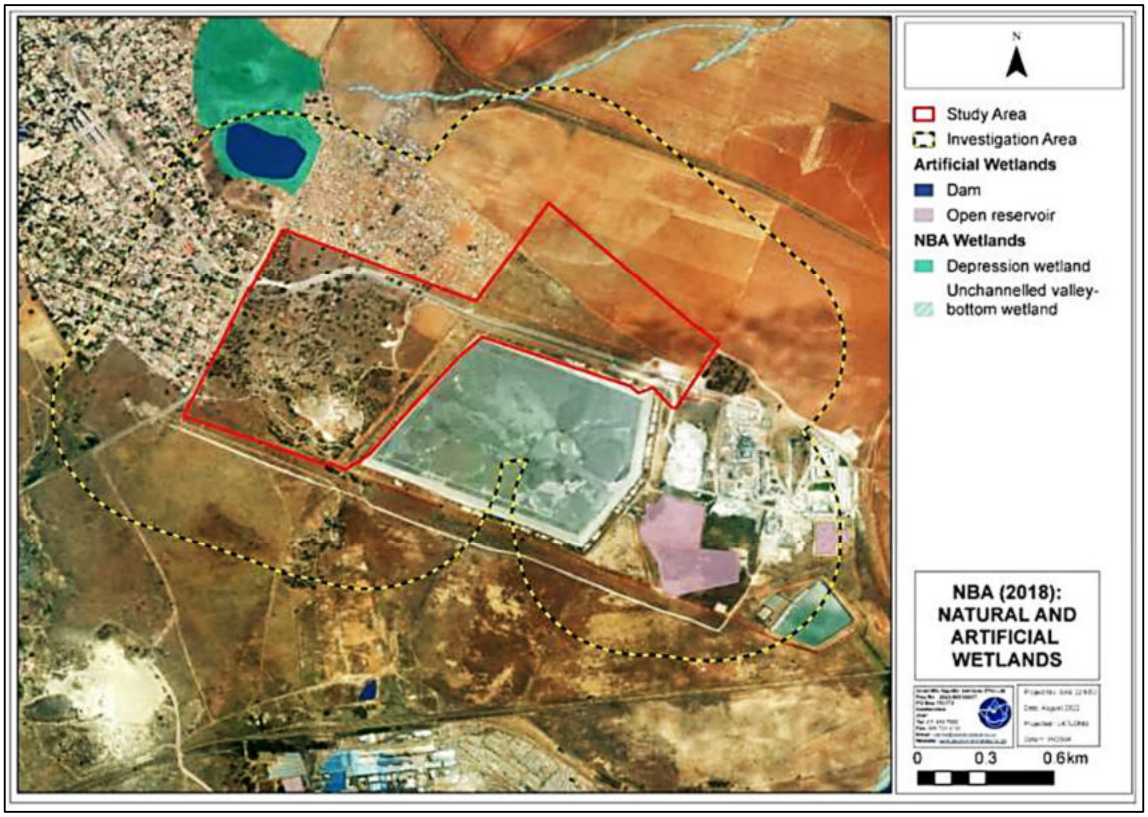

Figure 22. Natural and artificial wetlands associated within the 500 m of the study area according to the 2018 NBA database (SAS, 2018)

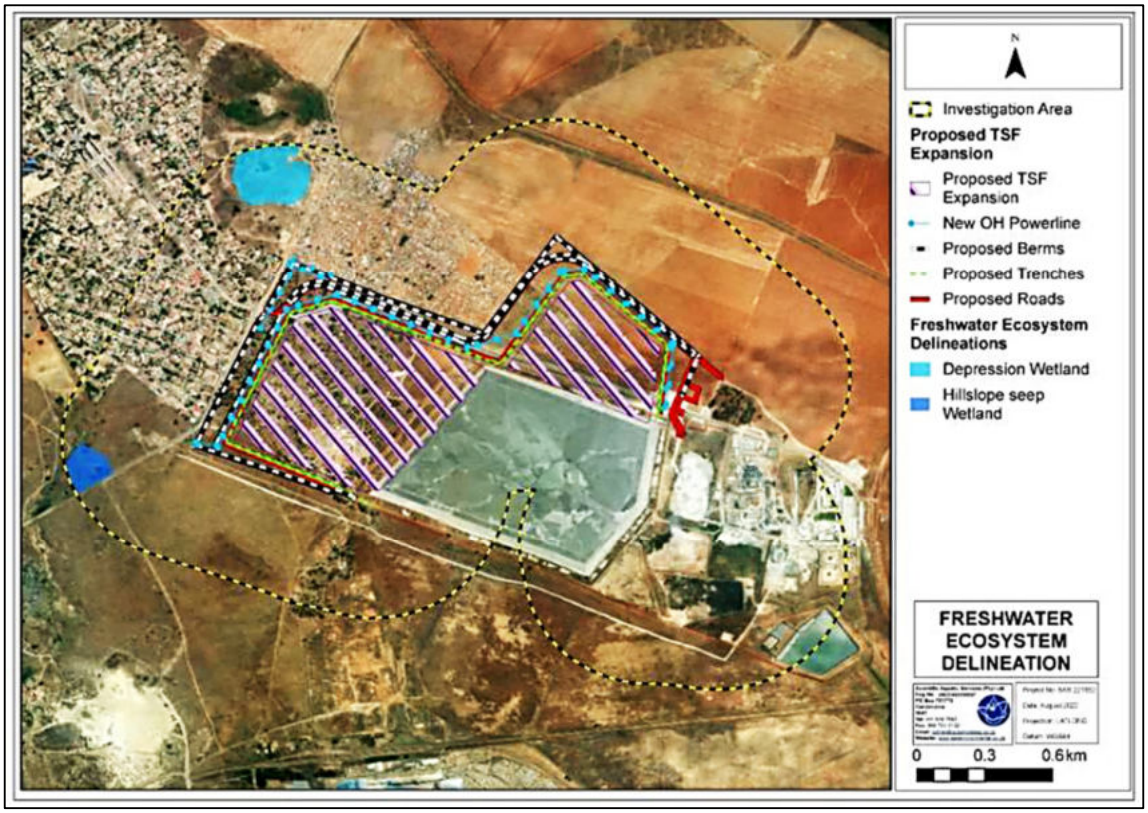

Figure 23. Identified watercourses within 500 m of the study area (SAS, 2022)

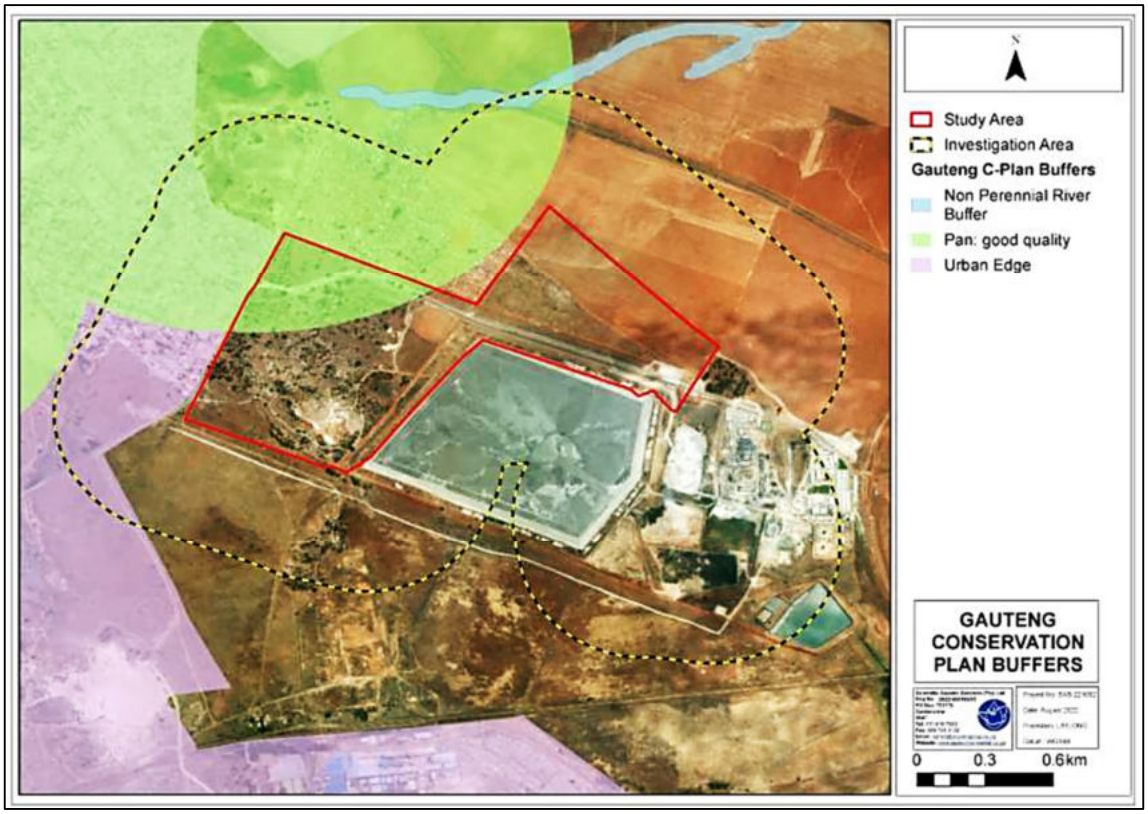

Figure 24. Conservation buffers associated with the study area according to the Gauteng C-Plan of 2011 (SAS, 2022)

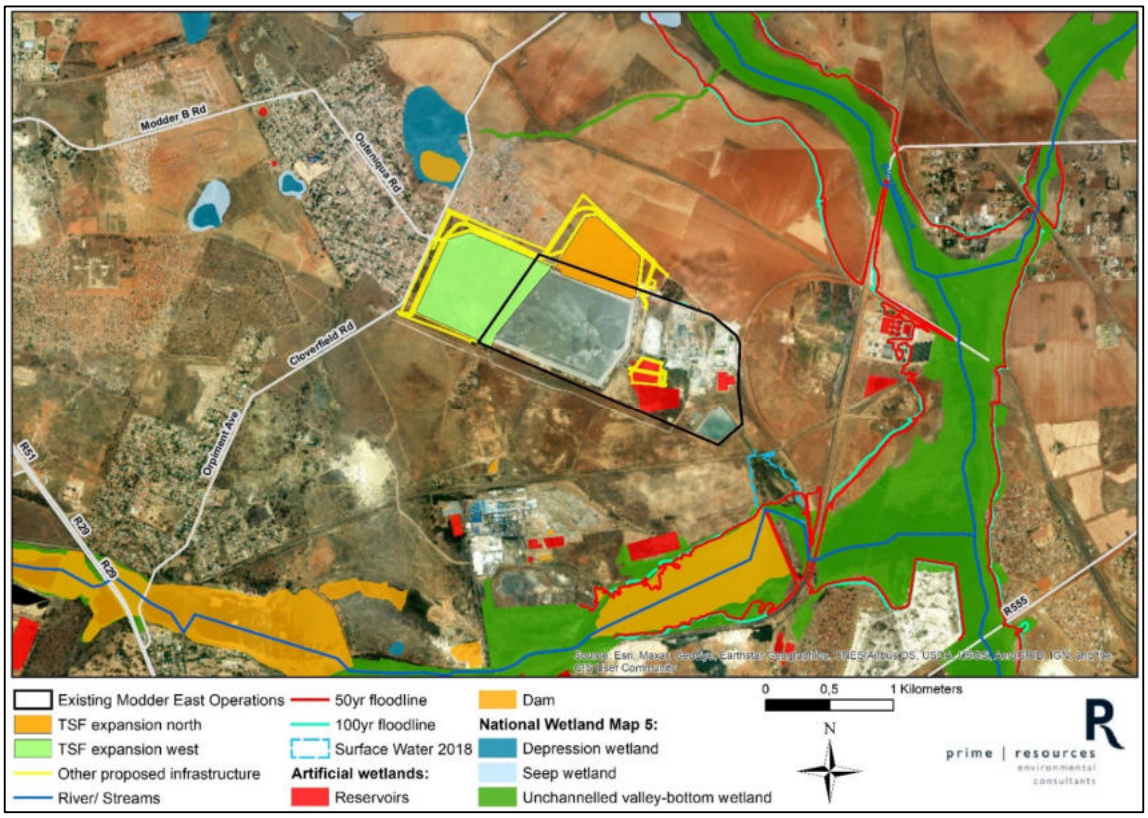

Figure 25. The 1:50 and 1:100 year floodlines in relation to the proposed and existing infrastructure at NKGM

xii) Terrestrial ecology

A terrestrial biodiversity study was undertaken by Scientific Terrestrial Services (STS) (Appendix 14). The study area falls within the Grassland Biome and the Mesic Highveld Grassland Bioregion. The dominant vegetation unit is the Soweto Highland Grassland (Figure 26), which is classified as Vulnerable (VU) in terms of Section 52 of NEM:BA. The Soweto Highland Grassland is characterised by gently to moderately undulating landscapes on the Highveld plateau and supports important taxa such as but not limited to:

- Herbs: *Hermannia depressa*
- Grasses: *Andropogon appendiculatus, Brachiaria serrata, Cymbopogon pospischilii, Cynodon dactylon, Elionurus muticus, Eragrostis capensis, E. chloromelas, E. curvula, E. plana, E. planiculmis, E. racemosa, Heteropogon contortus, Hyparrhenia hirta, Setaria nigrirostris,* and *S. sphacelata, Themeda triandra.* (Mucina & Rutherford, 2006).

According to the Gauteng C-Plan (2020), the north-western corner of the proposed western TSF site is situated within both a Critical Biodiversity Area (CBA) and an Ecological Support Area (ESA). The south-western corner of the proposed western TSF site also occurs within an ESA. The presence of primary vegetation could not be confirmed by the specialist; therefore, the CBA is also not confirmed. The ESA is associated with a pan located to the north of the application area. Due to the heavily degraded nature and historical transformation at the ESA, the area does not contribute to any natural ecological processes and the presence of an ESA could not be confirmed. The proposed northern TSF site does not occur within a CBA or an ESA (Figure 27). The proposed project does not occur within an Important Bird Area (IBA). The closest IBA, the Blesbokspruit IBA, is located 2 km to the south-east of the application area. The Blesbokspruit Wetland Reserve lies approximately 4.5 km southeast of the study area and the Marievale Nature Reserve is located approximately 7 to 10 km south-southeast (Figure 28 and Figure 29).

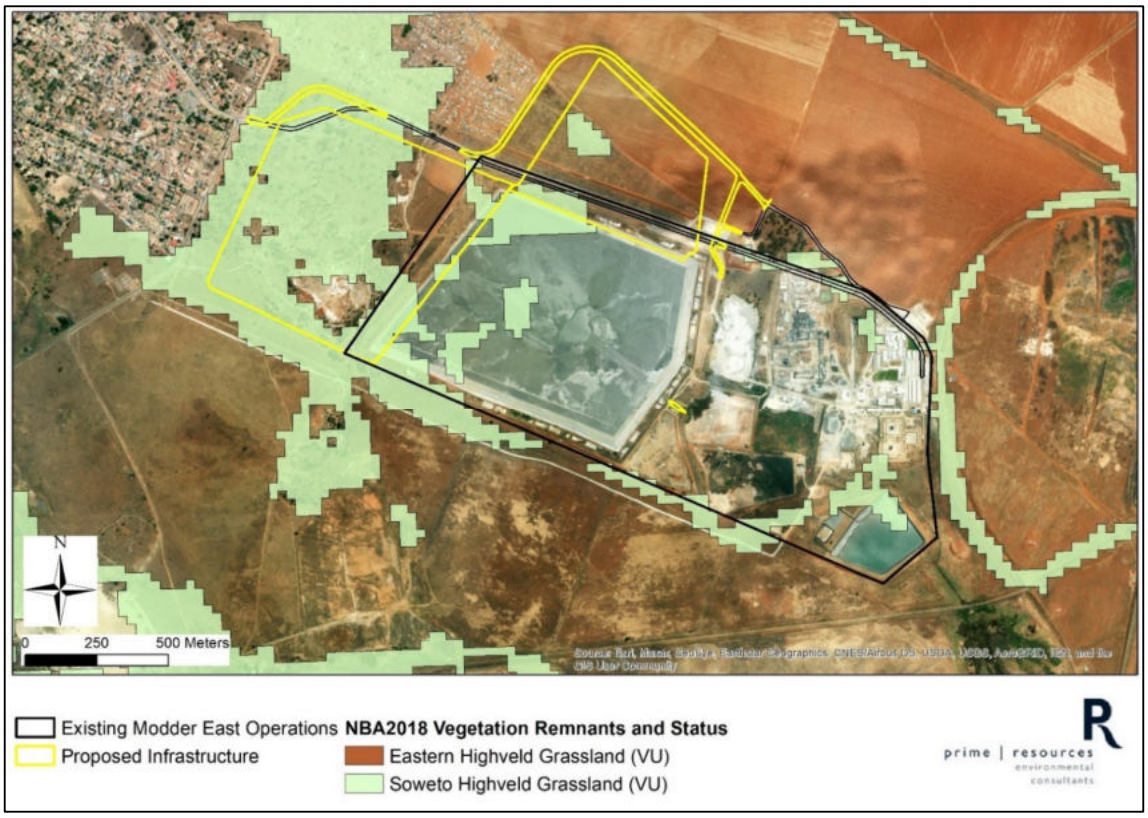

Figure 26. Status and current extent of the prevailing vegetation types

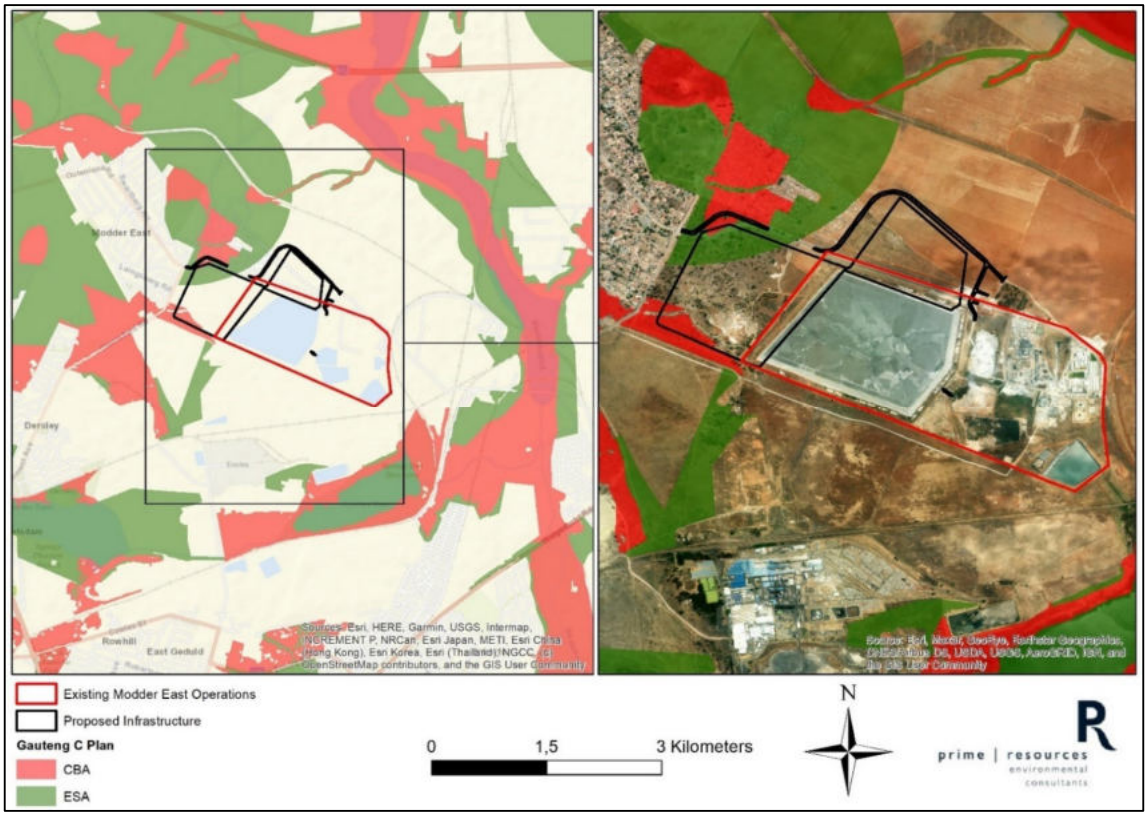

Figure 27. Gauteng C-Plan of the application area

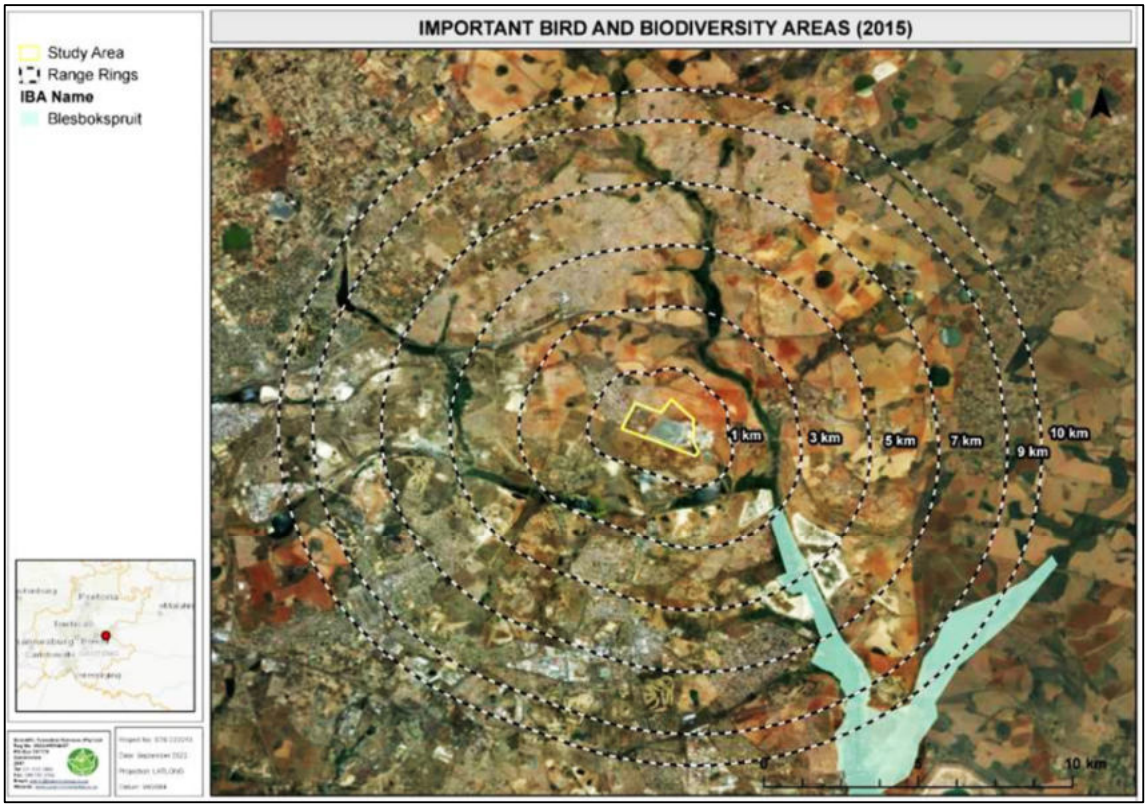

Figure 28. Important bird and biodiversity areas associated with the Study Area (STS, 2022)

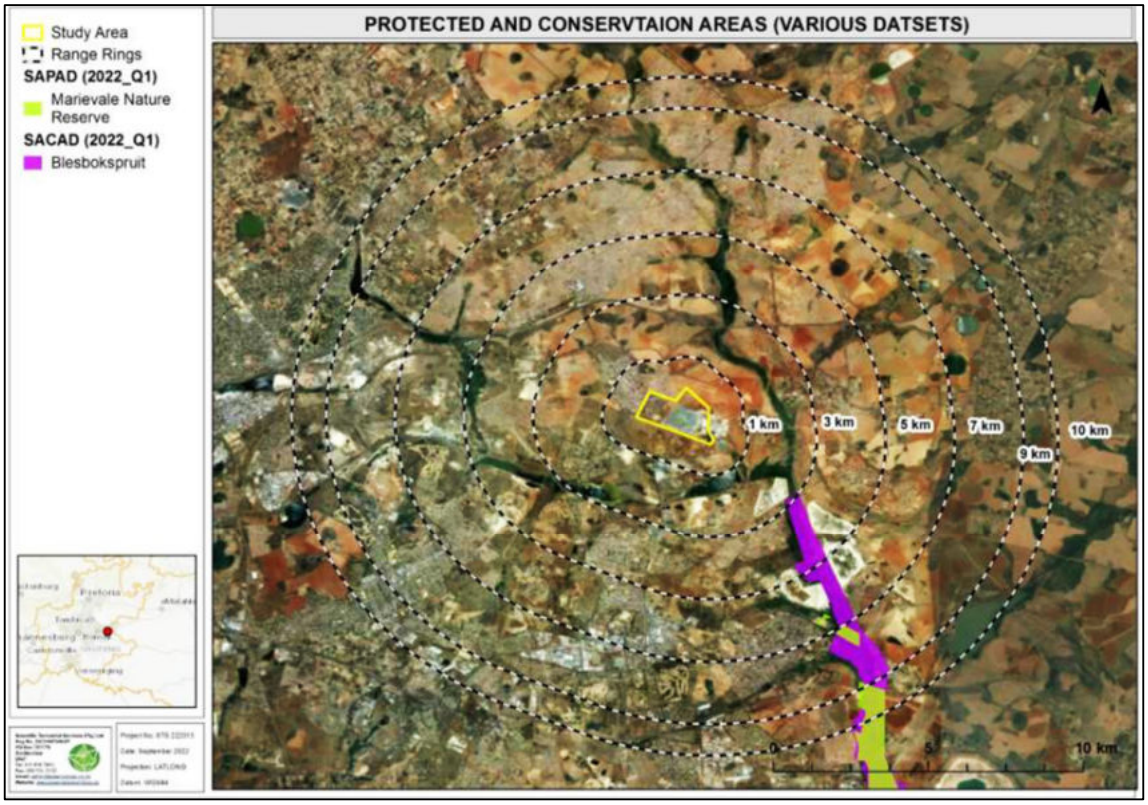

Figure 29. Protected and conservation areas associated with the application area (STS, 2022)

According to the National Protected Area Expansion Strategy (NPAES, 2018), the north-western and south-western sections of the proposed western TSF site are located within a Priority Focus Area. Due to the degraded nature of these areas, they are not considered optimal areas to be prioritised or protected (Figure 30).

According to the Mining and Biodiversity Guidelines of 2012, the majority of the proposed western TSF site is located within Class D (moderate biodiversity importance, moderate risk for mining), with small sections located within Class B (highest biodiversity importance, high risk for mining) (Figure 31). Class B is triggered due to the area being associated with CBAs.

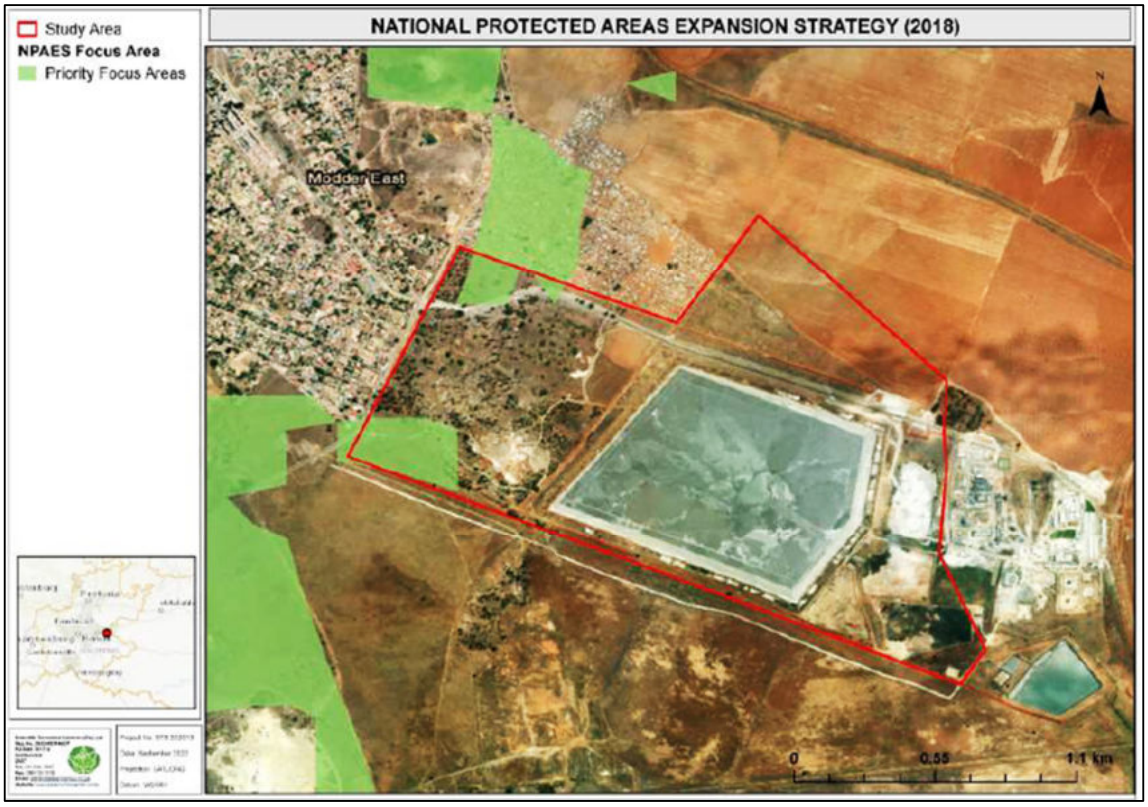

Figure 30. Protected areas associated with the Study Area (STS, 2022)

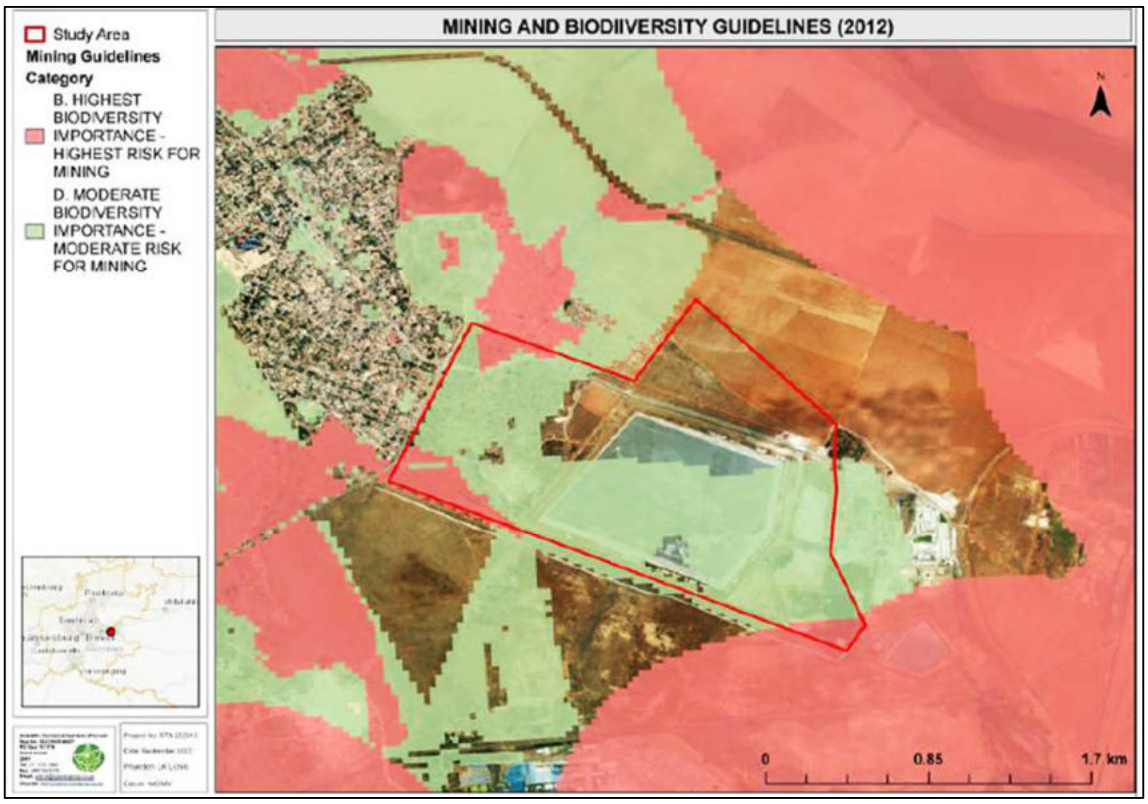

Figure 31. Mining and biodiversity guidelines associated with the Study Area (STS, 2022)

Habitats

The specialist identified two broad habitats and two sub-units (Figure 32):

Secondary Grasslands habitat:

This habitat is characterised by vegetation which has returned to some semblance of natural habitat, but the floral communities have significantly shifted from the Soweto Grassland Highveld reference state. Several Alien Invasive Plant (AIP) species are present in this habitat. The Secondary Grasslands habitat does not contribute to any natural ecological processes and is not associated with primary grasslands. There are sections of the western area dominated by stands of AIP trees that more closely resemble a tall, closed woodland vegetation, and included species such as *Acacia baileyana, Eucalyptus camaldulensis* and *Lantana camara*. However, sections of this habitat conform to the definition of indigenous vegetation, although in a degraded condition. The sub-units of this habitat are:

- Degraded Grassland comprising of scattered areas with a grassland structure, but the floral communities are degraded and are of moderately low indigenous species richness. Indigenous species are largely absent and habitat integrity is entirely diminished (both western and northern expansion TSF sites).
- Modified Grassland comprising of sections with a high abundance of AIPs (western expansion TSF site).

Transformed habitat:

This habitat is characterised by vegetation clearance (partial or complete) and the transformation of natural vegetation. The sub-units of this habitat are:

- Agricultural fields dominated by monoculture floral communities (northern expansion site).
- Excavations and waste dumps dominated by homogenous stands of AIP species (western expansion site).

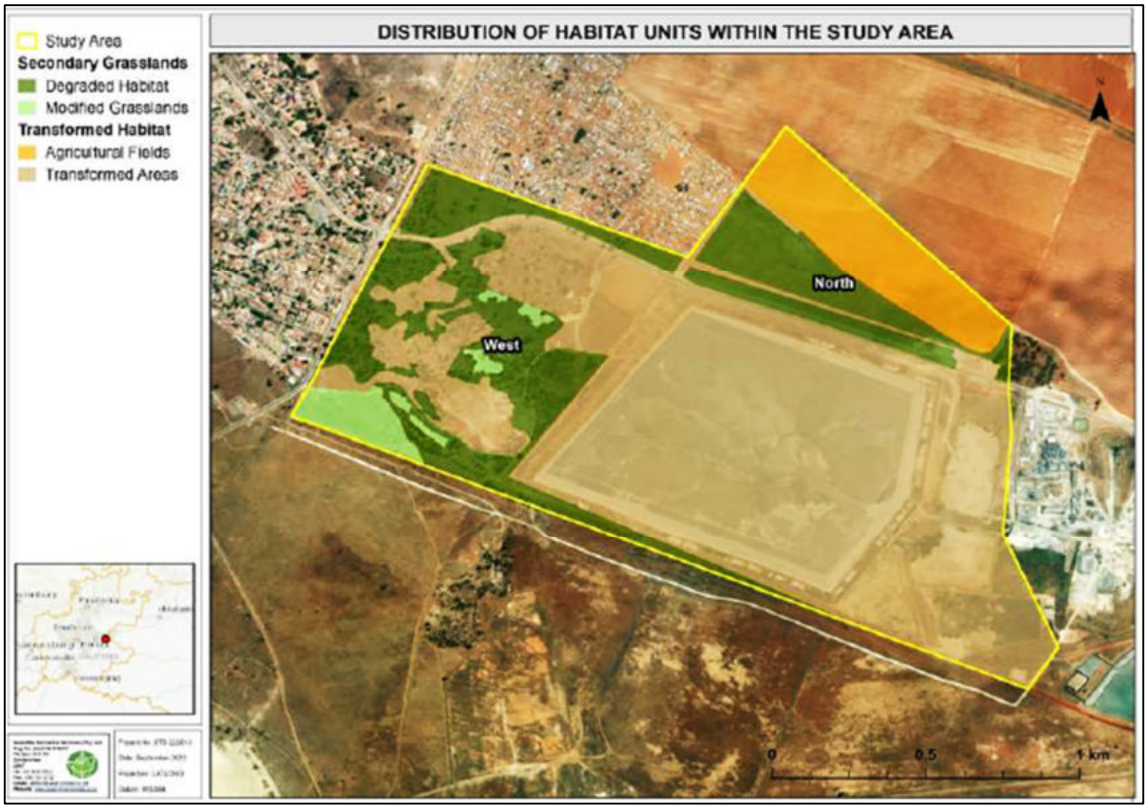

Figure 32. Distribution of habitat units and sub-Units located within the Study Area (STS, 2022)

The NEMA Screening Report highlighted the proposed TSF expansion sites as having a *medium plant and animal sensitivity*. The Screening Report further highlighted the entire area as having a *very high terrestrial biodiversity*

sensitivity. STS (2022) (Appendix 14) confirmed a *low plant sensitivity* for the northern TSF site, and *low* (modified grassland) to *moderately low sensitivity* (degraded grassland) for the western site. Due to the extent of transformation within the proposed sites, the lack of significant biodiversity features and the decreased species composition representative of the Soweto Highland Grassland, the *very high terrestrial biodiversity sensitivity* could not be confirmed and is therefore disputed by the specialist.

Flora

Medicinal and Alien Invasive Plant Species

The application area has a high diversity of AIPs and most of the species observed on site are listed category invaders for which control is required. The specialist recorded 11 AIP species listed under NEM:BA Category 1b and 1AIP species listed under NEM:BA Category 3 invader. An additional 15 AIP species, currently not listed, are considered problem plants.

The application area has a high diversity of medicinal plant species. Although these species have traditional medicinal value, many of them are regarded as alien invasive weeds. The specialist recorded 11 medicinal species of which 3 are considered non-listed problematic plants and one is an Orange Listed plant (*Hypoxis hemerocallidea*). These medicinal species are widespread and not confined to the study area; nor are they unique within the region. There was no evidence at the site survey that these medicinal species are currently being harvested and utilised in the area.

Red and Orange Listed Species

The CBA, which is confined to portions of the proposed western TSF site (Figure 14), is considered an Important Area for Orange Listed (OL) plant habitat and primary vegetation. The presence of primary vegetation could not be confirmed by the specialist at the proposed western TSF site and is therefore disputed. One Species of Conservation Concern (SCC) was positively identified in large numbers at the proposed western TSF site, an OL plant species (*Hypoxis hemerocallidea*). This species is classified as Least Concern (LC) but has a declining population status.

Fauna

Mammals

Several smaller-bodied mammal species or signs thereof were observed by the specialist during the field assessment. These mammals are common and expected to occur in the study area. The following species were positively identified, or signs of their presence were noted at the Secondary Grassland:

- *Lepus saxatilis* (Scrub Hare, LC)
- *Sylvicapra grimmia* (Common Duiker, LC)
- *Hystrix africaeaustralis* (Cape Porcupine, LC)
- *Genetta genetta* (Common Genet, LC).

Fragmentation, land size and location have resulted in the inability of the study area to support mammal diversity.

Avifauna

Avifauna diversity at the study area is relatively low and only a few common species were observed. This is attributed to the high abundance of AIPs and the largely modified habitat types. Due to the availability of food during the crop growing period, the agricultural fields at the proposed northern TSF site attract a variety of common avifauna.

Fragmentation, land size and location have resulted in the inability of the study area to support increased avifauna diversity. The specialist concluded that the occurrence of the SCC as per the screening tool is unlikely due to the disturbed habitat and adjacent anthropogenic activities which will likely deter any such species from the study.

Amphibians

No amphibians were observed by the specialist during the field assessment. No rivers, wetlands or freshwater ecosystems were identified within the study area, considerably limiting amphibian occurrences as most species require a water source for breeding. Due to the lack of water resources, amphibian diversity is considered to be low. Species may enter the study area for foraging purposes and / or use temporary ponds resulting from heavy rainfall events.

Reptiles

No reptile species or signs thereof were observed during the field assessment; however, this could be due to their inherently secretive nature. The study area has the potential to host 5 SCC (Least Concern). As reptiles are inherently adaptable and capable of living in altered habitats, it is expected that they will occur in the study area.

Invertebrates (Insects and Arachnids)

Invertebrate diversity was observed to be high in the Secondary Grasslands habitat and comprised of various spiders, grasshoppers, bugs, butterflies and beetles. The specialist identified 3 potential SCC that may occur within the study area due to potentially suitable habitats:

- *Lepidochrysops procera* (Grassveld Nimble Blue, VU)
- *Opistophthalmus pugnax* (Pugnacious Burrowing Scorpion, TOPS, Protected)
- *Harpactira hamiltoni* (Highveld Baboon Spider, TOPS, Protected)

Red and Orange Listed Species

No faunal SCC were observed during the field assessment; however, a site assessment undertaken indicated that the study area may have suitable habitat for SCC (as listed above). The online screening tool indicates that the study area has a "medium" sensitivity for the animal species theme due to the possible occurrence of the following species: *Clonia uvarovi* (Uvarov's Clonia Bush cricket; Vulnerable), *Aloeides dentatis* (Roodepoort Copper; Endangered), *Chrysospalax villosus* (Rough-haired Golden Mole; Vulnerable), *Crocidura maquassiensis* (Maquasie Musk Shrew; Least Concern), *Dasymys robertsii* (Robert's Marsh Rat; Vulnerable), *Ourebia ourebi* (Oribi; Endangered), *Hydrictis maculicollis* (Spotted Necked Otter; Vulnerable) and *Tyto capensis* (African Grass Owl, Vulnerable). The specialist concluded that the occurrence of these species is unlikely due to the absence of suitable habitats.

xiii) Socio-economic

A Baseline Socio-Economic assessment was undertaken by Prime Resources (Appendix 15).

Regional context

The project is located in Region D of the City of Ekurhuleni (CoE). The CoE has a population of approximately 3.78 million people, which makes up approximately a quarter of the population of Gauteng, with a population density of 1 707 people per km^2. It is estimated that 68% of the population of CoE live in high-density communities. The municipality has an average annual population growth rate of 2.47%, and it is expected there will be over 4 million residents by 2030 and 8.8 million residents by 2050. This population growth can be attributed to in-migration in search of employment opportunities, as well as other pull factors including health, medical services, education, social security, and a general trend of urbanisation.

The finance, insurance and business services sector makes the largest contribution to the economy of CoE at 24%, followed by Government (16.9%), wholesale and retail trade (15.2%) and transport, storage and communications (11.4%). Unemployment in the CoE is estimated to be 31.8%, which is slightly higher than the average for Gauteng,

and higher than the national average which is 27.1%. Unemployment remains a significant challenge, with unemployment rates having increased from 28.3% in 2015 to a peak of 33.6% in 2017.

In total, just under half (47%) of the population of CoE fall into the category of being "unemployed" and "not economically active" (which includes those under 18 and over 65). In 2018, 1.71 million people were living in poverty, using the upper poverty line definition, across CoE; this is 15.49% higher than the 1.48 million in 2008. Half of all households in the CoE earn an annual income below R29 400. Many households (18%) have no income at all. Poverty levels have implications for people's health, particularly in the case of vulnerable groups like the elderly and children, and mental wellbeing. High poverty levels are also often associated with increased crime levels and social conflict. These statistics indicate significant economic challenges within the municipality.

There are an estimated 1.3 million households in the CoE (Community Survey, 2016). Most houses are formal houses and apartments (67%), but almost one fifth (18.7%) are informal dwellings or shacks. Population growth, exacerbated by in-migration into the area, has resulted in large numbers of informal settlements in the CoE. The provision of water, electricity and sanitation in informal settlements remains a challenge and there is a significant service delivery backlog.

Local context

The NKGM operations falls into Ward 72 of the CoE. The surrounding communities are characterised by a combination of formal and informal housing, industries, farming and smallholdings (Figure 33). NKGM is located immediately adjacent and to the south-east of the suburbs of Modder East and Eastvale. The informal settlement of Skoonplaas is located immediately north-west of the existing TSF. The area to the north of the existing TSF is agricultural land and the agricultural smallholdings of Welgedacht AH are located 2.5 km to the east. Approximately 3 km to the south-east of Modder East are the high-density areas of Slovo Park, Gugulethu and Everest. The proposed Calodex Solar Park will be situated directly to the south of the existing NKGM footprint. Below this is a railway line and then an industrial area. The industrial areas located directly to the south of the existing TSF include Enstra Paper Mill (previously the Sappi Paper Mill) and a warehousing site approximately 1.5 km from the TSF. The historical Geduld Proprietary Mine and associated infrastructure is 2.5 km to the south and Impala Refining Services is 3 km away. Beyond this lies the town of Springs in the south, with the suburbs of Bakerton, Petersfield, Rowhill and East Geduld approximately 4 km from the existing TSF. Approximately 3.5 km to the south-west of the TSF is Alexander Dam, and the upmarket suburb of Presidents Dam (4.5 km from the existing TSF). The suburb of Dersely is 2 km to the south-west. The informal settlement of Lindelani is approximately 3 km to the west of the TSF and the recently built Alliance low-cost housing suburb is 3 km to the north-west, adjacent to Eastvale. Daveyton is located approximately 5 km to the north-west on the other side of the N12 highway.

The population density for Ward 72 is 650 people per km^2, which is significantly lower than that of the CoE as a whole (1 707 people per km^2). 69% of the people are aged 18 to 64 and there are slightly more males (53%) than females. The RAHIA (Infotox, 2022) calculated the population of Ward 72 in 2021 to be 33 299 people.

Census data from 2011 indicates that unemployment in Ward 72 is 16%. As with the CoE, there is a similar concerning proportion of the population over the age of 15 that are either unemployed or not economically active (46% for Ward 72), and only 51% of people over the age of 15 are employed. Most employed people work in the formal sector (77%). The median annual household income is R29 400 (therefore, half of all households in the ward earn less than this per month) which is the same for the CoE.

English and Afrikaans are the most prevalent home languages at 20% each, followed by isiZulu (16%) and isiXhosa (11%). According to census data, 77.9% of individuals aged 20 or older have completed Grade 9 or higher, while 4% have had no schooling.

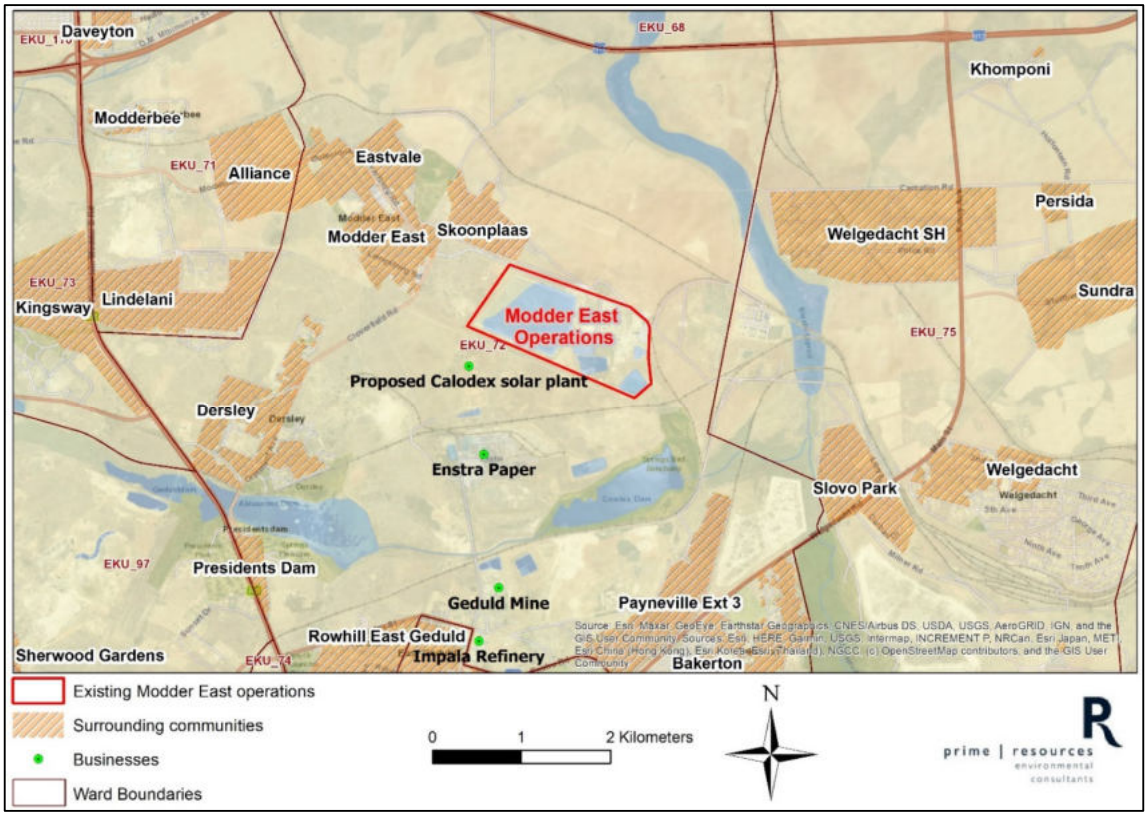

Figure 33. Surrounding receptor communities, businesses, and Wards near NKGM

Over half of the households (51.1%) in Ward 72 are informal dwellings. This is significantly higher than the CoE as a whole at 18.7%. Almost half of the households in the ward do not have access to basic services with only 45% having electricity, 47.8% having flush toilets, and 62.3% having regular refuse collection. Most houses have access to some municipal water, and only a small percentage (2%) rely on boreholes.

This disparity can be seen in the areas directly adjacent to NKGM. Skoonplaas is a high-density informal settlement while Modder East, Eastvale and Dersley are medium to low-density suburbs.

Socio-economic profile of the project area

For the purpose of the socio-economic baseline investigation, a potential zone of influence was determined to include the following communities located adjacent to the existing Modder East TSF (Figure 34), within a 2 km radius of the proposed new TSF expansion footprint:

- Skoonplaas informal settlement
- Suburbs of Modder East and Eastvale
- Suburb of Dersley
- Nearby businesses including Enstra Paper Mill, and the proposed Calodex Solar Park immediately to the south.

Skoonplaas is an informal settlement situated immediately to the north-west of the existing TSF on an area within the mine's surface lease area (RE of the Farm Cloverfield 75 IR). The mine leases this land from the CoE. Construction at NKGM commenced in 2002. Prior to construction of NKGM, a small existing settlement consisting of approximately 24 households was situated within the surface lease area. According to the original EIA for Modder East operations, this was the original Skoonplaas, reportedly residing in abandoned farmworker residences from historical farming and mining in the area. The size and extent of Skoonplaas increased dramatically in 2015 and it is estimated that there are presently 3 000 to 4 000 households currently living in Skoonplaas (Planact, 2021). The total population

of Skoonplaas is reported to be between 10 000 and 15 000 people. Households in the south-eastern part of Skoonplaas are currently approximately 160 m from the northern corner of the existing TSF.

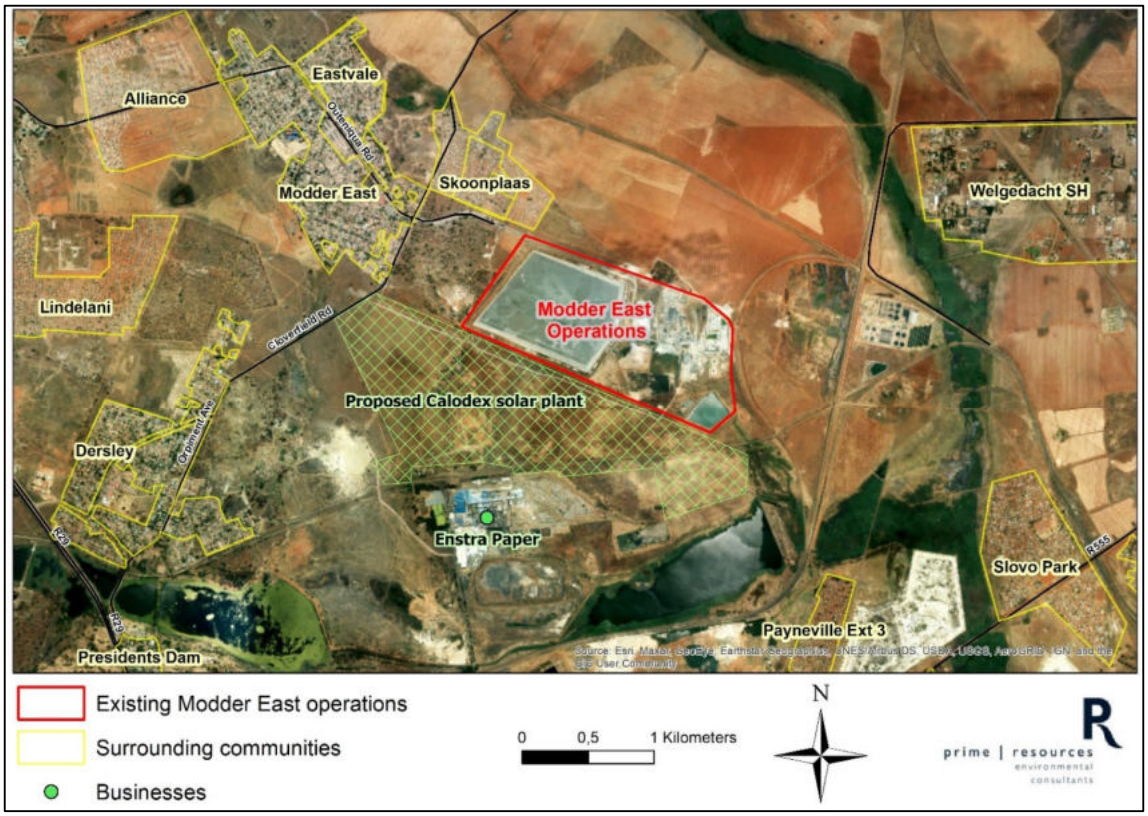

Figure 34. Residential areas adjacent to the NKGM operations

The residents of Skoonplaas are provided with basic services by the CoE including chemical toilets, refuse collection and municipal water through communal taps and taps within yards. Skoonplaas has no electricity supply. Refer to Figure 35 and Figure 36 and showing drone footage of dwellings in Skoonplaas and photos of typical houses along the boundary of Skoonplaas.

Modder East, Dersley and Eastvale are located in Ward 72 and can be described as medium to low-density, middle-income suburbs. Houses are generally well looked after, with well-maintained gardens and significant security. It can thus be inferred that most private resident owners are medium to high-income earners.

Nearby businesses include Enstra Paper Mill, Impala Refining Services, the approved Calodex Solar Park immediately south of the NKGM operations, and small businesses located in the residential areas around Modder East and Derlsey. In Eastvale there are small businesses, take away and food stores, guest houses, junior schools, and travel agencies. In Dersley there are several small businesses such as nursery schools, guest houses, gyms, tyre and vehicle services, and building materials stores.

Image 1. Skoonplaas dwellings (Planact, 2021)

Image 2. Skoonplaas dwellings (Planact, 2021)

Figure 35. Drone footage of Skoonplaas dwellings (Plantact, 2021)

Photo 1. Houses on the north-eastern edge of Skoonplaas

Photo 2. Houses on the southern edge of Skoonplaas

Figure 36. Photos of Skoonplaas dwellings

b) Description of the current land uses

The existing mine operation lies within a mining belt that runs between Springs and Nigel. The landscape surrounding the application area consists largely of suburban residential areas (formal and informal), agricultural fields and mining. According to the CoE RSDF (2015), the application area falls within an area earmarked for mining (Figure 37). The land uses were confirmed using Google Earth satellite imagery and ground-truthed site visits undertaken in 2022. The proposed expansion project and the Skoonplaas informal settlement fall within NKGM's surface lease area. The entirety of the lease area is currently zoned for mining. The land surrounding the existing mine is zoned for urban development, industrial and municipal and social infrastructure. A change in land use will not be required for the TSF expansion.

Surrounding land uses are listed below:

- North – The mine is bounded by modified grassland and agricultural land mainly used for the cultivation of soya beans and maize
- East – Railway line and the residential area of Welgedacht
- South – Proposed Calodex Solar Plant, Grootvlei Mine, Enstra Paper Mill and Impala Platinum refinery
- West – Residential areas of Modder East, Dersley, Eastvale and the informal settlement of Skoonplaas.

The land uses where the proposed activities are to occur are listed below:

- Northern TSF expansion – The land use is dominated by modified grassland and agricultural land mainly used for the cultivation of soya beans and maize. Refer to photos 1 to 3 in Figure 38.
- Western TSF expansion – This area is currently vacant land within the mine's surface lease area. There is evidence of historical mining activities (ruins of old mine buildings, excavations and waste rock dumps) and grasslands (modified and degraded), with and stands of invasive trees (*Eucalyptus camaldulensis*). Refer to photos 1 and 2 in Figure 39. There is a soccer field located in this area that is used by the residents of the surrounding suburbs.
- There are residential areas in close proximity to the expansion areas. However, there are no residential areas or residences located within the proposed expansion footprints, and therefore no relocation or resettlement is expected.

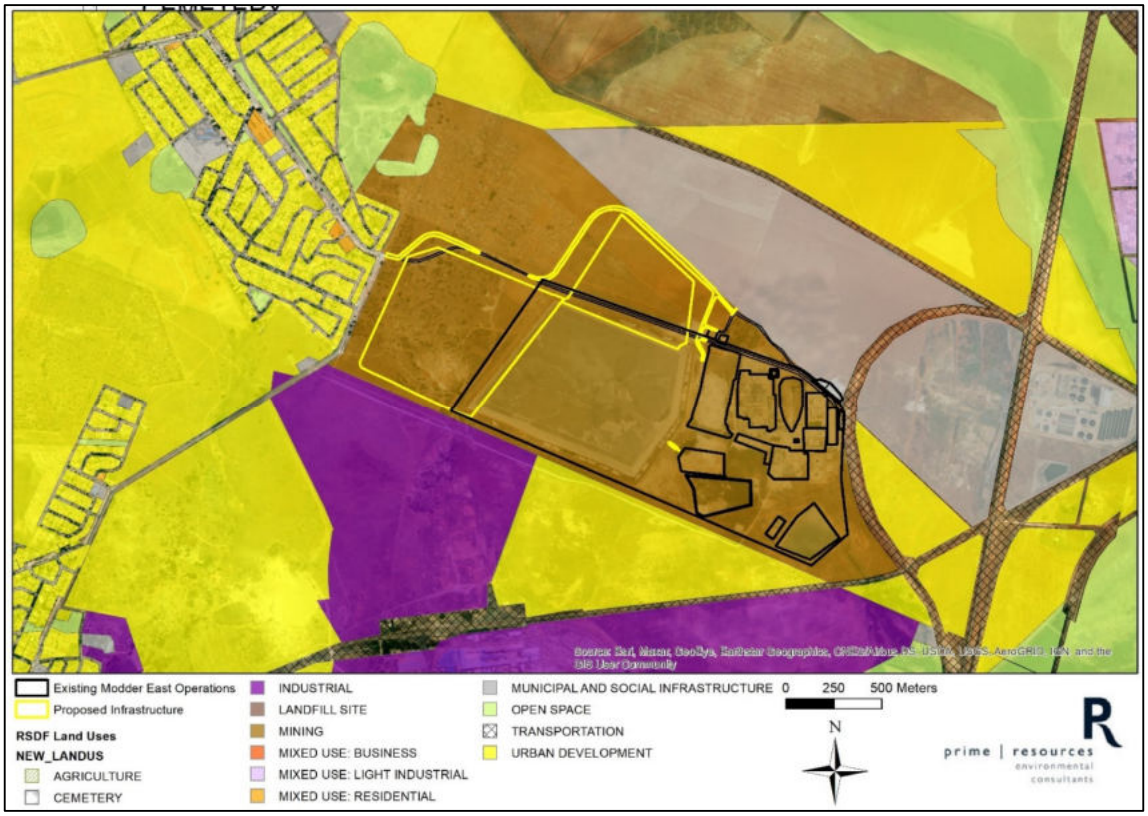

Figure 37. 2015 CoE RSDF map

Photo 1. Maize fields

Photo 2. Soya fields

Photo 3. Modified grasslands

Figure 38. Photos of the current land uses at the proposed northern TSF site

Photo 1. Remains of old mining infrastructure

Photo 2. Modified and degraded grasslands

Figure 39. Photos of the current land uses at the proposed western TSF site

i) Description of specific environmental features and infrastructure on the site

Specific environmental features occurring within or in close proximity to the proposed project area are summarised below:

- One SCC (*Hypoxis hemerocallidea*) was positively identified in large numbers at the western TSF expansion site. This species is classified as Least Concern (LC) but has a declining population status.
- The study area may have suitable habitat for three faunal SCC. These faunal species include *Lepidochrysops procera* (Grassveld Nimble Blue, VU), *Opistophthalmus pugnax* (Pugnacious Burrowing Scorpion, TOPS, Protected) and *Harpactira hamiltoni* (Highveld Baboon Spider, TOPS, Protected).
- There are no watercourses or wetlands located within the proposed TSF expansion sites. A depression wetland, unchanneled valley-bottom wetland, and a hillslope wetland all occur within the 500 m regulated zone. The Blesbokspruit wetland is located in the far south-eastern portion of RE Cloverfield 75 IR.
- Although not located within the proposed development footprint, there is a cemetery located approximately 150 m from the northern TSF expansion on RE Cloverfield 75 IR.
- The application area is underlain by the Malmani Dolomite. Dolomites are prone to sinkhole formation. Dolomitic aquifers are recognised to be of concern to mining activities due to the potential large groundwater inflow volumes in areas where karstic dolomite is intersected.
- The dominant vegetation unit of the proposed western TSF site is the Soweto Highland Grassland, which is classified as Vulnerable (VU) in terms of Section 52 of NEM:BA. Although the presence of primary vegetation could not be confirmed due to the modified and degraded nature of the grasslands, sections of the proposed western expansion site have not undergone significant vegetation clearance within the past 10 years.
- The north-western corner of the western TSF expansion site is situated within both a Critical Biodiversity Area (CBA) and an Ecological Support Area (ESA). The south-western corner of the western TSF expansion site occurs within an ESA. The northern TSF expansion site does not occur within a CBA or ESA.
- The area is located within the Highveld Priority Area for air quality and the overall ambient air quality surrounding the project area is generally poor.

A summary of the existing infrastructure on site can be seen in Figure 2.

ii) Environmental and current land use map (Show all environmental, and current land use features)

The proposed development footprint relative to the current land use is shown in Figure 40.

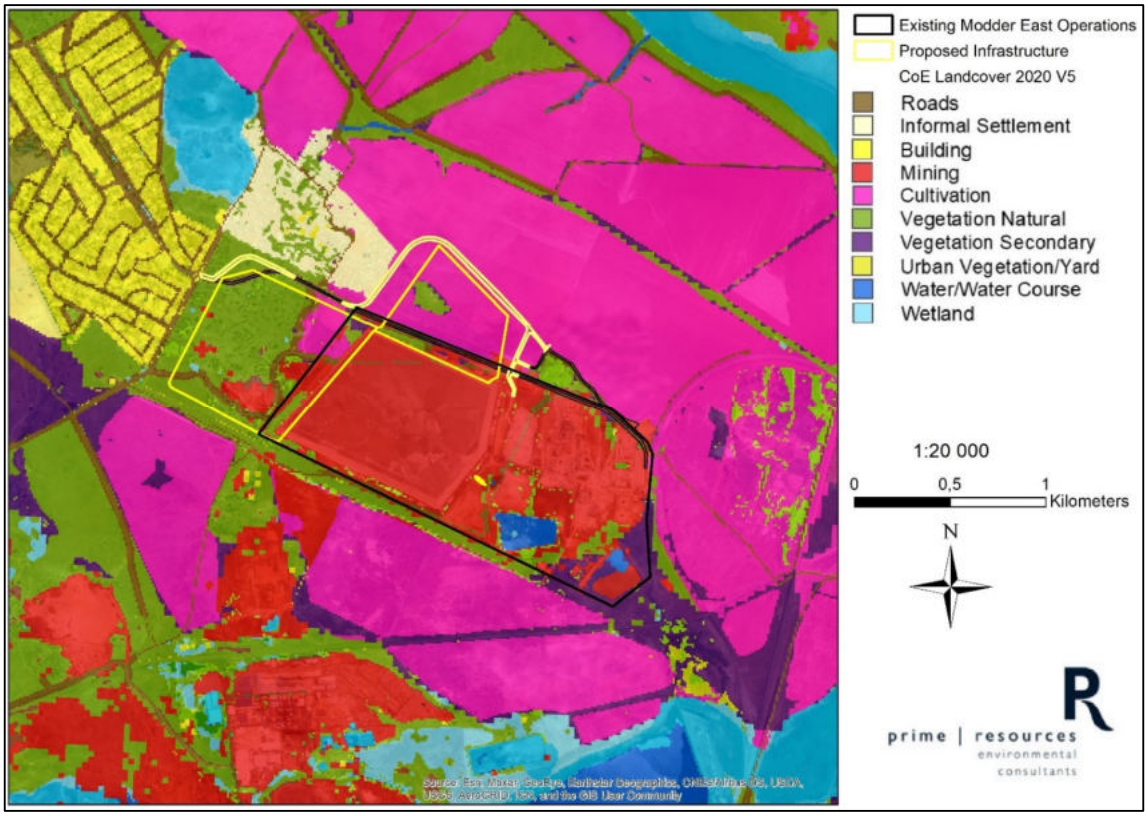

Figure 40. Land cover map of the application area (SANBI, 2014)

c) Impacts identified

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability and duration of the impacts)

The potential positive, negative and cumulative impacts of the proposed project will be assessed during the EIA phase. The key potential impacts are summarised below. From an initial high-level assessment, the impacts **prior** to mitigation and after the implementation of mitigation measures, along with the associated significance score (as per the method Section 10)c)i) are assessed in Table 16. The impacts have been updated after consultation with IAPs and after all specialist studies have been completed during the EIA phase.

Soil and land capability

The proposed development is not anticipated to cause any significant impacts on the western site as it is dominated by disturbed soils of the Witbank form. However, 4.73 ha of the northern site is characterised by soils with a high agricultural capability, and 16.43 ha of soils with moderate land capability (both of which are currently cultivated).

Potential soil impacts are listed below:

- Loss of land capability and agriculturally important soils due to the footprint and the permanent feature of the northern TSF expansion site.
- Potential increase in soil erosion and subsequent soil loss due to vegetation clearing.
- Soil compaction due to the movement of heavy machinery during earthworks. Soil compaction can lead to soil structure destruction, reduced soil aeration and reduced water infiltration rates.
- Soil contamination due to accidental spills or poor management of hydrocarbons from equipment and vehicles, spills from chemical ablution facilities, generation of domestic waste, polluted water from wash

bays and workshops, pollution from concrete mixing, and spills of hazardous chemicals. Consequences of soil contamination include soil sterilisation and a reduction in soil yield potential.

Hydrogeology

Potential hydrogeology impacts include:

- Groundwater contamination and change in groundwater chemistry / quality due to accidental spills or poor management of hydrocarbons from equipment and vehicles, spills form chemical ablution facilities, polluted water from wash bays and workshops, pollution from concrete mixing, and spills of hazardous chemicals.
- Groundwater / aquifer contamination due to potential seepage from the expanded TSF and RWD due to inappropriate liners or barrier systems.
- The project will result in an increase of impermeable surfaces, which will effectively result in a decrease in groundwater recharge.
- Deterioration of groundwater quality due to contaminated stormwater run-off and inadequate stormwater management.
- Contamination of groundwater from poor quality water utilised for dust suppression.
- Vegetation clearance may alter the underlying aquifer's vulnerability due to an increase in water infiltration and potential contaminants into the subsurface.

Air quality

The overall ambient air quality of the Springs area is generally of poor quality. Dust is likely to be generated during construction activities. During the operational stage, tailings will be incrementally deposited as a wet slurry on the expanded TSF footprint, and there is not expected to be significant dust and particulate matter emissions generated during the operational phase. Once wet deposition ceases during decommissioning, there is an increased likelihood of dust and particulate matter emissions from the TSF. However, the dry tailings slurry develops a thin "crust" as a result of salts in the tailings material, which reduces wind-borne dust generation.

Emissions from the expanded TSF will likely be transported towards the south-southwest (SSW), south (S) and south-southeast (SSE), and possibly towards the north-northeast (NNE), based on the dominant wind directions. The potential transport of emissions to the north-northeast may mean that dwellings in Skoonplaas could potentially be exposed to increased dust and emissions from the western TSF expansion during construction and decommissioning / closure.

The potential impact on the solar park is currently unknown and will be further investigated during the EIA phase, but it is expected that this will not be more significant than impacts from the existing TSF as the expansion sites are further away from the solar park. Residential areas to the SSW and SSE are > 5 km from the TSF expansion and are therefore not expected to be impacted.

Potential air quality impacts include:

- Dust and particulate emissions will be generated from construction-related activities, operation of mechanical equipment, vegetation clearance, stripping of topsoil, excavation / earthworks, materials handling, bulldozing, wind erosion of stockpiles, and entrainment of loose material at unpaved / exposed areas.
- The ambient air quality may potentially be altered due to gaseous emissions from heavy machinery and mechanical equipment.
- Dust and particulate matter generation may occur as a result of wind erosion off the TSF surface.

Hydrology

No rivers, wetlands or freshwater ecosystems were identified within the study area. The closest river, the Blesbokspruit, is located approximately 1.4 km east of the study area.

Potential hydrology impacts include:

- Surface water run-off or drainage patterns may be altered due to the establishment of impermeable surfaces and permanent structures, including the TSF expansion sites.
- Altered surface water run-off patterns may lead to increased erosion and gulley formation.
- Increased surface water runoff and subsequent soil erosion may result in sedimentation of nearby wetlands.
- Areas that have been stripped of vegetation and topsoil as well as topsoil stockpiles will be prone to erosion, potentially leading to increased suspended solids loads being transported with stormwater.
- Stormwater runoff from the TSF may contain contaminants. Poor stormwater management will potentially result in these contaminants reaching the surface water resources.
- In the unlikely event of TSF failure, tailings would be transported in an easterly direction towards the Blesbokspruit and Cowles Dam and could lead to contamination of rivers and wetlands.

Noise

Potential noise impacts at the project would be of low significance for daytime construction activities at both TSF expansion sites. No significant noise impacts are foreseen during the operational phase of the proposed project.

Potential noise impacts include:

- Noise will be generated during the construction phase for the establishment of access roads, transport of required equipment to the site, operation of equipment and machinery, and site preparation / earthworks.
- As the project is located within an existing mine, it is not anticipated that there will be a significant increase in noise levels during the operational phase.
- The temporary increase in noise levels during construction may negatively impact the outskirts of Modder East suburb and Skoonplaas informal settlement.

Terrestrial biodiversity (flora and fauna)

A portion of the western TSF site is situated within both a Critical Biodiversity Area (CBA) and an Ecological Support Area (ESA). However, the specialist determined the area to be largely transformed and with a low chance of any sensitive plant species occurring.

Potential terrestrial biodiversity impacts include:

- Loss and / or damage to indigenous vegetation and SCC as a result of vegetation clearance and construction activities.
- Site clearing for construction will result in the removal of all vegetation, including the stands of AIP trees (predominantly *Eucalyptus camaldulensis).*
- Proliferation of alien and invasive species.
- Habitat fragmentation and / or degradation due to construction-related activities.
- Poaching or accidental death of faunal species.
- Edge effects (abrupt transition between different neighbouring ecological communities due to habitat fragmentation and AIP proliferation).
- Potential impacts on flora and fauna from increased dust and pollutant concentrations due to the construction-related activities.

Heritage and palaeontology

Potential impacts on cultural heritage / archaeological sites include:

- There are no sites of cultural / archaeological significance at the proposed development footprint; however, it is possible that artefacts / graves may be unearthed and destroyed during construction-related activities.
- Potential damage to the nearby cemetery from vandalism / increased activity in the area during the construction phase.
- There is a small chance that fossils may be found below the ground surface. The overall impact on fossil heritage is considered to be low.

Visual

The TSF will be gradually developed i.e., the tailings will be deposited in layers over an extended period of time, thus affording sensitive viewers time to adapt to the change in the visual landscape. The intended final height of the TSF will be 32.5 m above the natural ground level and will be developed over a 10-year period. The visual impact will largely be felt towards the end of the operational phase, and during decommissioning/closure and post closure.

Potential visual impacts include:

- Permanent change to the visual landscape and / or visual aesthetics of the area due to the permanence of the TSF and vegetation clearance. Skoonplaas will have a permanent view of both the proposed western and northern expanded TSF. Modder East will have a permanent view of the western expansion. Existing vegetation (stands of trees at the western perimeter) may act as a visual buffer between Modder East toward views of the proposed western TSF and may mitigate the visual exposure from certain areas.
- Flooding of lights at night onto neighbouring properties.
- Dust generation caused by construction-related activities.
- Dust generation from the proposed TSF expansion may occur as a result of wind erosion of the TSF surface. However, the TSF will be developed via wet deposition. Once the tailings slurry have dried out, the TSF surface will be covered with a thin "crust" formed by salts and thereby further discourage wind-borne dust generation.

Socio-economic

Potential socio-economic impacts include:

- Everyone has the right to an environment that is not harmful to their health or well-being. The potential negative impacts on air quality in an area already experiencing poor air quality may affect the people's right to a clean environment.
- The ongoing operation of the NKGM processing plant would delay closure of the mine and extend the employment of certain employees (positive).
- Approximately 50 temporary jobs will be created during construction (positive).
- The proposed TSF may result in a negative impact on ambient air quality, and associated health impacts, resulting from increased pollutant concentrations such as inhalable particulate matter ($PM_{2.5}$ and PM_{10}) during construction and operation, and gaseous emissions (SO_2, NO_x or CO) during construction.
- An increase in nuisance dust fall rates as a result of construction-related activities, operation of the TSF and unpaved access road, and post-closure once wet deposition of tailings ceases.
- Increase in noise levels during construction at the nearest sensitive receptors, along the edges of Skoonplaas and the suburb of Modder East.
- Visual intrusion on residents around the proposed TSF expansion. Skoonplaas will have a permanent view of both expansion sites. Modder East will have a permanent view of the western expansion site.

- Influx of job seekers into the region and the associated potential for the expansion of Skoonplaas informal settlement and / or the establishment of a new informal settlement.
- Potential risks of injury to residents of nearby settlements due to construction activity and vehicles traveling on the mine access / haul roads.
- Potential impact to groundwater users should there be seepage into the groundwater from the TSF. However, no groundwater users were identified during the scoping hydrocensus within 1 km of the site, and groundwater generally flows in an easterly direction towards the Blesbokspruit, i.e. away from the populated areas around the TSF.
- Emergency situations (although unlikely) associated with failure of the TSF, including potential fatalities, particularly given the proximity of residential areas, specifically Skoonplaas and Modder East, to the expanded TSF. A detailed Dam Break Analysis will be conducted as part of the EIA Phase.
- Potential impact on current manufacturing and small businesses in the area. Dust from the TSF may potentially impact the planned Calodex Solar Park immediately south of NKGM. Nuisance factors such as dust and noise could potentially impact small businesses in neighbouring suburbs such as Dersley and Modder East.
- Potential negative impact on property values adjacent to the expansion sites
- Potential impact on agriculture through the loss of an area of moderate and high land capability, and impact of dust and particulate matter emissions on crops.
- Potential negative impacts on community health. The two potential sources and routes of contamination, and therefore impact on community health, were determined to be:
    - Potential seepage from the TSF into the groundwater which may affect groundwater used for drinking or household purposes
    - Potential release of particulate matter ($PM_{2.5}$ and PM_{10}) and dust containing other metals into the air that may be inhaled and could potentially impact the health of people living in the vicinity of the TSF. Data from the AQIA will be used to determine the potential impact of air pollutants (particularly $PM_{2.5}$). The impact of any increases in $PM_{2.5}$ on health may not only affect the areas in which the guideline concentrations are exceeded but may also affect areas where $PM_{2.5}$ are lower than guideline limits.
- Loss of access to recreational facilities through the removal of the soccer field located in the Western TSF expansion area.
- Potential community safety impacts and potential increases in crime once mine area is decommissioned and closed off.

Topography

Potential impacts to the topography include:

- Permanent changes to the topography (which is generally flat) as a result of the proposed TSF expansion.

Traffic and road conditions

Minor additional traffic will be generated during the construction phase. It is anticipated that material will be transported to Modder East Operations for processing from NKGM's other nearby operations in future (ConsModder, Holfontein and Modder North). These operations have approved Environmental Authorisations and the transport of material from these operations to the mine was assessed in their respective EIAs, and mitigation and management measures detailed in the approved EMPrs.

Potential impacts on traffic and road conditions include:

- Heavy vehicles / additional traffic can be expected to travel to the site utilising Outeniqua Road and Cloverfield Weg during the construction period.

- Additional traffic / increased vehicle trips on roads, particularly heavy vehicles, may result in further damage to the existing road network and may also result in road accidents.
- Additional traffic may cause an increase in dust and noise levels.
- The transport of material from other operations may have a cumulative impact on traffic volumes and may result in further damage to the existing road network.

i) Methodology used in determining the significance of environmental impacts

(Describe how the significance, probability, and duration of the aforesaid identified impacts that were identified through the consultation process were determined in order to decide the extent to which the initial site layout needs revision)

The following methodology and rationale will be used to assess the significance of the potential impacts of the preferred initial layout on the surrounding biophysical and socio-economic environment.

The objective of the Impact Assessment is to rate the significance of potential impacts of the project prior to and after the implementation of mitigation measures. The methodology encompasses an assessment of the nature, consequence (magnitude, extent, duration) and probability (likelihood) of the identified potential environmental and social impacts of the project. The reversibility of the impact, as well as the cumulative impact, are also considered. The impact is assessed prior to and after the implementation of potential mitigation measures.

The following risk assessment model has been used to determine the significance of impacts:

Significance = (magnitude + duration + scale) × probability

The maximum potential value for the significance of an impact is 100 points. Environmental impacts can therefore be rated as high, medium or low significance on the following basis:

High environmental significance	60 – 100 points
Medium environmental significance	30 – 59 points
Low environmental significance	0 – 29 points

Magnitude (M)	
Minor (2)	• Change not measurable, or threshold never exceeded • There is no need for people to adapt and will not notice changes to livelihoods and lifestyles.
Low (4)	• Low disturbance of degraded areas, which have little conservation value • Minor change in species occurrence or variety • Minor deterioration (nuisance or minor deterioration) or harm to receptors • Change to receiving environment not measurable; or identified threshold never exceeded • People are able to adapt and maintain pre-impact livelihoods and lifestyles.
Moderate (6)	• Moderate / measurable deterioration or harm to receptors • Receiving environment moderately sensitive • Identified threshold occasionally exceeded • People are able to adapt with difficulty (with no resettlement). Pre-impact livelihoods and lifestyles can be maintained with difficulty or with support or intervention • Disturbance of areas that have potential conservation value or are of use as resources • A complete change in species occurrence or variety.
High (8)	• High, measurable deterioration or harm to receptors • Receiving environment highly sensitive • Identified threshold often exceeded • Pre-impact livelihoods and lifestyles cannot be maintained, or resettlement is required.
Very High / Unknown (10)	• Loss of ecosystem function • Loss of an irreplaceable natural resource (including cultural and heritage resources) • Disturbance of pristine areas that have important conservation value • Human health and / or safety are / is compromised • Receptors of impact are of conservation importance; or identified threshold (such as SANS limits, Resource Quality Objectives, etc.) consistently exceeded • Unknown.
Scale (S)	
Footprint (0)	Occurs only within the footprint of the activity

Site (1)	Occurs only within the site of the project
Local (2)	Occurs within approximately 2.5 km of the activity
Regional (3)	A regional scale as determined by administrative boundaries, habitat type / ecosystem or regional loss of a species population
National (4)	Nationally important or macro-economic consequences
International (5)	• Internationally important agreements and resources are affected such as areas protected by international conventions, international waters etc. • Unknown.
Duration (D)	
Immediate (1)	• Completely reversible without management • Impact is instantaneous and ceases imminently.
Short (2)	• Naturally reversible or reversible with minimal management • Ceases when the activity ceases.
Medium (3)	• Can be reversed with sufficient management • Ceases when the project ends.
Long (4)	Potentially irreversible even with management
Permanent (5)	• Remains after the life of the project • Continues indefinitely / ad infinitum • Unknown.
Probability (P)	
Improbable (1)	Improbable, almost impossible
Unlikely (2)	Low probability, unlikely to occur
Likely (3)	Medium probability, likely to occur
Expected (4)	High probability, expected to occur
Definite (5)	Definite (certain) or unknown

The significance of a particular impact which is reduced through the application of the recommended mitigation measures is indicated within square brackets. The potential impacts are described per receptor. The significance of these impacts is determined according to the above methodology. Where mitigation measures are recommended to reduce the significance of a potential impact, these have been indicated. The tabulated impact assessments are further elaborated upon per receptor below.

Table 16. Preliminary assessment of potential impacts of the project pre- and post-implementation of mitigation measures (Section 12.g)

Project phase and activities	Environmental component	Impact	Pre-mitigation [Post-mitigation]					
			Magnitude (M)	Scale (S)	Duration (D)	Probability (P)	Significance	
							Rating	Score
Construction phase								
Construction-related activities: • Clearing of land, surface preparations and site establishment • Soil stockpiling • Vehicles travelling on unpaved roads • Operation of machinery • Mixing and handling of concrete • Construction of surface infrastructure including the expansion of the existing TSF, internal haul roads and access roads, pedestrian walkway, and parking area • Rerouting of utilities • Excavation	Air quality	Dust generation as a result of construction-related activities, vegetation clearance, stripping of topsoil, excavation / earthworks, materials handling, bulldozing, erosion of stockpiles, and entrainment of loose material at unpaved / exposed areas.	6 [4]	2 [2]	2 [2]	4 [3]	Medium [Medium]	40 [24]
		Human health may be impaired as a result of increased pollutant concentrations (inhalable particulate matter ($PM_{2.5}$ and PM_{10}), and gaseous emissions (SO_2, NO_x or CO) associated with construction-related activities.	6 [4]	2 [2]	2 [2]	4 [3]	Medium [Low]	44 [24]
		Change in ambient air quality due to gaseous emissions from heavy machinery, mechanical equipment and vehicles.	4 [2]	2 [2]	3 [2]	3 [2]	Low [Low]	27 [16]
		Dust generated may result in temporary nuisance to surrounding sensitive receptors and a change in ambient air quality.	6 [4]	2 [2]	2 [2]	3 [2]	Low [Low]	24 [16]
	Noise	Increase in ambient noise levels and nuisance noise to surrounding sensitive receptors.	4 [2]	2 [2]	2 [2]	4 [3]	Medium [Low]	32 [18]
	Soil and land capability	Contamination of soils from pollution, spillages and unsafe storage / handling of chemicals.	4 [2]	1 [1]	3 [3]	3 [2]	Low [Low]	24 [12]
		Erosion from stormwater runoff and vegetation clearance.	4 [2]	2 [1]	4 [3]	4 [3]	Medium [Low]	48 [24]
		Change in land capability from agricultural use to industrial.	8	1	5	5	High	70
		Potential loss of agriculturally important soils (4.7 ha).	6 [6]	1 [0]	5 [4]	5 [3]	High [Medium]	60 [30]
		Change in soil properties due to compaction and subsequent soil structure destruction as a result of ancillary infrastructure.	6 [4]	1 [0]	2 [1]	5 [2]	[Medium] [Low]	45 [18]
		Loss of soil properties due to compaction and subsequent soil destruction as a result of the TSF permanence.	8	1	5	5	High	70
	Terrestrial ecology	Reduction / loss of floral and faunal diversity.	6 [4]	1 [0]	5 [3]	4 [3]	Medium [Low]	48 [21]
		Habitat fragmentation and / or degradation.	6 [4]	1 [0]	4 [3]	5 [3]	Medium [Low]	55 [21]

Project phase and activities	Environmental component	Impact	Pre-mitigation [Post-mitigation]					
			Magnitude (M)	Scale (S)	Duration (D)	Probability (P)	Significance	
							Rating	Score
		Proliferation of alien and invasive species. Alien and invasive floral species have the potential to outcompete indigenous vegetation and reduce faunal habitat quality. Potential edge effects.	6 [4]	2 [0]	4 [3]	4 [3]	Medium [Low]	48 [28]
		Loss of Species of Conservation Importance. Loss of individual Orange Listed *Hypoxis hemerocallidea* plants.	6 [4]	1 [0]	4 [3]	4 [2]	Medium [Low]	36 [14]
	Heritage and palaeontology	Loss of subterranean / previously unidentified heritage and paleontological resources.	8 [4]	1 [1]	4 [3]	3 [2]	Medium [Low]	39 [16]
		Damage to the existing cemetery (although not within the proposed development footprint).	8 [4]	1 [1]	4 [3]	2 [1]	Low [Low]	26 [8]
	Hydrology	Change in surface water run-off or drainage patterns due to an increase in impermeable surfaces and permanent structures.	6 [4]	2 [1]	4 [3]	4 [2]	Medium [Low]	48 [16]
		Altered surface water run-off patterns may lead to increased erosion, increased loads of suspended solids transported by stormwater, and gulley formation.	4 [2]	1 [0]	3 [2]	3 [2]	Low [Low]	24 [8]
		Increased surface water runoff and subsequent soil erosion may result in sedimentation of nearby wetlands.	6 [4]	3 [2]	4 [3]	2 [1]	Low [Low]	26 [9]
	Hydrogeology / groundwater	Groundwater contamination and change in groundwater chemistry / quality due to the accidental spill or incompetent use of cement / concrete, hydrocarbons and hazardous chemicals.	6 [4]	1 [0]	3 [2]	3 [2]	Medium [Low]	30 [12]
		Vegetation clearance may alter the underlying aquifer's vulnerability due to an increase in water infiltration and potential contaminants into the subsurface.	6 [4]	2 [1]	3 [2]	3 [2]	Medium [Low]	33 [14]
		Groundwater contamination as a result of poor-quality water utilised for dust suppression measures.	4 [2]	1 [0]	3 [2]	2 [1]	Low [Low]	16 [4]
	Visual	Flooding of lights at night onto neighbouring properties.	4 [2]	2 [1]	3 [2]	3 [2]	Low [Low]	27 [10]
		Dust generation caused by construction-related activities.	6 [4]	4 [3]	2 [1]	4 [3]	Medium [Low]	48 [24]
		Loss of visual aesthetics due to vegetation clearance and increased presence of construction-related aspects.	4 [2]	1 [1]	3 [2]	4 [3]	Medium [Low]	32 [15]
	Socio-economic	Temporary employment opportunities during construction.	2 [2]	2 [2]	2 [2]	2 [2]	Low + [Low] +	16 [16]

Project phase and activities	Environmental component	Impact	Pre-mitigation [Post-mitigation]					
			Magnitude (M)	Scale (S)	Duration (D)	Probability (P)	Significance	
							Rating	Score
		Dust generated during construction may result in temporary nuisance to surrounding sensitive receptors.	6 [4]	2 [1]	2 [2]	3 [2]	Medium [Low]	30 [14]
		Increased noise during construction may result in temporary nuisance to surrounding sensitive receptors.	6 [4]	2 [2]	2 [2]	2 [2]	Low [Low]	24 [24]
		In-migration of job seekers and associated increase in informal settlements.	4 [2]	2 [2]	5 [4]	3 [2]	Medium [Low]	33 [16]
		Community health and safety related to injuries of people due to construction activities.	4 [2]	2 [2]	2 [2]	2 [1]	Low [Low]	16 [6]
		Disruption of services (internet access, electricity) due to the rerouting of fibre cables and state-owned powerlines.	4 [2]	2 [2]	1 [1]	4 [4]	Low [Low]	24 [24]
		Impact on agriculture and loss of approximately 20ha of land with high and moderate agricultural capability	4 [2]	2 [2]	4 [4]	2 [2]	Low [Low]	20 [16]
	Traffic	Surrounding road network congestion and reduced intersection capacity.	6 [4]	2 [2]	2 [2]	3 [3]	Medium [Low]	30 [24]
		Deterioration of road condition / quality due to additional traffic / increased vehicle trips, resulting in unsafe driving conditions.	4 [4]	2 [2]	3 [3]	2 [2]	Low [Low]	18 [18]
Operational phase								
Operational activities: • TSF incremental development through deposition of wet tailings slurry on the TSF • Handling and storage of slurry tailings • Vehicles and trucks travelling	Air quality	Dust generation as a result of unrehabilitated exposed areas and erosion from unrehabilitated stockpiles due to the wind lifting and dispersing loose material during high wind incidents (> 5 m/s).	6 [4]	2 [1]	4 [3]	3 [2]	Medium [Low]	36 [16]
		Wind-borne dust generation at the TSF surface.	6 [4]	2 [1]	4 [3]	3 [2]	Medium [Low]	36 [16]
		Human health may be impaired as a result of increased pollutant concentrations (inhalable particulate matter ($PM_{2.5}$ and PM_{10}), and gaseous emissions (SO_2, NO_x or CO) associated with operational activities.	6 [4]	2 [1]	3 [2]	3 [2]	Medium [Low]	33 [14]
		Gaseous emissions through the use of fuel-powered equipment, machinery and vehicles.	4 [2]	2 [1]	2 [2]	3 [2]	Low [Low]	4 [14]
	Noise	Increase in ambient noise levels and nuisance noise to surrounding sensitive receptors.	4 [2]	1 [0]	2 [2]	3 [2]	Low [Low]	21 [8]

Project phase and activities	Environmental component	Impact	Pre-mitigation [Post-mitigation]					
			Magnitude (M)	Scale (S)	Duration (D)	Probability (P)	Significance	
							Rating	Score
on the rerouted unpaved road • Occasional maintenance of TSF incremental development	Soil and land capability	Contamination of soils from pollution, spillages and unsafe storage / handling of chemicals.	6 [4]	1 [1]	3 [3]	2 [2]	Low [Low]	20 [18]
		Erosion from stormwater runoff due to the inadequate implementation of stormwater management plans. Erosion from stormwater at unrehabilitated exposed areas.	6 [4]	2 [1]	3 [2]	3 [2]	Medium [Low]	33 [14]
		Loss of stockpiled topsoil and subsoil (stored for rehabilitation purposes at closure phase) due to inadequate revegetation and the implementation of erosion control measures.	10 [4]	1 [0]	5 [3]	3 [2]	Medium [Low]	48 [14]
		Loss of soils due to compaction and subsequent soil structure destruction.	8 [4]	2 [1]	3 [2]	4 [3]	Medium [Low]	52 [21]
	Terrestrial ecology	Reduction / loss of floral and faunal diversity.	6 [4]	1 [0]	3 [2]	3 [2]	Medium [Low]	30 [12]
		Habitat fragmentation and / or degradation.	6 [4]	1 [0]	3 [2]	3 [2]	Medium [Low]	30 [12]
		Proliferation of alien and invasive species. Alien and invasive floral species have the potential to outcompete indigenous vegetation and reduce faunal habitat quality. Potential edge effects.	6 [4]	2 [0]	4 [3]	3 [2]	Medium [Low]	36 [17]
		Loss of Species of Conservation Importance. Loss of individual Orange Listed *Hypoxis hemerocallidea* plants.	6 [4]	1 [0]	4 [3]	2 [2]	Low [Low]	22 [14]
	Heritage and palaeontology	Loss of subterranean / previously unidentified heritage and paleontological resources.	8 [4]	1 [1]	4 [3]	2 [2]	Low [Low]	26 [16]
		Damage to the existing cemetery (although not within the proposed development footprint).	8 [4]	1 [1]	4 [3]	2 [1]	Low [Low]	26 [8]
	Hydrology	Change in surface water run-off or drainage patterns due to an increase in impermeable surfaces and permanent structures.	6 [4]	2 [1]	4 [3]	4 [2]	Medium [Low]	48 [16]
		Altered surface water run-off patterns may lead to increased erosion, increased loads of suspended solids transported by stormwater, and gulley formation.	4 [2]	1 [0]	3 [2]	3 [2]	Low [Low]	24 [8]
		Increased risk of surface water contamination through runoff from the TSF during high rainfall events.	6 [4]	2 [1]	3 [2]	3 [2]	Medium [Low]	33 [14]
		Potential TSF failure (unlikely) and subsequent contamination of wetlands and rivers.	10 [6]	3 [2]	5 [4]	2 [1]	Medium [Low]	36 [12]

Project phase and activities	Environmental component	Impact	Pre-mitigation [Post-mitigation]					
			Magnitude (M)	Scale (S)	Duration (D)	Probability (P)	Significance	
							Rating	Score
	Hydrogeology / groundwater	Groundwater contamination and change in groundwater chemistry / quality due to the accidental spill or incompetent use of hydrocarbons and hazardous chemicals.	6 [4]	2 [1]	4 [3]	3 [2]	Medium [Low]	36 [16]
		Groundwater / aquifer contamination due to potential seepage from the expanded TSF and refurbished RWD.	8 [6]	3 [1]	4 [3]	3 [2]	Medium [Low]	45 [20]
		Deterioration of groundwater quality due to contaminated stormwater run-off and inadequate stormwater management implementation.	6 [4]	2 [1]	3 [2]	3 [2]	Medium [Low]	33 [14]
		Groundwater contamination as a result of poor-quality water utilised for dust suppression measures.	4 [2]	1 [0]	3 [2]	2 [1]	Low [Low]	16 [4]
		Decrease in groundwater recharge, specifically in the vadose / unsaturated zone where infiltration and percolation occur, as a result of additional impermeable surfaces.	6 [4]	1 [1]	4 [4]	3 [2]	Medium [Low]	42 [18]
		Unrehabilitated areas at previously disturbed surfaces may alter the underlying aquifer's vulnerability due to an increase in water infiltration and potential contaminants into the subsurface.	6 [4]	1 [0]	3 [2]	3 [2]	Medium [Low]	30 [12]
	Visual	Night-time illumination for the safety and security of workers. Flooding of lights at night onto neighbouring properties.	4 [2]	2 [1]	3 [1]	3 [2]	Low [Low]	27 [8]
		Fugitive dust emissions from airborne dust at the TSF surface and vehicles travelling on unpaved / gravel roads.	6 [4]	2 [1]	3 [2]	3 [2]	Medium [Low]	33 [14]
		Loss of visual aesthetics due to insufficient revegetation at previously disturbed surfaces, and failure to remove all construction-related equipment and waste.	6 [4]	1 [0]	3 [2]	3 [1]	Medium [Low]	30 [6]
		Change in visual aesthetics and sense of place due to the incremental development of the TSF.	6 [4]	5 [4]	2 [2]	5 [4]	High [Medium]	65 [40]
	Topography	Changes to the topography as a result of TSF development	6 [6]	2 [2]	5 [5]	5 [5]	High [High]	65 [65]
	Socio-economic	Ongoing operation of the NKGM processing plant and associated continued employment and delay of closure.	6 [6]	3 [3]	3 [3]	3 [3]	Medium + [Medium +]	36 [36]
		Decrease in air quality as a result of dust and pollution and associated impacts on human rights of residents in the adjacent areas.	4 [2]	1 [1]	2 [2]	4 [3]	Low [Low]	28 [15]
		Visual intrusion from the expanded TSF towards the end of operation.	8 [6]	1 [1]	5 [5]	3 [3]	Medium [Medium]	42 [36]

Project phase and activities	Environmental component	Impact	Pre-mitigation [Post-mitigation]					
			Magnitude (M)	Scale (S)	Duration (D)	Probability (P)	Significance	
							Rating	Score
		Community health impacts associated with a potential decline in air and water quality.	6 [4]	2 [2]	3 [3]	3 [2]	Medium [Low]	33 [18]
		Community health and safety related to injuries of people due to operational activities.	4 [2]	1 [1]	3 [2]	3 [1]	Low [Low]	24 [5]
		Risks associated with TSF failure and potential loss of life and damage to property.	8 [4]	2 [2]	3 [3]	3 [2]	Medium [Low]	36 [18]
		Potential for unrest and protest.	6 [4]	2 [2]	2 [2]	3 [2]	Low [Low]	36 [16]
		Loss of sense of place.	4 [2]	2 [2]	3 [3]	2 [2]	Low [Low]	18 [14]
		Impact on current manufacturing and small businesses.	4 [2]	1 [1]	1 [1]	2 [2]	Low [Low]	12 [8]
		Potential decline in property values in surrounding areas.	6 [4]	2 [2]	3 [3]	3 [2]	Medium [Low]	33 [18]
		Groundwater quality and quantity in neighbouring boreholes and associated impacts on health and agriculture	4 [2]	2 [2]	4 [4]	2 [2]	Low [Low]	20 [8]
		Loss of access to recreational area (soccer field)	4 [2]	2 [2]	3 [3]	2 [2]	Low [Low]	18 [14]
	Traffic	Cumulative impact of transporting material from NKGM's other operations to Modder East, and associated deterioration of road condition and road safety impacts from increased numbers of heavy vehicles	6 [6]	3 [2]	3 [3]	3 [2]	Medium [Low]	36 [22]
		Fugitive dust dispersion on gravel roads may cause / accelerate health problems for surrounding residents.	6 [4]	2 [1]	3 [2]	2 [1]	Low [Low]	22 [7]
		Direct impact on amenities from an increase in nuisance dust fall rates (PM_{10}) as a result of operational-related activities.	6 [4]	2 [1]	3 [2]	2 [1]	Low [Low]	22 [7]
		Surrounding road network congestion and reduced intersection capacity.	4 [4]	2 [2]	2 [2]	3 [2]	Low [Low]	24 [16]

Project phase and activities	Environmental component	Impact	Pre-mitigation [Post-mitigation]					
			Magnitude (M)	Scale (S)	Duration (D)	Probability (P)	Significance	
							Rating	Score
		Deterioration of road condition / quality due to additional traffic / increased vehicle trips, resulting in unsafe driving conditions.	4 [4]	2 [2]	2 [2]	2 [2]	Low [Low]	16 [16]
Decommissioning and closure phase								
Closure activities: • TSF closure and rehabilitation ○ Ceasing wet deposition of tailings on TSF ○ Placing of final cover and final shaping re-profiling of the TSF to provide a well graded surface that promotes surface runoff and prevents ponding ○ Capping ○ Revegetation • Ripping and revegetation of access roads • Removal of surface infrastructure and rehabilitation	Air quality	Increased dust and associated particulate matter emissions generated due to the removal of surface infrastructure.	6 [4]	2 [1]	3 [2]	4 [3]	Medium [Low]	44 [21]
		Gaseous emissions through the use of fuel-powered equipment, machinery and vehicles.	6 [4]	2 [2]	3 [2]	3 [2]	Medium [Low]	33 [16]
		Human health may be impaired as a result of increased pollutant concentrations (inhalable particulate matter ($PM_{2.5}$ and PM_{10}).	6 [4]	2 [2]	3 [2]	4 [3]	Medium [Low]	44 [24]
	Noise	Increase in ambient noise levels and nuisance noise to surrounding sensitive receptors.	4 [2]	2 [2]	2 [2]	4 [3]	Medium [Low]	32 [18]
		Contamination of soils from pollution, spillages and unsafe storage / handling of chemicals.	6 [4]	1 [1]	4 [3]	3 [2]	Medium [Low]	33 [16]
		Loss of soil structure due to inadequate soil amelioration and alleviation measures of compacted soils.	6 [4]	1 [0]	4 [3]	4 [2]	Medium [Low]	44 [14]
		Proliferation of alien and invasive species due to revegetation with a non-weed-free seed mix.	6 [4]	2 [0]	4 [3]	4 [3]	Medium [Low]	48 [28]
	Heritage and palaeontology	Loss of subterranean / previously unidentified heritage and paleontological resources.	8 [4]	1 [1]	4 [3]	3 [2]	Medium [Low]	39 [16]
		Damage to the existing cemetery (although not within the proposed development footprint).	8 [4]	1 [1]	4 [3]	2 [1]	Low [Low]	26 [8]
	Hydrology	Change in surface water run-off or drainage patterns due to the permanence of the TSF.	6 [4]	2 [1]	4 [3]	4 [3]	Medium [Low]	48 [24]
		Altered surface water run-off patterns due to the permanence of the TSF may lead to increased erosion, increased loads of suspended solids transported by stormwater, and gulley formation.	4 [2]	1 [0]	3 [2]	3 [2]	Low [Low]	24 [8]

Project phase and activities	Environmental component	Impact	Pre-mitigation [Post-mitigation]					
			Magnitude (M)	Scale (S)	Duration (D)	Probability (P)	Significance	
							Rating	Score
• Topsoil placement and revegetation • Rehabilitation of disturbed all areas		Increased risk of contamination through runoff from TSF due to a compromised capping layer.	8 [6]	2 [1]	4 [3]	3 [2]	Medium [Low]	42 [20]
		Potential TSF failure (unlikely) and subsequent contamination of wetlands and rivers.	10 [6]	3 [2]	5 [4]	2 [1]	Medium [Low]	36 [12]
	Hydrogeology / groundwater	Groundwater contamination and change in groundwater chemistry / quality due to the accidental spill or incompetent use of hydrocarbons and hazardous chemicals.	6 [4]	2 [1]	4 [3]	3 [2]	Medium [Low]	36 [16]
		Groundwater / aquifer contamination due to potential seepage from the expanded TSF.	8 [6]	3 [1]	4 [3]	3 [2]	Medium [Low]	45 [20]
		Deterioration of groundwater quality due to contaminated stormwater run-off and inadequate stormwater management implementation.	6 [4]	2 [1]	3 [2]	3 [2]	Medium [Low]	33 [14]
		Increased risk of contamination through runoff from TSF due to a compromised capping layer.	8 [6]	2 [1]	4 [3]	3 [2]	Medium [Low]	42 [20]
	Visual	Permanent change in visual aesthetics and sense of place due to the final TSF height of 32.5 m.	8 [6]	2 [2]	5 [4]	5 [4]	High [Medium]	75 [48]
	Topography	Changes to the topography as a result of TSF development	6 [6]	2 [2]	5 [5]	5 [5]	High [High]	65 [65]
	Socio-economic	Loss of employment / retrenchment and associated negative impacts.	4 [4]	3 [3]	4 [4]	4 [4]	Medium [Medium]	44 [44]
		Potential impact on property values adjacent to the permanence of the TSF sites.	6 [4]	2 [2]	4 [4]	4 [2]	Medium [Low]	48 [20]
		Risks associated with TSF failure and potential loss of life and damage to property.	6 [4]	3 [2]	4 [3]	3 [2]	Medium [Low]	39 [18]
		Surrounding road network congestion and reduced intersection capacity.	4 [4]	2 [2]	2 [2]	3 [2]	Low [Low]	24 [16]
		Decrease in air quality and associated dust, pollution and health impacts including windblown dust and particulate matter from the TSFs during and after rehabilitation.	8 [6]	2 [2]	4 [3]	4 [3]	Medium [Medium]	48 [33]
		Community health and safety related to potential decline in air quality.	8 [6]	2 [2]	4 [3]	4 [3]	Medium [Medium]	56 [33]

Project phase and activities	Environmental component	Impact	Pre-mitigation [Post-mitigation]					
			Magnitude (M)	Scale (S)	Duration (D)	Probability (P)	Significance	
							Rating	Score
		Community health and safety impacts and potential increases in crime related once mine area is decommissioned and closed off.	6 [4]	1 [1]	4 [3]	2 [2]	Low [Low]	22 [16]
		Increased noise from the removal of TSF infrastructure may result in a temporary nuisance to surrounding sensitive receptors.	4 [2]	1 [1]	1 [1]	2 [2]	Low [Low]	12 [8]

ii) The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected

(Provide a discussion in terms of advantages and disadvantages of the initial site layout compared to alternative layout options to accommodate concerns raised by affected parties)

Initial layout

The proposed initial layout (currently preferred) of expanding the TSF both westwards and northwards is reflected in Figure 2. The preliminary potential impacts have been addressed in Table 16.

Negative impacts are summarised below:

The TSF expansion footprints are between 100 m and 140 m away from existing residential areas (formal and informal). Surface preparation, clearing of land, construction, operation and decommissioning of surface infrastructure (haul roads, access roads, TSF, RWD), stockpiling of topsoil and subsoil, may result in the impacts as illustrated in Table 17. The impact rating allocated is prior to any mitigation measures applied.

Table 17. Summary of negative impacts associated with the initial layout

Impact	Project phase	Impact rating (without mitigation)	Impact rating (after mitigation)
• Decrease in ambient air quality due to the generation of dust and particulate matter	Construction	Medium	Low
• Visual impact on residents of Modder East and Skoonplaas	Operation, Decommissioning	High	Medium
• Loss of 20 ha of high and moderate potential agricultural land	Construction	High	High
• Permanent change in topography	Operation, Decommissioning	High	High
• Health impacts (from decreased air quality) for individuals in surrounding communities	Decommissioning	Medium	Medium
• Reduction in neighbouring property values	Operation, Decommissioning	Medium	Low
• Health impacts (from decreased air quality) for individuals in surrounding communities	Construction, Operation	Medium	Low
• Reduction in floral and faunal diversity	Construction	Medium	Low
• Damage or destruction of floral and faunal SCC	Operation	Medium	Low
• Potential TSF failure (unlikely) and subsequent contamination of wetlands and rivers.	Operation, Decommissioning, Closure	Medium	Low
• Risks associated with TSF failure and potential loss of life and damage to property.	Operation, Decommissioning, Closure	Medium	Low
• Increased alien vegetation proliferation	Decommissioning	Medium	Low
• Loss of subterranean / previously unidentified heritage and paleontological resources	Construction, Decommissioning	Medium	Low
• In-migration of jobseekers into the region and associated secondary impacts (pressure on existing infrastructure and services, increase in crime)	Construction, Operation	Medium	Low
• Change in surface water drainage lines	Construction, Operation, Decommissioning	Medium	Low
• Potential contamination of groundwater from the TSF	Operation, Decommissioning	Medium	Low
• Greenhouse gas emissions from heavy machinery and construction vehicles	Construction, Decommissioning	Medium	Low
• Nuisance noise during construction	Construction	Medium	Low
• Erosion from stormwater runoff	Construction, Operation, Decommissioning	Medium	Low

Impact	Project phase	Impact rating (without mitigation)	Impact rating (after mitigation)
• Cumulative impact of transporting material from NKGM's other operations to Modder East, and associated deterioration of road condition and road safety impacts from increased numbers of heavy vehicles	Operation	Medium	Low
• Visual intrusion at night from additional lighting	Construction, Operation	Low	Low
• Increased congestion on the road network and deterioration in road pavement quality resulting in unsafe driving conditions	Operation	Low	Low
• Contamination of soils from machinery and spills	Construction	Low	Low
• Potential impact on external groundwater users	Operation, Decommissioning	Low	Low

Positive impacts are summarised below:

- Continued operation of the existing NKGM processing plant and continued employment for some of the current surface employees due to a delay in closure of the processing plant
- Ongoing taxes and profits from the procurement of goods and services, and the increased spending power of employees (a percentage of the existing employees)
- Temporary employment opportunities will be available during the construction phase of the project
- The presence of the mine offers some level of security to the local residents, in that illegal mining and potentially other illegal activities are curbed or controlled by mine security.

The no-go alternative

The option of not proceeding with the TSF expansion is considered the "no-go" alternative. In this scenario, the existing TSF would reach capacity in 2026 and NKGM would commence with decommissioning and closure of underground and surface operations as planned in 2027.

Negative impacts are summarised below:

- NKGM will commence with closure of underground mining as planned in 2027. Should the existing TSF not be expanded, the life of the processing plant and associated existing infrastructure will not be extended. Decommissioning of the entire NKGM workforce (underground and surface workers) would involve the retrenchment of the approximately 2 600 employees. This is currently anticipated and has been planned for in the SLP.
- The benefits felt through direct employment and procurement at NKGM would cease as planned and as per the SLP.
    - The knock-on effects of mass retrenchment will be felt by the local community as buying power of employees and procurement opportunities will be reduced significantly.
    - Loss of taxes and royalties to the government are significant but anticipated as closure has been planned for.
    - Bursaries, training opportunities, skills development initiatives, and Local Economic Development (LED) initiatives in line with the SLP would cease.
- Cessation of the basic health services supplied by the mine to employees through the Occupational Health Provider (OHP).
- With many of the mine's employees residing in Skoonplaas and Modder East / Eastvale, retrenchment of the workforce would result in these areas having increased unemployment rates, with the associated negative

impacts (increase in poverty, crime levels, social ills, and additional pressure and reliance on governmental health care etc.).

- Gold One's other nearby authorised operations (Cons Modder and Holfontein) have relied on available airspace being accessible at the NKGM TSF for disposal of tailings from those operations. By not expanding the existing TSF, the Cons Modder and Holfontein operations might no longer be feasible, and alternative tailings disposal facilities would need to be identified for those operations. This will likely result in the need for the construction of a new TSF at either one of these sites.

Positive impacts are summarised below:

- The potential negative impacts of the expansion project, such as a further decline in air quality in an already degraded airshed, would not be realised. Associated with this are the potential negative impacts on human health that would not be experienced. However, it should be noted that there may already be health impacts that are being experienced due to the current poor air quality in the area.
- The visual impact of the existing TSF would not be increased.
- The positive impacts of decommissioning and closure of the existing TSF, such as the rehabilitation of the TSF and reduced heavy vehicle traffic in the suburb, would be experienced in the near future.
- Rehabilitation of the currently disturbed area upon completion of mining may improve the visual and aesthetic features of the site.

iii) The possible mitigation measures that could be applied and the level of risk

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered)

A Comments and Responses Report (CRR) will be compiled and submitted to the Competent Authority for consideration in the final Scoping Report after the 30-day commenting period has ended. It will include all comments raised by any IAPs including the relevant State Departments, and the responses thereto. A summary of the Scoping Phase Comments and Responses Report will be provided to IAPs.

Where relevant and appropriate, suggested mitigation measures will be incorporated into the Scoping Report and through into the EIA Report.

d) Outcome of the site selection matrix - final site layout plan

(Provide a final site layout plan as informed by the process of consultation with interested and affected parties)

The initial site layout plan showing the proposed surface infrastructure is reflected in Figure 2. Concerns were raised during public consultation regarding the layout. Further studies are underway to determine the final preferred layout. A dam break analysis (DBA) is currently being undertaken to assess the potential zone of influence, population at risk, potential loss of life and environmental impacts. The outcomes of the DBA and specialist studies, notably the air quality impact assessment and community health impact assessment may indicate that changes to the layout will need to be considered. The initial site layout shown in Figure 2 therefore represents the maximum possible footprint. Any proposed changes to the layout will be highlighted in the EIA phase.

i) Motivation where no alternative sites were considered

No alternative site locations were assessed as the expansion of the TSF, rather than the construction of a new TSF, is considered the most feasible option considering also the location of the existing processing plant that generates tailings. Placement of the TSF at another site further away from the processing plant will have additional implications for pumping of tailings (such as potential vandalism of tailings pipeline and associated spillages of tailings). The TSF could not be expanded to the immediate south due to a planned and approved solar park at this location. Expansion

to the east is constrained by a railway line. Expansion on the neighbouring property situated to the north is unfeasible due to presence of a unchanneled valley bottom wetland. It would also potentially mean the sterilisation or loss of additional agricultural land. Locations for expansion of the TSF were limited to land within the mine's lease area in order to prevent impacts on other landowners, and additional loss of high capability agricultural land.

ii) Statement motivating the preferred site

(Provide a statement of motivation for the final site layout that is proposed)

The selected (preferred) site is the most feasible because:

- The footprint of the proposed development is limited to mine's lease area. No other landowners will therefore be directly affected by the development footprint.
- The mine lease area is already zoned for mining.
- The processing plant is optimally located to prevent the need for piping of tailings slurry over great distances.
- The development footprint is restricted to areas that have already been impacted by anthropogenic activities. The western expansion site is considered disturbed, and the northern expansion site has been affected by agricultural activities. Only a small portion of high potential agricultural land will be affected by the northern expansion site (4.7 ha).

11) PLAN OF STUDY FOR THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

a) Description of alternatives to be considered including the option of not going ahead with the activity

Should alternative layouts be presented by the Applicant, specialists or IAPs, these will be considered during the EIA process. The option of not going ahead with the activity will also be considered.

b) Description of the aspects to be assessed as part of the environmental impact assessment process

(The EAP must undertake to assess the aspects affected by each individual mining activity whether listed or not, including activities such as blasting, loading, hauling and transport, and mining activities such as excavations, stockpiles, discard dumps or dams, water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, stormwater control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.)

The project activities to be assessed include:

- Clearing of vegetation, surface preparations / earthworks, and site establishment
- Heavy vehicles travelling on unpaved roads during construction
- Heavy and light vehicles travelling on established roads during all phases, including hauling of material from NKGM's nearby operations
- Re-routing of access road and the use thereof
- Upgrade to the existing RWD1
- Expansion of the existing TSF in a northern and western direction (construction and operation)
- Removal and stockpiling of topsoil
- Removal and disposal of building rubble from the western expansion site
- Re-routing of existing powerlines and fibre cables
- Expansion of the tailings slurry reticulation system
- Establishment of temporary laydown areas for construction, including chemical ablution facilities
- Removal of AIPs
- Persevering / retaining the stands of existing trees at the western perimeter of the study area
- Decommissioning and rehabilitation.

The findings of the EIA process will provide a detailed overview of the potential impacts (including direct, indirect, cumulative and latent impacts) of the project on the biophysical and social environments. The preliminary impacts that have been identified and assessed are presented / discussed in Section 10)c) and Table 16**.**

c) Description of aspects to be assessed by specialists

The following specialist studies are required for the proposed project and were identified using the Screening Report (Appendix 16) and the expertise of the EAP. Some of these studies have already been completed. The public consultation process revealed that additional specialist studies will be required, namely a traffic impact assessment and a property valuation study.

Air quality

Rayten Engineering Solutions was appointed to conduct a baseline air quality assessment to determine the prevailing meteorological conditions at the site, to establish baseline concentrations of key air pollutants of concern, identify existing sources of emissions, and identify key sensitive receptors surrounding the project site (Appendix 4). During the EIA phase, an Air Quality Impact Assessment will be conducted and the following will be investigated:

- A detailed air pollution inventory and pollutant dispersion model
- Information on point source parameters and emission rates
- Identification of complaints received at the mine regarding emissions, dust and odour and associated corrective actions
- Determination of environmental risk
- Recommendation of mitigation and management measures.

Community health

A Scoping Phase Rapid Appraisal Health Impact Assessment (RAHIA) was undertaken by Infotox (Appendix 8). The Scoping phase study determined the baseline vulnerability to disease for the area and determined the major pathways of interest for potential impacts on community health to be air and groundwater. The RAHIA will be completed during the EIA phase and will include a Human Health Risk Assessment (HHRA) for air and groundwater, which is based on concentrations of hazardous substances in the air and groundwater, to determine whether specific exposures to an individual or a community might lead to adverse health effects.

The HHRA will involve the following:

- HHRA for air will use the results of the Air Quality Impact Assessment modelling of existing and incremental increases in $PM_{2.5}$ concentrations to quantify the associated health risks. Potential contributions to health effects in the receptor communities will be estimated for the operational phase, relative to the current mortality and hospital admission rates. A risk quantification will be conducted.
- Contaminant concentrations in air, due to the dispersion of fugitive dusts from the TSF, will be derived from the modelled concentrations of $PM_{2.5}$ in the air at ground level, and from an analysis of the likely contaminant concentrations in tailings samples.
- Results from the numerical groundwater flow model, including modelled concentrations of contaminants in groundwater at the sites relevant to the receptor communities, will be used to investigate the groundwater pathway of exposure.
- An exposure-response assessment will address the relationship between levels and periods of exposure and the manifestation of adverse health effects in humans, and/or how humans can be expected to respond to different concentrations of contaminants in the air or groundwater used for household purposes, including drinking water.

Dolomite stability evaluation

T.O. Geotechnical Solutions was appointed to conduct a Dolomite Stability Evaluation. The scope of work entails a Phase 1 desktop study to determine the potential for sinkhole and subsidence formation.

Freshwater / watercourse verification

Scientific Aquatic Services (SAS) was appointed to conduct a Freshwater Ecological Assessment (Appendix 13). The scope of the work entailed:

- Definition and verification of any freshwater ecosystems within the proposed TSF footprint and 500 metres thereof
- Delineation of all freshwater ecosystems within the study and investigation area (within 500 metres of the TSF expansion footprint) using aspects such as soil morphological characteristics, vegetation types and wetness to verify freshwater ecosystems
- Identifying and assessing potential impacts, providing recommendations and mitigations measures, and input regarding any development constraints.

Heritage

Archaetnos was appointed to conduct a Heritage Impact Assessment (HIA) (Appendix 10). The scope of the work entailed:

- Providing background information on the project area and reviewing applicable legislative requirements
- Identifying and documenting objects, sites, occurrences and structures of an archaeological or historical nature / significance within and around the TSF expansion footprints
- Assessing the significance of identified cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value
- Describe the possible impact of the proposed project changes on these cultural remains
- Recommending suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.

Hydrogeology

A Hydrogeological Baseline Assessment (Appendix 12) was conducted by Wesst Consulting which involved:

- A desktop review of historical groundwater information and existing specialist reports and database
- Hydrocensus user survey to evaluate and verify existing surface and groundwater uses, local and neighbouring borehole locations and depths, spring localities and seepage zones, regional water levels, abstraction volumes, groundwater application as well as environmental receptors in the vicinity of the proposed underground mining footprints.
- Sampling of existing boreholes and surface water bodies according to best practise guidelines and analyses of water samples to determine the macro and micro inorganic chemistry and hydraulic connections based on hydrochemistry (analyses at SANAS accredited laboratory).
- Assessing the structural geology and geometry of the aquifer systems with respect to hydraulic interactions and compartmentalisation
- Compilation of geological, hydrogeological and hydrochemical thematic maps summarising the aquifer system(s), indicating aquifer delineation, groundwater piezometric map, depth to groundwater, groundwater flow directions as well as regional geology.

During the EIA phase a Hydrogeological Impact Assessment will be conducted and the following aspects will be investigated:

- Geochemical assessment of tailings material and formulation of a geochemical conceptual model
- Development of a conceptual hydrogeological model
- Development of a regional numerical groundwater flow model to assist in determining the groundwater steady state flow directions, hydraulic gradient, groundwater flow velocities, seepage potential from waste facilities and mass transport plume migration with time, post-closure pollution plume migration with time, water management alternatives, and best practice mitigation measures.
- Formulation of an impact assessment and risk matrix of proposed activities
- The development of an integrated surface water and groundwater monitoring programme.

Noise

A Noise Impact Assessment was prepared by Enviro-Acoustic Research (EARES) (Appendix 5). The scope of the work was in line with the protocol for specialist assessment for noise impacts outlined in GN320 and entailed:

- A baseline description of the potential receptors and existing ambient noise levels
- Identification, characterisation and determination of noise emissions
- Projected total noise levels and changes in noise levels as a result of the construction, commissioning and operation of the proposed development
- Desired noise levels for the area
- Mapping the proposed development footprint
- Recommending suitable mitigation measures to minimize possible noise emissions during the construction and commissioning phases.

Radiation

A Radiation Technical Memorandum has been prepared for the proposed project (Appendix 7). The memorandum provides historical radiological baseline information pertaining to the current Modder East Operation and legislation relevant to radiation. A Baseline Radiological study will be undertaken by ID Kruger Consulting and AquiSim to determine the baseline radiological condition of the TSF expansion areas and to evaluate the radiological impact on members of the public from the expansion to the TSF. During the EIA phase, the following aspects will be provided:

- A radiological baseline study comprising of the following:
  - Gamma area survey of all the potentially affected areas
  - Environmental radon survey using radon gas monitors
  - Sampling and full spectrum radioanalysis of source material (i.e. tailings material)
  - Sampling and full spectrum radioanalysis of environmental media such as surface water, groundwater, sediments and soil, subject to availability.
- A radiological public safety and impact assessment that evaluates the potential impact during all phases of the project. This assessment is based on a source-pathway-receptor approach.
- An occupational worker safety assessment
- A radiation management plan.

Socio-economic

A Baseline Socio-Economic assessment was undertaken by Prime Resources (Appendix 15). The process involved the identification of receptor communities and key stakeholders, the characterisation of the socio-economic baseline, the identification of potential issues and a preliminary impact assessment. This phase aimed to generate an understanding of the socio-economic context and potential receptor communities in the project area. During the EIA phase, the following aspects will be investigated:

- A review of the findings of the specialist studies that have a bearing on the socio-economic environment, including air quality, community health, radiation, traffic, property valuation, groundwater, and visual impact
- Identifying the key potential social and economic issues associated with all phases of the proposed project
- Assessing and documenting the significance of social impacts associated with the proposed development
- Identifying potential alternatives, as well as mitigation, management and monitoring measures to be included in the EMPr
- Identifying any gaps, limitations and assumptions.

Soil, land use and land capability

The Zimpande Research Collaborative (ZRC) was appointed to provide a Soil, Land Use and Land Capability Assessment (Appendix 9). The objective of this study was to:

- Establish broad baseline conditions and sensitivity of study area
- Classify of the climatic conditions occurring within the study are
- Conduct a soil classification survey within the study area
- Assess the spatial distribution of various soil types within the study area and classify the dominant soil types
- Identify restrictive soil properties on land capability under prevailing conditions
- Identify and assess the potential impacts in relation to the proposed development using pre-defined impact assessment methodology
- Recommend mitigation and management measures for the identified potential impacts.

Terrestrial biodiversity

A Terrestrial Biodiversity Assessment was undertaken by Scientific Terrestrial Services (STS) (Appendix 14) to define the floral and faunal ecology of the study area. The scope of the work was in line with the protocol for specialist assessment for terrestrial biodiversity outlined in GN320 and entailed:

- The identification and description of the baseline conditions of the site including habitat types, communities, and the ecological state thereof, corridors, significant terrestrial landscapes within the proposed TSF footprint, as well as the existing footprints and potential zones of influence
- A description of the terrestrial biodiversity and ecosystems of the site
- A site inspection to identify and consider identify and consider sensitive landscapes such as CBAs and ESAs and determine on impact on these
- Providing inventories of floral and faunal species encountered within the study area
- Identifying potential ecological impacts
- Recommend mitigation and management measures for the identified potential impacts.

Visual

A Visual Impact Assessment (VIA) was compiled by Prime Resources for the proposed project (Appendix 6). The objective of this study was to:

- Characterise the visual landscape of the area
- Identify potential sensitive receptors
- The identify / determine the viewsheds and potential visual impacts
- The assess potential visual impacts using quantitative criteria, such as visibility and exposure, and qualitative criteria such as compatibility and effect on landscape integrity, prior to and after mitigation
- Recommend mitigation and management measures for the identified potential impacts.

Dam Break Analysis

A Dam Break Analysis (DBA) will be undertaken during the EIA Phase and will consider the three TSF paddocks (existing TSF, proposed northern expansion and proposed western expansion). The following aspects will be investigated as part of the DBA:

- Credible failure modes
- Potential zone of influence
- Population at risk
- Potential loss of life
- Environmental impacts.

Civil Aviation

Written comment will be obtained from the South African Civil Aviation Authority (SACAA) confirming the proposed TSF expansion will result in no unacceptable impact on civil aviation installations. Should the comment from the SACAA indicate the need for further assessment, a copy of the assessment report and mitigation measures is to be attached to the compliance statement and incorporated into the EIA report with mitigation and monitoring measures identified included in the EMPr.

Traffic

A Traffic Study will be undertaken during the EIA Phase and will consider the following:

- Review of all available information
- Obtain an understanding of the study area and travel patterns in the region
- Assessment of the road network, including the access onto the external road network and key intersections onto the public road network, public transport usage, and pedestrian desire lines. Record observations regarding road safety conditions, site constraints and the general surface condition of the road network
- Traffic counts on the road network where appropriate.
- Intersection capacity evaluations to assess potential impacts on the surrounding road network, haulage routes and tie-in points between the external and internal road network
- A realistic traffic growth scenario will be applied to all intersections
- Assessment of additional (cumulative) traffic impact during the construction, operation, and decommissioning of the facility
- Evaluate the likely impact on the road network and estimate where road improvements will be likely. Recommendations will also be made on traffic management and/or monitoring.

Property Valuation Study

A property valuation study will be conducted which is expected to include:

- A desktop review of the current and historical property value data for area, and specifically the suburbs of Modder East and Eastvale.
- Determining the key issues affecting property values in the affected suburbs
- Determining the expected impact of the TSF expansion on property values over time.

d) Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives

The environmental aspects have been assessed in terms of the methodology described in Section 10)c)i).

i) Proposed method of assessing duration significance

The Impact Assessment Methodology and rationale as described in Section 10)c)i) will be used to assess the significance of the potential impacts of the project on the surrounding biophysical and social environment.

ii) Stages at which the competent authority will be consulted

The EIAR and EMPr will be made available to the DMRE during the 30-day commenting period for the EIA phase. The EIAR and EMPr will be updated with any comments received and will be submitted to the Competent Authority at the end of the commenting period for consideration.

e) Particulars of the public participation process with regard to the Impact Assessment process that will be conducted

The public participation process will be followed in accordance with the requirements of Chapter 6 of the NEMA EIA Regulations (GNR982 of 2014, as amended).

i) Steps to be taken to notify interested and affected parties

(These steps must include the steps that will be taken to ensure consultation with the affected parties identified in (h) (ii) herein)

The EIA phase public participation process will comprise of the following:

- An EIAR and an EMPr will be compiled and made available for comment, in the public domain at the same locations as the Scoping Report, as well as made available to the relevant State Departments (including the Competent Authority) for a period of 30 calendar days. A Non-technical summary report of the EIA will also be available.
- An SMS, WhatsApp message or email will be sent out to all registered IAPs notifying them of the localities where the EIAR and EMPr can be viewed, and the commenting period. IAPs will be given the opportunity to raise issues and concerns.
- The IAP database and CRR will be updated throughout the EIA public participation process and submitted together with the final EIAR and EMPr to the Competent Authority for consideration after the 30-day commenting period has ended.

ii) Details of the engagement process to be followed

(Describe the process to be undertaken to consult interested and affected parties including public meetings and one on one consultation. NB the affected parties must be specifically consulted regardless of whether or not they attended public meetings and records of such consultation will be required in the EIA at a later stage)

During the EIA phase 30 day public commenting period the following information will be provided to all IAPs identified and registered during the Scoping Phase.

Background Information Document (BID)

The EIA phase BID will provide the following information:

- A brief overview of the project
- An overview of the legislated environmental process
- A summary of the comments received during the Scoping process
- A summary of the impacts and associated ratings (Medium or High) for all phases of the project (operation, decommissioning and closure)
- The availability of the EIAR and EMPr
- The process and timeframe to submit comments.

The BID will be available to registered IAPs, relevant State Departments, and surrounding residents at the commencement of the public consultation process. The EIA phase BID will be distributed via hard copy or email as required.

EIAR and EMPr

The EIAR and EMPr will be made available to all relevant State Departments via email (or hard copy if requested). The reports will be emailed upon request and placed within the public domain on the Prime Resources website (www.resources.co.za). Hard copies of the EIAR and EMPr, as well as a Non-technical summary Report, will also be available at the same locations used during the Scoping Phase. The document will be made available for the 30-day period [as per Regulation 19(1)]. The Non-technical summary report will also be available to registered IAPs.

Interested and affected parties (IAPs) register

The IAP register from the Scoping phase will be maintained and updated accordingly during the 30-day commenting period. Any person responding to the abovementioned notifications during the EIA Phase will be added to the IAP database.

Comments and Response Report (CRR)

The Comments and Responses Report (CRR) from the Scoping phase will be maintained and updated accordingly during 30-day commenting period. The CCR will be submitted to the Competent Authority for consideration in the EIAR after the 30-day commenting period has ended. It will include all comments raised by IAPs including State Departments, and the responses thereto. A summary of the Comments and Responses Report will also be made available.

iii) Description of the information to be provided to Interested and Affected Parties

(Information to be provided must include the initial site plan and sufficient detail of the intended operation and the typical impacts of each activity, to enable them to assess what impact the activities will have on them or on the use of their land)

Scoping phase

Information provided during the Scoping Phase includes:

- A layout plan showing the proposed development area relative to surrounding land uses, infrastructure, and residential areas
- A description of the project components including the scale and extent of activities requesting authorisation
- A description of the baseline environment (with specialist reports included as appendices)
- A preliminary identification of potential impacts of the project (e.g., surface disturbance, dust, noise, etc.)
- A preliminary identification of mitigation measures
- Additional investigations (specialist studies) to be undertaken during the EIA
- Details of the legislated environmental process, including Scoping and EIA phases, and timeframes associated with these
- Details of other legislation to be considered for the project
- Timeframes for review and comment of the Scoping Report (public participation process), including where to obtain copies of the various reports (Background Information Documents, Scoping Report, Non-technical summary of the Scoping Report)
- Contact details of the EAP in order to obtain further information
- A summary of the Comments and Responses Report.

EIA phase

Information to be provided during the EIA Phase includes:

- A layout plan showing the proposed development area relative to surrounding land uses, infrastructure, and residential areas, taking into account any changes since the Scoping Phase
- A description of the project components including the scale and extent of activities requesting authorisation
- A description of the baseline environment
- A summary of the specialist investigations, findings and recommendations (with full specialist studies attached as appendices)
- A detailed assessment of potential impacts of the project (e.g., surface disturbance, dust, noise, etc.)
- A detailed identification of mitigation measures to avoid or minimise the impact
- Monitoring and rehabilitation plans
- Closure objectives
- Comments made by IAPs including State Departments during the Scoping Phase of the project (and responses by the EAP to these comments)
- Timeframes for review and comment on the EIA Report (public participation process), including where to obtain copies of the various reports (Background Information Documents, EIA Report, Non-technical summary of the EIA Report)
- Contact details of the EAP in order to obtain further information
- A summary of the Comments and Responses Report.

f) Description of the tasks that will be undertaken during the Environmental Impact Assessment process

The tasks to be undertaken during the Scoping and EIA phases are presented in Figure 4.

g) Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored

Table 18. Mitigation and management measures and residual impacts

Activity / Attribute	Environmental Component	Potential Impact	Project Phase	Mitigation Measures	Potential Residual Risk
Site preparation and / or construction of surface infrastructure including soil stripping, stockpiling and vegetation removal; operation of the TSF; decommissioning and closure.	Soil	Soil erosion; loss of topsoil; decrease in soil fertility; loss of land capability; soil compaction	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Plan activities (access road, lay down area, etc.), to occur on previously disturbed soil. • Vehicles may only travel on designated / demarcated routes • Implement appropriate topsoil and subsoil stripping and stockpiling procedures where undisturbed soils are present • Implement erosion control measures where required (sandbags, silt fencing, hay bales) • Stripped topsoil should be stored in designated areas • Topsoil removed from the expansion sites should be stored separately from all other stockpiled materials and subsoil • Topsoil should not be stockpiled in large heaps exceeding 2 m • Topsoil to be stripped should be kept to a maximum depth of 300 mm, where possible • Topsoil stockpile must not have slopes exceeding 1:3 • Stockpiled topsoil should ideally only be stored for a maximum of 3 to 5 years • Vegetate the stockpiles using indigenous species • Conserve topsoil and subsoil throughout the operation to ensure it is suitable for rehabilitation • Temporary stockpiles should be protected with suitable geotextiles such as hessian sheeting, silt curtains, sandbags, etc. • Vegetation cover (where it exists) must be removed with the topsoil (to add organic matter and a seed bank to the soils to facilitate rehabilitation). AIPs should be removed prior to the removal of vegetation cover • Re-vegetate areas of bare soil with indigenous grass species as soon as possible • Monitor the entire site for signs of erosion and immediately implement prevention and maintenance measures • Good site drainage must be ensured by means of appropriate stormwater design • A stormwater management plan should be implemented prior to any activities taking place to ensure that surface runoff is minimal and that gulley-formation is avoided • Where possible, construction during the wet season should be avoided • Areas compacted by machinery must be ripped prior to being rehabilitated with topsoil and grass seed • Supply adequate sanitation facilities to all workers and forbid open defecation • Provide training and promote continual environmental awareness amongst operational personnel • Clearance of vegetation should be done in phases to limit surface exposure • Stockpiles should be treated with soil stabilisation methods (addition of organic matter) to reduce soil erosion	Any disturbance to soil can be considered permanent due to the long period required for pedogenesis.

Activity / Attribute	Environmental Component	Potential Impact	Project Phase	Mitigation Measures	Potential Residual Risk
				• Where possible, the "cut and cover" technique should be implemented i.e., stripped soils should immediately be placed onto bare areas ready for rehabilitation, thus avoiding stockpiling • Soils of different forms should be stockpiled separately in order to obtain the highest post-mining land capability • Soil stripping should be done in conjunction with a soil specialist and careful consultation of the pre-mining soil survey is essential • A Soil Stripping, Topsoil Stockpiling and Soil Management Plan should be developed and implemented.	
Site preparation and / or construction of surface infrastructure	Soil and groundwater	Soil and groundwater contamination due to the machinery, vehicles, potential hydrocarbon spills and construction-related activities; change in agricultural potential	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Drip trays and / or lined earth bunds are to be provided where mobile equipment has the potential to drip oil • Repairs of machinery should take place off site or within a demarcated site area • Spill kits should be readily available • Mixing of concrete shall only be done at selected sites on mortar boards or similar structures. Direct mixing of cement and concrete on bare soil must be strictly prohibited • Clean up all spills immediately and ensure spill kits are readily available • Implement spill prevention and emergency response procedure • Good housekeeping practices should be implemented (no dumping of waste in natural areas, provision of waterproof waste bins and skips, etc.) • Machinery and vehicles should be regularly inspected / serviced to decrease the risk of hydrocarbon spills • Avoid chemical spillages by bunding chemical storage facilities and installing impermeable bases at refuelling areas • Equipment should be placed on an impermeable surface and bunded • Bioremediate or appropriately dispose of any chemically contaminated soil • Sufficient drums / containers should be placed on site for the disposal of general waste • Should any major spills of hazardous materials take place, such should be reported in terms of Section 30 of the NEMA • Temporary ablution facilities (chemical toilets) should be provided for construction workers • No effluent or organic-containing solvents should be discharged on any surface.	Potential contamination of soils and groundwater
Site preparation and / or construction of surface infrastructure including vegetation removal	Flora	Loss of indigenous vegetation; spread of alien invasive vegetation; loss of SCC; habitat fragmentation	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• An alien invasive vegetation management programme must be implemented prior to the commencement of any activity to ensure the removal of alien invasive vegetation prior, during and after construction • A 20 m buffer surrounding the footprint areas should be regularly checked for AIP proliferation to prevent spread into surrounding natural areas • Alien invasive vegetation that is removed as part of the alien invasive vegetation management programme may not be placed on bare surfaces and soils • Invasive species removed should be disposed of at a licensed waste facility	Potential loss of floral biodiversity and proliferation of invasive species

Activity / Attribute	Environmental Component	Potential Impact	Project Phase	Mitigation Measures	Potential Residual Risk
				• The destruction and damage of indigenous plants and trees not within the proposed footprint should be avoided • Floral SCC should be demarcated prior to any activities taking place. A walkdown of the footprint area is required by a specialist prior to any activity commencing • A rescue and relocation plan must be drafted and approved by the relevant authorities for all floral SCC that will potentially be impacted by the proposed activities • The identified floral SCC will, at the approval of the relevant authority, be relocated or reinstated at an appropriate habitat or similar environment • Conservation-orientated clauses must be included in contracts for construction personnel, accompanied by penalty clauses for non-compliance • Wood harvesting of any trees or shrubs at the study area or adjacent areas should be prohibited. No collection of indigenous floral species must be allowed by construction or operational personnel • Sensitive areas not earmarked for development should be demarcated • No temporary dump sites should be allowed in areas with natural vegetation • Vehicles should be restricted to travelling only on designated roads • Supply adequate sanitation facilities to all workers and forbid open defecation • Provide training on flora and promote continual environmental awareness amongst operational personnel.	
Site preparation and / or construction of surface infrastructure	Fauna	Death of terrestrial faunal species; habitat degradation	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Any fauna found during construction must be captured for release or relocation to a similar suitable habitat. This should be facilitated by a specialist • Snaring, collection, or killing of any faunal species is prohibited • If possible, construction works should be limited to one area at a time to allow faunal species to temporarily migrate to other areas • Good housekeeping practices should be implemented (no dumping of waste in natural areas, provision of waterproof waste bins and skips, etc.) • Supply adequate sanitation facilities to all workers and forbid open defecation • The design and erection of fences should be done in such a way to allow for the migration of small mammals • Warning signage should be erected in open areas and along transport routes to create awareness of migrating and / or crossing animals • Vehicles may only travel on designated / demarcated routes • If any faunal SCC is encountered, construction should be halted and a registered ecologist should be contacted • If relocation of encountered SCC is required, the relevant provincial and national permits should be obtained from the Department of Forestry, Fisheries and the Environment (DFFE) and Gauteng Department of Agricultural and Rural Development (GDARD) • Activities at the Grassland habitat where no development is proposed should be restricted to prevent the disturbance of SCC habitat	Potential loss of faunal biodiversity

Activity / Attribute	Environmental Component	Potential Impact	Project Phase	Mitigation Measures	Potential Residual Risk
				• Vegetation clearance should be undertaken in the winter months as faunal species will not be breeding • Lighting should be designed to minimise impacts on fauna, especially invertebrates. The use of fluorescent, LED and mercury vapour lighting should be avoided, and sodium vapour (yellow) lights should rather be used wherever possible. • Provide training on fauna and promote continual environmental awareness amongst operational personnel.	
Operational activities associated with wet deposition of TSF slurry on the TSF expansions	Groundwater	Contamination of groundwater	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Measures to prevent spills and contamination detailed above should be implemented • Groundwater monitoring should be conducted at regular periods as per the recommendations of the groundwater specialist • The TSF expansions and RWD must be lined with appropriate HDPE liners to prevent seepage into the groundwater.	Potential contamination of groundwater
Location and construction of surface infrastructure	Geology	Sinkhole formation due to the underlying dolomite	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Recommendations as per the Dolomite Risk Assessment should be adhered to • The final layout of the proposed activities should correspond to the stability zoning as indicated by the geotechnical engineer • Care should be taken during excavations of trenches due to the underlying dolomite. • Some perched water conditions could arise during wet seasons at excavations and de-watering should be overseen under the care of a registered engineer • The standard as stipulated in SANS 10286:1998, which covers slimes dams, tailings dams, rock dumps, slurry ponds, discards and similar deposits, should be adhered to.	Potential harm or loss of human lives
Site preparation and / or construction of surface infrastructure; Operational activities associated with wet deposition of TSF slurry on the TSF expansions	Air quality / pollution	Air pollution as a result of an increase in dust generation from the construction activities, unpaved areas and the TSF	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Regular damping down by means of dust suppression measures (wet down bare soil surfaces, dust suppression vehicles) should be implemented • Surface improvement must be implemented in the form of gravel to cap the road surface of unpaved roads • All unpaved roads must be regularly maintained (using graders) to minimise the generation of dust. Grading is to be avoided during dry windy conditions and limited to affected areas only • The footprint of exposed areas should be limited • Clearance of vegetation should be done in phases to limit surface exposure thereby limiting dust generation • Rehabilitate cleared areas and temporary access roads as soon as they are no longer needed • Implement speed limits on unpaved roads and around the site to ensure minimal dust is created • Air quality monitoring should be undertaken. If dust fallout increases as a result of construction activities, mitigation measures should be implemented more frequently • Daily site inspections by environmental personnel should be conducted to provide an indication on the effectiveness of the dust control measures	Dust generation will not be stopped entirely but can be decreased

Activity / Attribute	Environmental Component	Potential Impact	Project Phase	Mitigation Measures	Potential Residual Risk
				• A Dust Management Plan should be developed and implemented.	
		Air pollution as a result of particulate matter generation from the TSF	Operation; rehabilitation; decommissioning; closure.	• During wet slurry deposition of tailings on the TSF, maintain a pond and associate wet beach on the TSF to minimise fugitive dust emissions • Expand the air quality monitoring network if required • Progressive revegetation of the TSF should take place, commencing with the lower slopes. The sloping face of the TSF should be kept moist with water sprays, covered with topsoil and vegetated. In this way, rehabilitation of the tailings dam will be carried out during the life of the facility and limit dust and particulate matter generation	Decline in ambient air quality
		Air pollution as a result of fires and smoke	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Informal fires and disposal of cigarette butts are strictly prohibited • Heavy machinery should be equipped with fire extinguishers • Fire extinguishers and fire beaters should be readily available at the site • Burning of waste on site should not be permitted • Fire belts should be implemented around the boundaries of the mine • A Fire / Emergency plan should be developed and implemented.	Decline in ambient air quality
		Air pollution due to emissions from heavy machinery	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Machinery and equipment to be used on site must be inspected regularly to ensure no excessive release of fumes.	Decline in ambient air quality
Site preparation and / or construction of surface infrastructure	Cultural heritage / archaeological sites	The destruction of undocumented graves, fossils or artefacts	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Implement a chance finds procedure for archaeological and palaeontological items • The worn-down fence at the existing cemetery should be upgraded • If feasible, access control should be implemented at the fenced off cemetery • A "tools down" / "Chance Find Procedure" (construction to be ceased immediately) protocol should be implemented if potential artefacts, graves, etc. are unearthed • The appropriate specialist and competent authority should be notified when subterranean features are discovered • A Heritage Management Plan should be developed and implemented • All employees and contractors should receive induction that includes an environmental awareness component from a cultural / heritage perspective • General site monitoring conducted by an ECO on a weekly basis during construction and decommissioning.	The permanent destruction of graves, fossils or artefacts (although considered unlikely).
Site preparation and / or construction of	Noise	Increase in ambient noise levels	Pre-construction (planning and design phase); construction;	• Unnecessary idling of equipment and vehicles should be avoided, and they should be switched off when not in use • Implement maintenance of all equipment and vehicles to reduce noise impact • Heavy machinery should be equipped with noise mufflers to dissipate excessive sounds	Minor increase in noise during construction phase.

Activity / Attribute	Environmental Component	Potential Impact	Project Phase	Mitigation Measures	Potential Residual Risk
surface infrastructure			operation; rehabilitation; decommissioning.	• Reduce speed limits on access routes to the site • Activities should be limited to appropriate working hours and days as per the National Building Regulations • All employees and contractors should receive a Health and Safety induction that includes an environmental awareness component from a noise perspective • The Applicant should implement a line of communication with surrounding receptors • A complaints register should be maintained by the Applicant • Implement noise monitoring as necessitated by complaints.	
Site preparation and / or construction of surface infrastructure; Operational activities associated with wet deposition of TSF slurry on the TSF expansions	Visual	Increased visual intrusion and loss of scenic quality	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Concurrent rehabilitation of disturbed areas should take place as soon as works are complete in a disturbed area • Tall trees along the property boundary in the area described in the VIA should not be removed, where possible. Fast-growing indigenous trees should be planted along the property boundaries. • The footprint of the proposed activities should be limited to the final approved layout. • To minimise light pollution at night, lighting should be implemented in such a manner that it does not unnecessarily spill outward onto oncoming traffic or into the neighbouring properties. • Shade cloth must be used to conceal and minimise the visual intrusion of site camps and storage areas. • To limit visual intrusion, the expanded TSF should be fenced off with concrete palisade • Littering at the site must be strictly prohibited • Waste bins and skips should not be located in areas highly visible to neighbouring properties.	The visual intrusion of the additional TSFs will be permanent; however, the implementation of mitigation measures will decrease the degree of intrusion.
Site preparation and / or construction of surface infrastructure; Operational activities associated with wet deposition of TSF slurry on the TSF expansions	Topography	Alteration of topography	Pre-construction (planning and design phase); construction; operation, decommissioning; closure.	• The development footprint of the proposed project should be kept to a minimum • Long-term stockpiling of soil should only occur within specified demarcated areas • Design of the TSF expansions should be undertaken by a registered professional engineer in accordance with prescribed practices and guidelines.	Permanent change in topography and increased visual intrusion.
	Waste management	Pollution and degradation of environmental integrity	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• Burying of any waste including rubble, domestic waste, empty containers, and construction rubble must be strictly prohibited • Construction rubble / waste should be removed to a licensed disposal facility • Temporary waterproof waste storage bins with lids should be provided on site • Waste bins should be emptied regularly by a waste collection company • Waste bins must be easily accessible for waste removal trucks and must not be placed in sensitive areas • Hazardous waste handling should only take place within designated areas (lined and bunded).	Potential pollution of soils and groundwater as well as negative impacts on floral and faunal species.
Installation / rerouting of	Socio-economic	Disruption of services	Pre-construction (planning and design	• The Applicant should obtain approval from the relevant parties regarding the rerouting of powerlines and fibre cables if applicable.	Grievances from

Activity / Attribute	Environmental Component	Potential Impact	Project Phase	Mitigation Measures	Potential Residual Risk
state-owned (Eskom) servitude and fibre cable			phase); construction.	• The surrounding landowners should be informed in advance if any electricity disruptions are required.	surrounding communities.
Site preparation and / or construction of surface infrastructure; Operational activities associated with wet deposition of TSF slurry on the TSF expansions		Nuisance aspects may disturb residents in the surrounding suburbs	Pre-construction (planning and design phase); construction; operation; decommissioning; closure.	• Measures to mitigate noise and dust should be followed, as listed above • Clearly communicate the planned start of the project activities to landowners, residents and other registered IAPs • Establish and communicate to all IAPs a grievance procedure (the Applicant should appoint a representative to engage with the community) • The grievance procedure must be effectively managed throughout the life of the project.	Grievances may be unreasonable and demands unfeasible. Reputational damage and social grievances can impact community perception of the mine.
		Short-term employment opportunities during construction	Pre-construction (planning and design phase); construction	• Local labourers should be prioritised for any short-term employment opportunities created during construction • Take care not to create unrealistic expectations and communicate accurate details (duration of the employment opportunity) to the local communities • Ongoing transparent communication between NKGM and neighbouring communities to ensure issues are dealt with and to manage expectations regarding employment provision from the TSF expansion • Adhere to the approved processes for downscaling and retrenchment in the approved SLP. • NKGM should continue to adhere to their employment commitments in their approved Social and Labour Plan	Employment creation
		Damage to road surfaces, reduced road traffic safety, reduced pedestrian safety	Pre-construction (planning and design phase); construction; operation; decommissioning; closure.	• Introduce speed limit signage and construct speed humps along gravel / unpaved roads as needed • Regular damping down by means of dust suppression measures (wet down bare soil surfaces, dust suppression vehicles) should be implemented • Traffic safety accidents must be documented	Injury to people and animals, dust creation
		Potential influx of people	Pre-construction (planning and design phase); construction; operation;	• Contractors must be encouraged to provide transport for their employees, and to discourage settlement within the Modder East area. • Recruitment (by the mine and any contractors) must not be conducted at the mine gate so as to dissuade job seekers gathering at the mine gate. • Mine security patrols should monitor the perimeters of the TSF thereby providing an increased security presence.	Potential expansion of informal settlements and further strain on

Activity / Attribute	Environmental Component	Potential Impact	Project Phase	Mitigation Measures	Potential Residual Risk
			decommissioning; closure.	• Encourage ongoing open communication between the mine and all stakeholders including residents of informal settlements near the mine as a means to improve relations in an effort to address any problems before there is any social unrest.	existing resources.
		Community health	Pre-construction (planning and design phase); construction; operation; decommissioning; closure.	• Measures to limit impact on ambient air quality and groundwater detailed above should be implemented • A fence should be erected and maintained around the expanded TSF • Speed limits in the gravel access road should be strictly maintained. • The TSF must be managed as per the below listed measures relating to community safety and security.	A decline in community health.
Site preparation and / or construction of surface infrastructure, Operational activities associated with wet deposition of TSF slurry on the TSF expansions; Decommissioning and closure	Community safety and security	Unsafe environment for people and animals Risks associated with TSF failure and potential loss of life and damage to property.	Pre-construction (planning and design phase); construction; operation; rehabilitation; decommissioning; closure.	• The TSF should be designed and operated using best practice and the Code of Practice for Mine Residue (SANS 10286) that include stringent safety precautions to prevent TSF failure • The TSF expansion must be managed as a high hazard facility with all precautions taken to avoid emergency situations • Fence all construction areas and areas where machinery will be operated to ensure that the area is safe for people and animals • Ensure construction activities are consistent with occupational and health safety requirements • Display warning signs to ensure people are aware of the risk of entering dangerous areas • Only skilled / trained workers should be contracted • All entry gates must be closed immediately upon entry / exit • The required Personal Protective Equipment (PPE) should be worn at all times • Workers should be easily identifiable by clothing and ID badges • Unauthorised entry onto the site should not be allowed. Access control measures should be implemented • Fire extinguishers should be available at the site • Security personnel should be appointed • All dangerous areas and excavations should be demarcated to ensure visibility and create awareness • The Mine Health and Safety Act (No. 29 of 1996) and the Occupational Health and Safety Act (No. 85 of 1993) must be adhered to. • The management team must stay abreast of legislative changes and consider the implications to operations as a result of them	Injury to people and animals and damage to property.
Conclusion of construction activities and mine closure	Rehabilitation and landscaping	Ineffective rehabilitation leading to sustained environmental degradation and an unsafe environment	Pre-construction (planning and design phase); construction; rehabilitation;	• Align rehabilitation measures with rehabilitation objectives and repeat rehabilitation actions until objectives are met • Stored topsoil must be used to rehabilitate all bare soil areas after construction activities are concluded • Prior to revegetation, rip all disturbed areas and compacted soils at least 250 mm below to alleviate compaction	Rehabilitation should maximise land use potential; however, some land uses may

Activity / Attribute	Environmental Component	Potential Impact	Project Phase	Mitigation Measures	Potential Residual Risk
		for people and animals	decommissioning; closure.	• Temporary access routes / roads must be suitably rehabilitated • Establish indigenous vegetation (certified weed-free) on bare soil and ensure at least 75% cover. Seed areas with a suitable species mix sourced from reputable suppliers to ensure quality • All equipment, machinery and other items should be removed from site upon completion of the construction activities • Decontaminate and collect waste in storage areas for off-site recycling or disposal • A rehabilitation plan must be developed and implemented.	not be feasibly attained.

12) OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

a) Compliance with the provisions of sections 24(4)(a) and (b) read with sections 24(3)(a) and (7) of the National Environmental Management Act (Act 107 of 1998)

The EIA report must include the: -

i) Impact on the socio-economic conditions of any directly affected person

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an Appendix and confirm that the applicable mitigation is reflected herein)

Directly affected persons

Landowners:

The following property will be affected by the proposed project:

- RE of the Farm Cloverfield 75 IR – Ekurhuleni Metropolitan Municipality
- This property is currently being leased by the mine and a portion of it is being farmed under agreement with the mine.

Adjacent landowners and occupiers:

The following properties are located adjacent to the project area:

Parent Farm and Portion	Owner
Portion 40 of the Farm Modderfontein 76 IR	*No owner information available as per WinDeed supplied by the Deeds Office*
Portion 8 of the Farm Modder East 72 IR	*No property information available as per WinDeed supplied by the Deeds Office*
Portion 4 of the Farm Cloverfield 75 IR	*No property information available as per WinDeed supplied by the Deeds Office*
Portion 54 of the Farm Welgedacht 74 IR	*No property information available as per WinDeed supplied by the Deeds Office*
RE of the Farm Modder East 72 IR	Modderklip Boerdery Pty Ltd
Portion 22 of the Farm Welgedacht 74 IR	A H Du Plessis Landgoed Pty Ltd
Portion 63 of the Farm Welgedacht 74 IR	Transnet Ltd
Portion 5 of the Farm Cloverfield 75 IR	Transnet Ltd
Portion 3 of the Farm Cloverfield 75 IR	Transnet Ltd
Portion 44 of the Farm Geduld 123 IR	Calodex (Pty) Ltd
RE of Portion 57 of the Farm Geduld 123 IR	Transnet Ltd
Portion 207 of the Farm Geduld 123 IR	Calodex (Pty) Ltd
Portion 88 of the Farm Geduld 123 IR	Mun Springs
Portion 117 of the Farm Geduld 123 IR	Eskom Holdings Ltd
RE of Portion 228 of the Farm Geduld 123 IR	Royal Albatross Prop 11 Pty Ltd
Portion 146 of the Farm Modderfontein 76 IR	*No property information available as per WinDeed supplied by the Deeds Office*
Portion 2 of the Farm Cloverfield 75 IR	*No owner information available as per WinDeed supplied by the Deeds Office*

There are residential areas adjacent the proposed TSF expansion (Figure 33). The suburb of Modder East/Eastvale is located directly east of the western TSF expansion. The informal settlement of Skoonplaas is located directly north of the western TSF expansion, and west of the northern expansion. Skoonplaas is located within the mine's surface lease area (RE of the Farm Cloverfield 75 IR).

No resettlement is being considered as part of this proposed development.

Refer to Section 10)c) and Table 16 for a list of the potential impacts associated with the proposed development on landowners and adjacent landowners.

Potential negative impacts on adjacent landowners and occupiers include:

- Visual impact on residents of Modder East and Skoonplaas
- Visual intrusion at night from additional lighting
- Loss of 20 ha of land of moderate to high land capability that is currently cultivated
- Dust and particulate matter may affect the local air quality
- Health impacts (from decreased air quality) for individuals in surrounding communities
- Increased alien vegetation proliferation and edge effects
- Possible in-migration of job seekers into the area resulting in the expansion of existing informal settlements (or the formation of new informal settlements) as well as secondary impacts of in-migration including pressure on existing infrastructure, an increase in crime and social ills
- Ambient noise levels may increase during construction and decommissioning activities
- Deterioration in road pavement quality resulting in unsafe driving conditions
- Cumulative impact of transporting material from NKGM's other operations to Modder East, and associated congestion, deterioration of road condition and road safety impacts from increased numbers of heavy vehicles
- Safety risks to people and animals
- Permanent change in topography
- Potential risk of TSF failure and associated loss / harm to life and damage to property
- Potential reduction in property values
- Potential impact on groundwater quality and quantity in neighbouring boreholes and associated impacts on health and agriculture
- Potential impact on current manufacturing and small businesses. Dust from the TSF may potentially impact the planned Calodex Solar Park immediately south of NKGM. Nuisance factors such as dust and noise could potentially impact small businesses in the adjacent suburbs.

Potential positive impacts on adjacent landowners and occupiers include:

- Continued operation of the existing NKGM processing plant and continued employment for some of the current surface employees due to a delay in closure of the processing plant
- Direct and indirect socio-economic benefits from the generation of employment (wages), taxes and profits from the procurement of goods and services, and the increased spending power of employees.
- Direct and indirect socio-economic benefits from the continued operation of NKGM's processing plant and potentially the commencement of Cons Modder and Holfontein operations.
- Temporary employment opportunities will be available during the construction phase of the project
- The presence of the mine offers some level of security to the local residents, in that illegal mining and potentially other illegal activities are curbed or controlled by mine security.

Land claims

A land claim enquiry was submitted to the Office of the Regional Land Claims Commissioner: Gauteng in June 2022 and no land claims appear on their database in respect of RE of Cloverfield 75 IR. Refer to Appendix 18.

No resettlement is being considered as part of this proposed development.

ii) Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as an Appendix and confirm that the applicable mitigation is reflected herein)

According to the Heritage Impact Assessment (Appendix 10), no sites of archaeological significance were identified within the footprint of the proposed surface infrastructure. A cemetery comprising of several graves was identified approximately 150 m to the east of the proposed northern TSF expansion site. Due to the proximity of the graveyard to the proposed northern TSF site, it is recommended that the worn-down fence be upgraded so that access can be appropriately controlled.

The area is deemed to be a low-risk area for containing heritage resources. There is always a chance that buried artefacts may be unearthed during vegetation clearing and earth-moving activities. The potential impact can be mitigated by implementing a chance finds procedure to prevent damage to buried resources which may be of significance, in the unlikely event that they are unearthed.

b) Other matters required in terms of sections 24(4)(a) and (b) of the Act

(The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub-regulation 22(2)(h), exist. The EAP must attach such motivation as an Appendix)

The EIAR will address the following requirements in terms of sections 24(4)(a) and (b) of the Act:

Table 19. Requirements of Section 24(4)(a) and (b) of NEMA

Section of NEMA	Contents	Description of how the aspect has been addressed thus far and will be further addressed during the EIA
Section 24(4)(a)		
24(4)(a)	Procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment – must ensure, with respect to every application for an environmental authorisation—	Refer to Section 11) for the plan of study for the EIA process.
24(4)(a)(i)	Coordination and cooperation between organs of state in the consideration of assessments where an activity falls under the jurisdiction of more than one organ of state;	The Scoping Report and EIAR will be made available to the relevant organs of state and relevant municipalities including: • Department of Cooperative Governance and Traditional Affairs (COGTA) • Department of Forestry, Fisheries and Environment (DFFE) • Department of Mineral Resources and Energy (DMRE) • Department of Water and Sanitation (DWS) • Eskom • Gauteng Department of Agriculture and Rural Development (GDARD) • Gauteng Department of Community Safety (GDCS) • Gauteng Department of Economic Development (GDED) • Gauteng Department of Roads and Transport (Gautrans) • Gauteng Department of Rural Development and Land Reform (DRDLR) • Provincial Heritage Resources Agency Gauteng (PHRAG) (via SAHRIS) • South African Civil Aviation Authority (SACAA) • The City of Ekurhuleni (CoE) The DMRE remains the Competent Authority (Refer to Section 9).
24(4)(a)(ii)	That the findings and recommendations flowing from an investigation, the general objectives of integrated environmental management laid down in this Act and the principles of environmental management set out in section 2 are considered in any decision made by an organ of state in relation to any proposed policy, programme, process, plan or project;	The findings and recommendations of specialist investigations, and general objectives and the principles of environmental management, will be addressed in the EIAR and EMPr.
24(4)(a)(iii)	That a description of the environment likely to be significantly affected by the proposed activity is contained in such application;	Refer to Section 10)a) for a detailed description of the baseline environment likely to be affected by the project.
24(4)(a)(iv)	Investigation of the potential consequences for impacts on the environment of the activity and assessment of the significance of those potential consequences or impacts; and	Refer to Section 10)c) for an initial identification and assessment of the potential impacts. A detailed impact assessment will form part of the EIAR.

Section of NEMA	Contents	Description of how the aspect has been addressed thus far and will be further addressed during the EIA
24(4)(a)(v)	Public information and participation procedures which provide all interested and affected parties, including all organs of state in all spheres of government that may have jurisdiction over any aspect of the activity, with a reasonable opportunity to participate in those information and participation procedures; and	Refer to Section 9) which details the Scoping phase public participation process. Further public participation will be conducted during the EIA phase. Refer to Section 11).
24(4)(A)	Where environmental impact assessment has been identified as the environmental instrument to be utilised in informing an application for environmental authorisation, subsection (4)(b) is applicable	Environmental impact assessment has been identified as the environmental instrument therefore (4)(b) is applicable.
Section 24(4)(b)		
24(4)(b)	Must include, with respect to every application for an environmental authorisation and where applicable—	
24(4)(b)(i)	Investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity;	Site alternatives were not assessed due to the constraints as discussed in Section 8). The option of not implementing the activity is also assessed in Section 8). The final layouts will be assessed during the EIA phase and based on the outcome, recommendations will be made in terms of layout alternatives or further technological and design alternatives which could be implemented.
24(4)(b)(ii)	Investigation of mitigation measures to keep adverse consequences or impacts to a minimum;	Mitigation measures for potential impacts have been identified during the initial assessment (Section 11)g)). A detailed impact assessment will form part of the EIAR. Refer to Section 11) for the plan of study for the EIA process. Mitigation measures will also be recommended accordingly.
24(4)(b)(iii)	Investigation, assessment and evaluation of the impact of any proposed listed or specified activity on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999), excluding the national estate contemplated in section 3(2)(I)(vi) and (vii) of that Act;	The National Heritage Resources Act has been considered. Refer to Section 4).
24(4)(b)(iv)	Reporting on gaps in knowledge, the adequacy of predictive methods and underlying assumptions, and uncertainties encountered in compiling the required information;	These have already been addressed to some extent in the specialist studies conducted (refer to various appendices). Any material gaps identified during the Scoping phase and public consultation process will be addressed and consolidated in the EIAR.
24(4)(b)(v)	Investigation and formulation of arrangements for the monitoring and management of consequences for or impacts on the environment, and the assessment of the effectiveness of such arrangements after their implementation;	Management and monitoring measures will be specified in the EMPr. Implementation and suitability of the EMPr as per the frequency indicated in the Environmental Authorisation (EA) as per Regulation 34 of the NEMA EIA Regulations, 2014.
24(4)(b)(vi)	Consideration of environmental attributes identified in the compilation of information and maps contemplated in subsection (3); and	Refer to Section 10)a) for maps indicating geographical areas, including the sensitivity, extent, interrelationship and significance of such attributes informed by maps compiled by relevant departments.
24(3)	The Minister, or an MEC with the concurrence of the Minister, may compile information and maps that specify the attributes of the environment in particular geographical areas, including the sensitivity, extent, interrelationship and significance of such attributes which must be considered by every competent authority.	

Section of NEMA	Contents	Description of how the aspect has been addressed thus far and will be further addressed during the EIA
24(4)(b)(vii)	Provision for the adherence to requirements that are prescribed in a specific environmental management Act relevant to the listed or specified activity in question.	Listed activities have been identified and are available in Section 3)a). An Environmental Impact Assessment (EIA) has been identified as the environmental instrument in terms of NEMA. An amendment to the mine's AEL is not required as per NEM:AQA. Permits may be required as per NEM:BA and NFA if SCC are identified. The area does not fall within a protected area as per NEM:PAA. A WUL will be required for proposed project and will be discussed with the DWS during the application process. Refer to Appendix 19 for proof of the pre-application WUL enquiry.

13)UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I, Gené Main, herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties have been correctly recorded in the report.

Signature of the EAP

DATE: 29 November 2022

14)UNDERTAKING REGARDING LEVEL OF AGREEMENT

I, Gené Main, herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP

DATE: 29 November 2022

15)UNDERTAKING UNDER OATH / AFFIRMATION

I, Gené Main, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this Scoping Report is true and correct. Where information has been provided by external / independent specialists, the information received has been assumed as correct and has not been independently verified.

Signature of the EAP

DATE: 29 November 2022

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