



# **ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR CHANGES TO THE BAKUBUNG PLATINUM MINE**

**March 2016**

**SUBMITTED FOR ENVIRONMENTAL AUTHORISATION IN TERMS OF THE  
NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998) AND THE  
NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT (ACT 59 OF 2008) IN  
RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY  
APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES  
DEVELOPMENT ACT (ACT 28 OF 2002) (AS AMENDED)**

**NAME OF APPLICANT: Bakubung Minerals (Pty) Ltd on behalf of  
Wesizwe Platinum Limited**

**TEL NO: (011) 994 4600**

**FAX NO: (011) 994 4601**

**ADDRESS: Wesizwe House, Devcon Park, 9 Autumn Road, Rivonia Ext 3, 2128**

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| <b>Applicant</b>         | Bakubung Platinum (Pty) Ltd on behalf of Wesizwe Platinum Limited   |
| <b>Consultant</b>        | SLR Consulting (Africa) (Pty) Ltd   |
| <b>Project Number</b>    | 710.23001.00007   |
| <b>Project Manager</b>   | Chiara D'Egidio Kotze   |
| <b>Report Author</b>     | Chiara D'Egidio Kotze   |
| <b>Reviewer</b>          | Alex Pheiffer   |
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## **ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR CHANGES TO THE BAKUBUNG PLATINUM MINE**

### **EXECUTIVE SUMMARY**

#### **INTRODUCTION AND PROJECT OVERVIEW**

Wesizwe Platinum Limited (Wesizwe) is the owner of Bakubung Platinum Mine (BPM), currently shaft sinking on the farm Frischgewaagd 96JQ (Portions 3, 4 and 11). The mine is located near Ledig, just south of the Pilanesberg Game Reserve and Sun City in the North West Province. As part of the approved operations two reefs will be mined for Platinum Group Elements - platinum, palladium, rhodium and gold, with copper and nickel as by-products. The project area falls within the Rustenburg and Moses Kotane Local Municipalities of the Bojanala District Municipality. A locality map is provided in Figure 0-1.

In 2008, BPM conducted an Environmental Impact Assessment (EIA) process for the development of the BPM. This was conducted by TWP Environmental Services (TWP). The BPM received Environmental Authorisation in 2009, in terms of both the National Environmental Management Act (Act 107 of 1998) (NEMA) and Mineral and Petroleum Resources Development Act (Act 28 of 2002) (MPRDA). A Water Use Licence (WUL) was issued in terms of the National Water Act (Act 36 of 1998) (NWA) in 2010.

In 2014 a Basic Assessment process was conducted for the development of mine housing on site. Authorisation for Phase 1 of the Gabonewe Estate mine housing was received in 2015. The Basic assessment was conducted by AB Enviro-Consult T/A (ABEC).

While construction at the BPM has commenced, not all facilities have yet been constructed. Mining has not yet commenced. BPM is now proposing to make several changes to the approved mine. The changes are required in order to cater for an increase in ore processing capacity, optimise the layout and operation of the mine as well as additional support infrastructure.

The following changes are proposed to the BPM:

- Increased capacity of approved facilities including:
  - the concentrator plant and related mine product and tailings storage
  - the storage of dangerous goods
  - the sewage treatment plant
- Inclusion of waste rock as aggregate into the mining right
- Re-alignment/ re-positioning of approved infrastructure within the Shaft and Concentrator Complexes
  - Repositioning of the approved waste rock dump and sewage treatment plant
- Repositioning of the Crusher Circuit to aboveground

- Reconfiguration of storm water and process water management on site
- Storage of waste materials in the repositioned salvage yard
  - Establishment of new/additional infrastructure including:
  - Stream crossing along the approved access road
  - Track and perimeter roads
  - Phase 1a housing of the Gabonewe Residential Estate
  - Tailings and return water pipelines
  - Erosion control measures along a section of the ephemeral tributary of the Elands River
  - A bridge connecting Phase 1 and Phase 1a housing
  - Refurbishing a security bridge north of Phase 1 and Phase 1a housing
  - Magalies Water Board pipeline river crossing
  - Ventilation shafts and raise boreholes
  - Generators
  - A solar plant
  - Water storage reservoirs
  - Topsoil stockpiles

SLR Consulting (Africa) (Pty) Ltd (SLR), an independent firm of environmental consultants, has been appointed by Bakubung Minerals (Pty) Ltd to undertake the environmental assessment process for the proposed project.

#### **LEGAL FRAMEWORK**

Prior to the commencement of the proposed project, environmental authorisation is required from various government departments. These include:

- Environmental authorisation from the Department of Mineral Resources (DMR) in terms of NEMA including a waste management license in terms of the National Environmental Management: Waste Act No. 59 of 2008 (NEM:WA). The proposed project incorporates several listed environmental and waste activities. The EIA regulations being followed for this project are Regulation 982 of 04 December 2014.
- Environmental authorisation and amended mining right from the DMR in terms of Section 102 of the MPRDA. The approved environmental management programme (EMP) needs to be updated to include the proposed changes. In addition, the mining right needs to be amended for the inclusion of waste rock as aggregate.
- A water use license from the Department of Water and Sanitation (DWS) in terms of the NWA for approved operations and project changes. The additional water uses in terms of Section 21 of the NWA triggered by the project changes include 21(b) (clean water storage), 21(c) (impeding or diverting flow of water in a watercourse), 21(i) (altering beds or banks of a watercourse), and 21(g) (storage of water that contains waste). Exemption in terms of GN 704 is also required.

- A single scoping report for the mining right amendment, the EMP amendment and the environmental authorisation in terms of NEMA and NEM:WA for the proposed project was submitted to the DMR for review. A single EIA and EMP report has been compiled and will be submitted to the DMR for decision making on the amendment of the mining right, the EMP amendment and the environmental authorisation in terms of NEMA and NEM:WA.

#### **STAKEHOLDER ENGAGEMENT**

The stakeholder engagement process commenced prior to scoping and has continued throughout the environmental assessment process. As part of this process, authorities and interested and affected parties (IAPs) were notified of the project, given the opportunity to attend public meetings, submit questions and comments to the project team, and review the background information document, scoping report and now the EIA and EMP report. All comments that have been submitted to date by the authorities and IAPs have been included and addressed in the EIA and EMP report. Further comments arising from the EIA and EMP report review process will be handled in a similar manner.

#### **IMPACTS AND MITIGATION MEASURES**

This report provides an assessment of the potential impacts of the proposed project and provides measures to prevent or mitigate the impacts.

The potential impacts associated with the proposed project activities and infrastructure can be categorised into those that have low, medium and high significance in the unmitigated scenario. All three categories of impacts require a measure of mitigation which, if successfully implemented will reduce the significance of the impacts and the related residual risk.

The table below provides a summary of the potential impacts in no particular order of importance. The table is a cumulative consideration of the approved mine impacts and the impacts as a result of this project. In the significance columns, L = Low, M = Medium and H = High.

**Table A – Potential impact summary**

| Aspect                   | Potential impact   | Impact discussion  | Significance without mitigation | Significance with mitigation                             |
|--------------------------|--|--|---------------------------------|--|
| Geology                  | Additional mineral resource  | Mineral resources have economic value. If they are utilised/sold, their economic value is realised. If they are disposed of, their economic potential can be lost depending on the disposal method. Waste rock currently produced on site from shaft sinking, can be sold as aggregate provided the mineral rights are in place. Mitigation measures for realising the economic benefit is through maximising the sale of waste rock.  | M                               | H+   |
| Topography               | Hazardous excavations, surface subsidence and infrastructure that can be harmful to people and animals | Hazardous excavations and infrastructure include all excavations, structures or land forms into or off which third parties and animals can fall and be harmed. Included in this category are facilities that can fail such as the tailings storage facility.<br>Related mitigation measures focus on infrastructure safety through appropriate design and implementation as well as on limiting access to third parties and animals.   | H                               | M (plant area)<br>M-H (TSF area)                         |
| Soil and land capability | Loss of soil resources and land capability through contamination                                       | Soil is a valuable resource that supports a variety of ecological functions and is the key to re-establishing post closure land capability. Soil and related land capability can be compromised through pollution and through physical disturbance through compaction, removal and erosion. Related mitigation measures focus on pollution prevention, maintenance of infrastructure, implementing soil conservation procedures and limiting site clearance to what is absolutely necessary.   | H                               | L<br>M-H (pipeline)                                      |
|                          | Loss of soil resources and land capability through physical disturbance                                |  | H                               | M-H  |
| Biodiversity             | Physical destruction of biodiversity   | Areas of high ecological sensitivity are functioning biodiversity areas with species diversity and associated intrinsic value. The project area also falls within a critical biodiversity area. In addition, some of these areas host protected species. The linking areas have value because of the role they play in allowing the migration or movement of flora and fauna between the areas, which is a key function for the broader ecosystem. This project (as well as the approved operations) has the potential to impact on biodiversity through both physical destruction (mainly during infrastructure establishment) and general disturbance during all project phases. Related mitigation measures focus on limiting the project footprint area, shifting infrastructure layouts and operation controls to limit on-going disturbance. | H                               | M- H (habitat / vegetation type)<br>M (other components) |
|                          | General disturbance of biodiversity  |  | H                               | M  |
| Surface water            | Contamination of surface water resources   | The proposed project has the potential to contaminate surface water resources, which could include the Elands River, the Sandspruit and ephemeral channels, drainage lines and wetlands. Related mitigation measures focus on pollution prevention, monitoring and risk based response to identified pollution occurrences.  | H                               | L  |
|                          | Alteration of surface  | Rainfall and surface water run-off are collected in all areas that have been designed with   | H                               | M  |

| Aspect      | Potential impact                       | Impact discussion   | Significance without mitigation | Significance with mitigation                                 |
|-------------|--|---|---------------------------------|--|
|             | water drainage patterns                | water containment infrastructure. The collected run-off will therefore be lost to the catchment and can result in the alteration of drainage patterns and reduction to downstream surface water users. Infrastructure positioning can also alter natural flow patterns of watercourses. Related mitigation measures focus on minimising the footprint areas associated with containing rainfall and runoff and diverting clean run-off away from the project site as well as shifting infrastructure layouts to avoid drainage areas where possible.  |                                 |  |
| Groundwater | Contamination of groundwater resources | The nature of the mining projects is such that they present a potential for the contamination of groundwater resources that in some cases may be used by third parties for domestic and livestock watering purposes. This project and the approved project have the potential to impact groundwater resources at both the plant and tailings storage facility area. Related mitigation measures focus on pollution prevention, appropriate design and implementation, monitoring and risk based response to identified contamination occurrences.   | H                               | L  |
|             | Changes in groundwater levels          | The main activities influencing ground water levels are dewatering to ensure safe operations. This has not changed from the approved operations and thus the approved mine impact assessment and management measures for changes in groundwater levels are considered to still be applicable. Mitigation measures focused on measures to decrease the ingress of water, re-use of water and continuous monitoring.  | No change from approved project | No change from approved project                              |
| Air         | Air pollution                          | The main contaminants associated with the approved project and this project include: inhalable particulate matter less than 10 and 2.5 microns in size (PM10 and PM2.5) and larger total suspended particulates (TSP) that relate to dust fallout. To a lower extent there are underground and plant vehicle exhaust emissions. At certain concentrations, contaminants can have health and/or nuisance impacts. Potential receptors include Sun City, the Bakubung Bush Lodge, the Pilanesberg National Park, animals and plants, residential areas including Phatsima, Ledig and Chaneng as well as the future Gabonewe Estate. Related mitigation measures focus on pollution prevention and minimisation, monitoring and risk based response to identified pollution occurrences. | H                               | M (PM <sub>10</sub> & Dustfall)<br>M -L (PM <sub>2.5</sub> ) |
| Noise       | Noise Pollution                        | Noise pollution (disturbance and nuisance) will have different impacts on different receptors because some are very sensitive to noise and others are not. The distance of receptors from noise generating activities also influences the impact. Potential receptor sites include the surrounding land owners/land users such as the future Gabonewe Estate, Bakubung Bush Lodge and Sun City, settlements including Phatsima, Ledig and Chaneng and schools/crèches in the Lekwadi, Letlhabile and Serosecha sectors of Ledig. Mitigation focuses on decreasing noise pollution, monitoring and risk based response to noise pollution occurrences.   | M                               | M (No change from approved project)                          |
| Traffic     | Road and traffic                       | The proposed project will result in an increase in traffic volumes along the R565 and R556,   | M                               | H+   |

| Aspect   | Potential impact  | Impact discussion  | Significance without mitigation | Significance with mitigation    |
|--|---|--|---------------------------------|---------------------------------|
|  | disturbance   | which impacts the road's level of service. Potential traffic safety risks include pedestrian accidents and vehicle accidents. Related mitigation measures focus on road and pedestrian safety and consideration of changes to road infrastructure to improve traffic conditions.   |                                 |                                 |
| Visual   | Negative visual impacts   | Visual impacts are assessed by considering changes to the visual landscape. The approved operations would have already changed the landscape and this project can contribute to the changes. The project area is surrounded by varying landscapes including other mining activities as well as the Pilanesberg Mountain range. Related mitigation measures focus on landscaping interventions particularly during the decommissioning and rehabilitation stages.   | H                               | M                               |
| Heritage, cultural and paleontological resources | Destruction of heritage, cultural and paleontological resources | Various cultural and heritage resources have been identified in the project area. No potential for paleontological resources exist. The approved operations and this project have the potential to damage low to high significance heritage/cultural resources. Related mitigation measures focus on avoidance and preservation as a first priority and relocation where avoidance is not possible.  | H                               | L-M                             |
| Socio-economic                                   | Economic impact   | Bakubung's contribution to the local, regional and national economy is positive and significant. Part of this contribution is through employment, procurement, investment, tax contributions, and foreign exchange earnings. The objective of the related mitigation measures is to enhance the positive economic impacts and limit the negative economic impacts. Part of this objective is to enhance the contribution to the local economy in particular.   | H+                              | H+                              |
|  | Inward migration impacts  | Mines tend to bring with them an expectation of employment in all project phases prior to closure. This expectation can lead to the influx of job seekers to an area, which could cause: an increase of people moving through the area, pressure on the capacity of existing communities and possibly also the development of informal settlements. In general, both increased movement of people into an area and informal settlements are associated with lower standards of living, which can promote disease, crime and a general threat to the safety and security of an area. Linked to this influx of people is the potential inability of receiving areas to supply basic services such as water, food, electricity, health, education and sanitation. Related mitigation measures focus on cooperation with the local municipal authorities, traditional authorities, skills development, employment, procurement and social development. | H                               | M                               |
|  | Tourism   | The components of this project are not expected to contribute significantly to changes in tourism as changes are mainly within project footprints and are related to the already approved operations. The approved mine impact assessment for tourism is thus considered to still be applicable. Mitigation measures focus on managing environmental impacts identified and effective communication with applicable stakeholders.  | No change from approved project | No change from approved project |



| Aspect   | Potential impact  | Impact discussion  | Significance without mitigation | Significance with mitigation    |
|----------|---|--|---------------------------------|---------------------------------|
| Land use | Change in land use  | Approved project footprints are in areas approved for mining activities. The pipeline will be located on communal grazing land. Other land uses within and surrounding the proposed project area includes: mining, conservation, agriculture, residential areas and infrastructure (existing road network and power and communication lines, cemeteries, railway, and an airport). These land uses may be negatively impacted by one or more of the above mentioned environmental and social impacts. Related mitigation measures focus on mitigation of potential environmental and socio-economic impacts described above and measures to promote the continuation of surrounding land uses. | H                               | M-L<br>L (at closure)           |
| Blasting | Blasting impacts (fly rock, air blasts and ground vibrations) | No additional areas will be mined for this project and there are no changes to approved underground mining activities. Therefore no additional blasting and vibration impacts were identified. The mine impact assessment and management measures in the approved project are still applicable to the approved operations. Blasting was considered in the emissions inventory of the Air Quality Impact Assessment due to the addition of ventilation shafts. Mitigation focuses on monitoring and communication with applicable stakeholders.   | No change from approved project | No change from approved project |

**ENVIRONMENTAL STATEMENT**

The assessment of the proposed project presents the potential for significant negative impacts to occur (in the unmitigated scenario in particular) on the bio-physical, cultural and socio-economic environments both on the project sites and in the surrounding area. With mitigation these potential impacts can be prevented or reduced to acceptable levels.

It follows that provided the EMP is effectively implemented there is no environmental, social or economic reason why the project should not proceed.

# ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR CHANGES TO THE BAKUBUNG PLATINUM MINE

## CONTENTS

|  |            |
|--|------------|
| <b>EXECUTIVE SUMMARY .....</b>   | <b>III</b> |
| <b>INTRODUCTION.....</b>   | <b>X</b>   |
| <b>PART A – SCOPE OF ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT .....</b> | <b>I</b>   |
| <b>1 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONERS .....</b>                 | <b>1-1</b> |
| 1.1 DETAILS OF THE EAP WHO PREPARED THE REPORT .....                                 | 1-1        |
| 1.2 EXPERTISE OF THE EAP .....   | 1-1        |
| <b>2 PROJECT DESCRIPTION .....</b>   | <b>2-1</b> |
| <b>3 LOCALITY MAP .....</b>  | <b>3-1</b> |
| <b>4 DESCRIPTION OF THE SCOPE OF THE PROPOSED ACTIVITY .....</b>                     | <b>4-2</b> |
| 4.1 OVERVIEW OF THE PROJECT .....  | 4-2        |
| 4.2 SPECIFIED LISTED ACTIVITIES.....   | 4-3        |
| 4.3 DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN.....                              | 4-13       |
| 4.3.1 SURFACE INFRASTRUCTURE.....  | 4-13       |
| 4.3.2 SITE PREPARATION AND CONSTRUCTION FACILITIES .....                             | 4-16       |
| 4.3.3 EARTHWORKS .....   | 4-16       |
| 4.3.4 CIVIL WORKS.....   | 4-16       |
| 4.3.5 MINING AND PROCESSING.....   | 4-17       |
| 4.3.5.1 MINERALS TO BE MINED .....   | 4-17       |
| 4.3.5.2 CRUSHING CIRCUIT .....   | 4-17       |
| 4.3.5.3 CONCENTRATOR AND PRODUCT STOCKPILES.....                                     | 4-18       |
| 4.3.5.4 VENTILATION SHAFTS.....  | 4-18       |
| 4.3.6 WASTE ROCK MANAGEMENT .....  | 4-18       |
| 4.3.7 TAILINGS MANAGEMENT .....  | 4-19       |
| 4.3.8 WATER SUPPLY AND USE .....   | 4-22       |
| 4.3.8.1 POTABLE WATER .....  | 4-22       |
| 4.3.8.2 MINE WATER SUPPLY SYSTEM.....  | 4-22       |
| 4.3.8.3 PROCESS WATER SUPPLY SYSTEM .....  | 4-23       |
| 4.3.9 POWER SUPPLY AND USE.....  | 4-23       |
| 4.3.10 PROCESS AND STORM WATER MANAGEMENT.....                                       | 4-23       |
| 4.3.11 GENERAL AND HAZARDOUS WASTE MANAGEMENT.....                                   | 4-26       |
| 4.3.12 SEWAGE SLUDGE MANAGEMENT .....  | 4-26       |
| 4.3.13 TRANSPORT SYSTEMS .....   | 4-26       |
| 4.3.14 SITE SUPPORT SERVICES .....   | 4-27       |
| 4.3.15 HOUSING AND EMPLOYMENT.....   | 4-27       |
| 4.3.16 DECOMMISSIONING AND CLOSURE.....  | 4-27       |
| <b>5 POLICY AND LEGISLATIVE CONTEXT.....</b>   | <b>5-1</b> |
| <b>6 NEED AND DESIRABILITY OF THE PROPOSED PROJECT .....</b>                         | <b>6-1</b> |
| 6.1 ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES .....            | 6-1        |
| 6.2 PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT .....                      | 6-3        |

## **7 MOTIVATION FOR THE PREFERRED DEVELOPMENT FOOTPRINT ON THE SITE INCLUDING THE PROCESS FOLLOWED TO DEFINE THE PREFERRED DEVELOPMENT ALTERNATIVES ..... 7-1**

|          |   |            |
|----------|---|------------|
| 7.1      | DETAILS OF THE DEVELOPMENT FOOTPRINT CONSIDERED .....   | 7-1        |
| 7.1.1    | PROPERTY OR LOCALITY .....  | 7-1        |
| 7.1.2    | TYPE OF ACTIVITY ALTERNATIVE .....  | 7-6        |
| 7.1.3    | DESIGN OR LAYOUT .....  | 7-6        |
| 7.1.4    | TECHNOLOGY .....  | 7-6        |
| 7.1.5    | OPERATIONAL ALTERNATIVES.....   | 7-6        |
| 7.1.6    | THE “NO-GO” ALTERNATIVE.....  | 7-6        |
| 7.2      | DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED .....  | 7-7        |
| 7.2.1    | IDENTIFICATION OF INTERESTED AND AFFECTED PARTIES .....   | 7-7        |
| 7.2.2    | NOTIFICATION OF LANDOWNERS, LAWFUL OCCUPIERS AND IAPs .....   | 7-8        |
| 7.2.3    | NOTIFICATION OF AUTHORITIES .....   | 7-8        |
| 7.2.4    | PUBLIC OPEN DAYS AND AUTHORITY MEETINGS .....   | 7-10       |
| 7.2.5    | PUBLIC REVIEW OF DRAFT SCOPING REPORT.....  | 7-10       |
| 7.2.6    | AUTHORITY REVIEW OF DRAFT SCOPING REPORT.....   | 7-10       |
| 7.2.7    | PUBLIC REVIEW OF FINAL SCOPING REPORT .....   | 7-10       |
| 7.2.8    | AUTHORITY REVIEW OF FINAL SCOPING REPORT .....  | 7-11       |
| 7.2.9    | PUBLIC REVIEW OF DRAFT EIA REPORT .....   | 7-11       |
| 7.2.10   | AUTHORITY REVIEW OF DRAFT EIA REPORT .....  | 7-11       |
| 7.3      | SUMMARY OF ISSUES RAISED BY IAPs.....   | 7-12       |
| 7.4      | ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE PROJECT AND ALTERNATIVES .....   | 7-26       |
| 7.4.1    | BASELINE ENVIRONMENT AFFECTED BY THE PROPOSED ACTIVITY.....   | 7-26       |
| 7.4.1.1  | TOPOGRAPHY .....  | 7-26       |
| 7.4.1.2  | GEOLOGY.....  | 7-27       |
| 7.4.1.3  | CLIMATE.....  | 7-29       |
| 7.4.1.4  | SOILS AND LAND CAPABILITY.....  | 7-35       |
| 7.4.1.5  | BIODIVERSITY .....  | 7-48       |
| 7.4.1.6  | HYDROLOGY.....  | 7-89       |
| 7.4.1.7  | GEOHYDROLOGY.....   | 7-100      |
| 7.4.1.8  | AIR QUALITY.....  | 7-110      |
| 7.4.1.9  | NOISE .....   | 7-114      |
| 7.4.1.10 | VISUAL ASPECTS .....  | 7-119      |
| 7.4.1.11 | HERITAGE/CULTURAL AND PALEONTOLOGICAL RESOURCES.....  | 7-121      |
| 7.4.1.12 | ROAD AND TRAFFIC CONDITIONS .....   | 7-126      |
| 7.4.1.13 | SOCIO-ECONOMIC .....  | 7-131      |
| 7.4.1.14 | CURRENT LAND USES.....  | 7-134      |
| 7.5      | ENVIRONMENTAL IMPACTS AND RISKS OF THE ALTERNATIVES .....   | 7-139      |
| 7.6      | METHODOLOGY USED IN DETERMINING THE SIGNIFICANCE OF ENVIRONMENTAL IMPACTS .....   | 7-147      |
| 7.7      | POSITIVE AND NEGATIVE IMPACTS IN TERMS OF SITE LAYOUT ALTERNATIVES.....   | 7-148      |
| 7.8      | POSSIBLE MITIGATION MEASURES THAT COULD BE APPLIED AND THE LEVEL OF RESIDUAL RISK .....   | 7-156      |
| 7.9      | MOTIVATION WHERE NO ALTERNATIVE SITES WERE CONSIDERED.....  | 7-160      |
| 7.10     | STATEMENT MOTIVATING THE PREFERRED ALTERNATIVE.....   | 7-160      |
| 7.10.1   | SITE LAYOUT ALTERNATIVES .....  | 7-160      |
| <b>8</b> | <b>FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS AND RISKS THE ACTIVITY WILL IMPOSE ON THE PREFERRED SITE THROUGH THE LIFE OF THE ACTIVITY.....</b> | <b>8-1</b> |
| 8.1      | DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY IMPACTS .....   | 8-1        |

|           |   |             |
|-----------|---|-------------|
| 8.2       | DESCRIPTION OF THE PROCESS UNDERTAKEN TO ASSESS AND RANK THE IMPACTS AND RISKS .....  | 8-1         |
| 8.3       | A DESCRIPTION OF THE ENVIRONMENTAL IMPACTS AND RISKS IDENTIFIED DURING THE ENVIRONMENTAL ASSESSMENT PROCESS .....   | 8-1         |
| 8.4       | ASSESSMENT OF THE SIGNIFICANCE OF EACH IMPACT AND RISK AND AN INDICATION OF THE EXTENT OF TO WHICH THE ISSUE AND RISK CAN BE AVOIDED OR ADDRESSED BY THE ADOPTION OF MITIGATION MEASURES..... | 8-5         |
| <b>9</b>  | <b>ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK.....</b>   | <b>9-1</b>  |
| <b>10</b> | <b>SUMMARY OF SPECIALIST REPORT FINDINGS.....</b>   | <b>10-1</b> |
| <b>11</b> | <b>ENVIRONMENTAL IMPACT STATEMENT.....</b>  | <b>11-1</b> |
| 11.1.1    | SUMMARY OF KEY FINDINGS OF THE EIA .....  | 11-1        |
| 11.1.2    | FINAL SITE MAP .....  | 11-2        |
| 11.1.3    | SUMMARY OF THE POSITIVE AND NEGATIVE IMPLICATIONS AND RISKS OF THE PROPOSED ACTIVITY AND IDENTIFIED ALTERNATIVES.....   | 11-2        |
| <b>12</b> | <b>IMPACT MANAGEMENT OBJECTIVES AND OUTCOMES FOR INCLUSION IN THE EMPR ....</b>   | <b>12-1</b> |
| 12.1      | PROPOSED MANAGEMENT OBJECTIVES AND OUTCOMES FOR ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS .....  | 12-1        |
| 12.1.1    | IMPACTS THAT REQUIRE MONITORING PROGRAMMES.....   | 12-2        |
| 12.1.2    | ACTIVITIES AND INFRASTRUCTURE.....  | 12-2        |
| 12.1.3    | MANAGEMENT ACTIONS .....  | 12-3        |
| 12.1.4    | ROLES AND RESPONSIBILITIES.....   | 12-3        |
| <b>13</b> | <b>FINAL PROPOSED ALTERNATIVES .....</b>  | <b>13-1</b> |
| <b>14</b> | <b>ASPECTS FOR INCLUSION AS CONDITIONS OF THE AUTHORISATION .....</b>   | <b>14-1</b> |
| <b>15</b> | <b>ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE .....</b>   | <b>15-1</b> |
| 15.1      | ENVIRONMENTAL ASSESSMENT LIMIT.....   | 15-1        |
| 15.2      | PREDICTIVE MODELS IN GENERAL.....   | 15-1        |
| 15.3      | CLOSURE COST ESTIMATE .....   | 15-1        |
| 15.4      | FAUNA.....  | 15-1        |
| 15.5      | AIR QUALITY .....   | 15-2        |
| 15.6      | GROUNDWATER NUMERICAL MODEL .....   | 15-3        |
| 15.7      | AQUATIC ECOLOGY .....   | 15-3        |
| 15.8      | FLORA.....  | 15-4        |
| 15.9      | HERITAGE.....   | 15-5        |
| 15.10     | SURFACE WATER .....   | 15-6        |
| 15.11     | NOISE .....   | 15-6        |
| 15.12     | SOCIO-ECONOMIC.....   | 15-6        |
| 15.13     | SOIL, LAND CAPABILITY AND LAND USE.....   | 15-7        |
| 15.14     | ROAD AND TRAFFIC DISTURBANCE .....  | 15-7        |
| 15.15     | WATERCOURSE DELINEATION.....  | 15-9        |
| 15.16     | GENERAL.....  | 15-9        |
| <b>16</b> | <b>REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED.....</b>   | <b>16-1</b> |
| 16.1.1    | REASONS WHY THE ACTIVITY SHOULD BE AUTHORIZED OR NOT .....  | 16-1        |
| 16.1.2    | CONDITIONS THAT MUST BE INCLUDED IN THE AUTHORISATION .....   | 16-1        |
| 16.1.2.1  | SPECIFIC CONDITIONS FOR INCLUSION IN THE EMPR .....   | 16-1        |
| 16.1.2.2  | REHABILITATION REQUIREMENTS .....   | 16-1        |

|   |   |             |
|---|---|-------------|
| <b>17</b>   | <b>PERIOD FOR WHICH AUTHORISATION IS REQUIRED.....</b>  | <b>17-1</b> |
| <b>18</b>   | <b>UNDERTAKING .....</b>  | <b>18-1</b> |
| <b>19</b>   | <b>FINANCIAL PROVISION.....</b>   | <b>19-1</b> |
| 19.1.1  | METHOD TO DERIVE THE AMOUNT TO MANAGE AND REHABILITATE THE ENVIRONMENT.....   | 19-1        |
| 19.1.2  | CONFIRM THAT THE AMOUNT CAN BE PROVIDED FOR FROM OPERATING EXPENDITURE .....  | 19-2        |
| <b>20</b>   | <b>DEVIATIONS FROM SCOPING REPORT AND APPROVED PLAN OF STUDY .....</b>  | <b>20-1</b> |
| 20.1.1  | DEVIATION FROM THE METHODOLOGY USED IN DETERMINING THE SIGNIFICANCE OF POTENTIAL ENVIRONMENTAL IMPACTS AND RISKS..... | 20-1        |
| 20.1.2  | MOTIVATIONS FOR DEVIATION .....   | 20-1        |
| <b>21</b>   | <b>SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY.....</b>  | <b>21-1</b> |
| 21.1.1  | IMPACT ON THE SOCIO-ECONOMIC CONDITIONS OF ANY DIRECTLY AFFECTED PERSON .....   | 21-1        |
| 21.1.2  | IMPACT ON ANY NATIONAL ESTATE REFERRED TO IN SECTION 3(2) OF THE NATIONAL HERITAGE RESOURCES ACT.....                 | 21-1        |
| <b>22</b>   | <b>OTHER MATTERS REQUIRED IN TERMS OF SECTIONS 24(4)(A) AND (B) OF THE ACT .....</b>                                  | <b>22-1</b> |
| <b>PART B – ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT .....</b> |   | <b>II</b>   |
| <b>23</b>   | <b>DETAILS OF THE EAP .....</b>   | <b>23-1</b> |
| <b>24</b>   | <b>DESCRIPTION OF THE ASPECTS OF THE ACTIVITY .....</b>   | <b>24-1</b> |
| <b>25</b>   | <b>COMPOSITE MAP .....</b>  | <b>25-1</b> |
| <b>26</b>   | <b>DESCRIPTION OF THE IMPACT MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS.....</b>                           | <b>26-1</b> |
| 26.1  | DETERMINATION OF CLOSURE OBJECTIVES.....  | 26-1        |
| 26.2  | THE PROCESS FOR MANAGING ENVIRONMENTAL DAMAGE AS A RESULT OF UNDERTAKING THE ACTIVITY.....                            | 26-1        |
| 26.3  | POTENTIAL RISK OF ACID MINE DRAINAGE .....  | 26-1        |
| 26.4  | STEPS TAKEN TO INVESTIGATE, ASSESS AND EVALUATE THE IMPACT OF ACID MINE DRAINAGE .....                                | 26-1        |
| 26.5  | ENGINEERING OR MINE DESIGN SOLUTIONS TO AVOID OR REMEDY ACID MINE DRAINAGE.....                                       | 26-1        |
| 26.6  | MEASURES IN PLACE TO REMEDY RESIDUAL OR CUMULATIVE IMPACT FROM ACID MINE DRAINAGE .....                               | 26-1        |
| 26.7  | VOLUMES AND RATE OF WATER USE FOR MINING .....  | 26-2        |
| 26.8  | HAS A WATER USE LICENCE BEEN APPLIED FOR.....   | 26-3        |
| 26.9  | IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES.....   | 26-4        |
| <b>27</b>   | <b>IMPACT MANAGEMENT OUTCOMES.....</b>  | <b>27-1</b> |
| <b>28</b>   | <b>IMPACT MANAGEMENT ACTIONS.....</b>   | <b>28-1</b> |
| <b>29</b>   | <b>FINANCIAL PROVISION.....</b>   | <b>29-1</b> |
| 29.1  | DETERMINATION OF THE AMOUNT OF THE FINANCIAL PROVISION .....  | 29-1        |
| 29.1.1  | DESCRIPTION OF THE CLOSURE OBJECTIVES AND THE ALIGNMENT WITH THE BASELINE ENVIRONMENT.....                            | 29-1        |
| 29.1.2  | CONFIRMATION THAT THE CLOSURE OBJECTIVES HAVE BEEN CONSULTED WITH LANDOWNERS AND IAPs.....                            | 29-2        |
| 29.1.3  | REHABILITATION PLAN.....  | 29-2        |
| 29.1.4  | COMPATIBILITY OF THE REHABILITATION PLAN WITH THE CLOSURE OBJECTIVES .....  | 29-5        |
| 29.1.5  | CALCULATE AND STATE THE QUANTUM OF THE FINANCIAL PROVISION.....   | 29-5        |
| <b>30</b>   | <b>MECHANISMS FOR MONITORING COMPLIANCE AND PERFORMANCE AGAINST THE EMP.....</b>                                      | <b>30-1</b> |
| 30.1  | FREQUENCY OF PERFORMANCE ASSESSMENT REPORT .....  | 30-8        |
| <b>31</b>   | <b>ENVIRONMENTAL AWARENESS PLAN .....</b>   | <b>31-1</b> |
| 31.1  | MANNER IN WHICH APPLICANT INTENDS TO INFORM EMPLOYEES OF THE ENVIRONMENTAL RISKS .....                                | 31-1        |
| 31.1.1  | ENVIRONMENTAL POLICY.....   | 31-1        |
| 31.1.2  | STEPS TO ACHIEVE THE ENVIRONMENTAL POLICY OBJECTIVES.....   | 31-2        |
| 31.1.3  | TRAINING OBJECTIVES OF THE ENVIRONMENTAL AWARENESS PLAN .....   | 31-3        |

|           |  |             |
|-----------|--|-------------|
| 31.1.3.1  | GENERAL CONTENTS OF THE ENVIRONMENTAL AWARENESS PLAN.....                        | 31-4        |
| 31.2      | MANNER IN WHICH RISKS WILL BE DEALT WITH TO AVOID POLLUTION OR DEGRADATION ..... | 31-5        |
| 31.2.1    | ON-GOING MONITORING AND MANAGEMENT MEASURES.....                                 | 31-5        |
| 31.2.2    | PROCEDURES IN CASE OF ENVIRONMENTAL EMERGENCIES.....                             | 31-5        |
| 31.2.2.1  | GENERAL EMERGENCY PROCEDURE .....  | 31-5        |
| 31.2.2.2  | IDENTIFICATION OF EMERGENCY SITUATIONS .....                                     | 31-7        |
| 31.2.3    | TECHNICAL, MANAGEMENT AND FINANCIAL OPTIONS .....                                | 31-7        |
| <b>32</b> | <b>SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY.....</b>             | <b>32-1</b> |
| <b>33</b> | <b>UNDERTAKING .....</b>   | <b>33-1</b> |
| <b>34</b> | <b>REFERENCES .....</b>  | <b>34-1</b> |

## LIST OF FIGURES

|              |  |       |
|--------------|--|-------|
| FIGURE 0.1:  | LOCAL SETTING .....  | XI    |
| FIGURE 0.2:  | REGIONAL SETTING.....  | XII   |
| FIGURE 4-1:  | LAYOUT OF THE PROJECT INFRASTRUCTURE.....  | 4-15  |
| FIGURE 4-2:  | STORM WATER MANAGEMENT PLAN.....   | 4-25  |
| FIGURE 7-1:  | ALTERNATIVE TAILINGS PIPELINE ROUTES (NORTHERN ROUTE (PINK), CENTRAL ROUTE (RED) AND SOUTHERN ROUTE (GREEN)) (NOTE THAT ROUTE OPTION 3 IS NOT FEASIBLE)..... | 7-5   |
| FIGURE 7-2:  | PERIOD, DAY- AND NIGHT-TIME WIND ROSES (AIRSHED, 2016).....  | 7-32  |
| FIGURE 7-3:  | SOIL MAP OF THE PLANT AREA (INFORMATION SOURCED REHAB GREEN, 2007).....  | 7-40  |
| FIGURE 7-4:  | SOIL MAP OF THE TSF AREA (INFORMATION SOURCED REHAB GREEN, 2007).....  | 7-41  |
| FIGURE 7-5:  | SOIL MAP OF THE TSF PIPELINE CORRIDOR (DE CASTRO AND BRITS, 2016D) .....   | 7-42  |
| FIGURE 7-6:  | LAND CAPABILITY OF THE PLANT AREA (INFORMATION SOURCED REHAB GREEN, 2007)...   | 7-45  |
| FIGURE 7-7:  | LAND CAPABILITY OF THE TSF AREA (INFORMATION SOURCED FROM REHAB GREEN, 2007)   | 7-46  |
| FIGURE 7-8:  | LAND CAPABILITY OF THE PIPELINE (DE CASTRO AND BRITS, 2016D) .....   | 7-47  |
| FIGURE 7-9:  | NATIONAL BIODIVERSITY PRIORITY AREAS ACCORDING TO THE MINING BIODIVERSITY GUIDELINES (SANBI, 2015) .....   | 7-52  |
| FIGURE 7-10: | DISTRIBUTION OF VEGETATION TYPE IN THE PLANT AREA (DE CASTRO AND BRITS, 2016A)   | 7-53  |
| FIGURE 7-11: | DISTRIBUTION OF VEGETATION TYPE ALONG THE PIPELINE CORRIDOR AND IN THE TSF AREA (DE CASTRO AND BRITS, 2016A).....  | 7-54  |
| FIGURE 7-12: | WATRCOURSES WITHIN THE PROJECT AREA (DE CASTRO AND BRITS, 2016B) .....   | 7-55  |
| FIGURE 7-13: | CBAS IN THE PROJECT AREA (DE CASTRO AND BRITS, 2016A) .....  | 7-57  |
| FIGURE 7-14: | SENSITIVITY MAP FOR THE PLANT AREA (DE CASTRO AND BRITS, 2016A) .....  | 7-71  |
| FIGURE 7-15: | SENSITIVITY MAP FOR THE TSF AREA AND THE PIPELINE CORRIDOR (DE CASTRO AND BRITS, 2016A).....   | 7-72  |
| FIGURE 7-16: | DELINEATED WATERCOURSES AT THE PROJECT AREA (DE CASTRO AND BRITS, 2016B).  | 7-83  |
| FIGURE 7-17: | AQUATIC SAMPLING SITES INVESTIGATED WITHIN THE STUDY AREA (SAS, 2015). .....   | 7-87  |
| FIGURE 7-18: | SUB-CATCHMENTS .....   | 7-91  |
| FIGURE 7-19: | SURFACE AND GROUNDWATER SAMPLING LOCATIONS.....  | 7-99  |
| FIGURE 7-20: | GROUNDWATER HYDROGRAPH (SLR, 2016B) .....  | 7-103 |
| FIGURE 7-21: | BOREHOLES (TWP, 2008).....   | 7-105 |
| FIGURE 7-22: | BOREHOLE LOCATIONS (TWP, 2008).....  | 7-106 |
| FIGURE 7-23: | AIR QUALITY MONITORING POINTS AROUND BAKUBUNG MINE (AIRSHED, 2016) .....   | 7-113 |
| FIGURE 7-24: | NOISE SURVEY SITES (JKA, 2016) .....   | 7-117 |

|  |       |
|--|-------|
| FIGURE 7-25 NOISE SENSITIVE RECEPTORS (JKA, 2016) .....                              | 7-118 |
| FIGURE 7-26: EXISTING INTERSECTION SHOWING ACCESS POINTS AND ROADS (WSP, 2016) ..... | 7-128 |
| FIGURE 7-27: SCHEMATIC DIAGRAM OF THE EXISTING INTERSECTION (WSP, 2016) .....        | 7-129 |
| FIGURE 7-28: SCHEMATIC DIAGRAM OF THE ADDITIONAL APPROACH LANE (WSP, 2016) .....     | 7-130 |
| FIGURE 7-29: LAND USE MAP .....  | 7-138 |
| FIGURE 7-30: SITE LAYOUT ALTERNATIVES .....  | 7-155 |

## LIST OF TABLES

|  |             |
|--|-------------|
| TABLE 1.1: DETAILS OF THE EAPS .....   | 1-1         |
| TABLE 2.1: DESCRIPTION OF THE PROPERTY .....   | 2-1         |
| TABLE 4.1: ESTIMATED PROJECT TIMELINES .....   | 4-3         |
| TABLE 4.2: LIST OF ACTIVITIES/INFRASTRUCTURE ASSOCIATED WITH THE PROPOSED PROJECT .....                                  | 4-4         |
| TABLE 4.3: DESCRIPTION OF THE LISTED ACTIVITIES APPLIED FOR AS PART OF THE PROPOSED PROJECT .....                        | 4-9         |
| TABLE 4.4: DESIGN PRINCIPLES FOR THE TAILINGS COMPLEX .....  | 4-20        |
| TABLE 4.5: TAILINGS COMPLEX SAFETY CLASSIFICATION .....  | 4-21        |
| TABLE 5.1: LEGAL FRAMEWORK .....   | 5-1         |
| TABLE 5.2: EIA REPORT REQUIREMENTS .....   | 5-2         |
| TABLE 7.1: SUMMARY OF ISSUES RAISED BY IAPS AND REGULATORY AUTHORITIES .....   | 7-13        |
| TABLE 7.2: DEPTH BELOW THE SURFACE OF MERENSKY AND UG2 REEFS AT THE BPM MINING AREA (TWP, 2008) .....                    | 7-28        |
| TABLE 7.3: MONTHLY RAINFALL IN MM (MEASURED DATA, MAY 2014 TO OCTOBER 2015) (AIRSHED, 2016) 7-30                         |             |
| TABLE 7.4: MINIMUM, MAXIMUM AND AVERAGE TEMPERATURES (MEASURED DATA, OCTOBER 2014 TO OCTOBER 2015) (AIRSHED, 2016) ..... | 7-31        |
| TABLE 7.5: SOIL FORMS AND ASSOCIATED LAND CAPABILITIES IN THE PLANT AREA (REHAB GREEN, 2007) .....                       | 7-37        |
| TABLE 7.6: SOIL FORMS AND ASSOCIATED LAND CAPABILITIES IN THE TSF AREA (REHAB GREEN, 2007) 7-38                          |             |
| TABLE 7.7: SOIL FORMS AND ASSOCIATED LAND CAPABILITIES IN THE PIPELINE AREA (DE CASTRO AND BRITS, 2016D) .....           | 7-38        |
| TABLE 7.8: AREA COMPRISED BY EACH SOIL FORM FOR THE PIPELINE ROUTE ( DE CASTRO AND BRITS, 2016D) .....                   | 7-39        |
| TABLE 7.9 HABITAT TYPES IDENTIFIED AT THE PLANT AREA (DE CASTRO AND BRITS, 2016A) .....                                  | 7-60        |
| TABLE 7.10: HABITAT TYPES IDENTIFIED AT THE TSF AREA (DE CASTRO AND BRITS, 2016A) .....                                  | 7-64        |
| TABLE 7.11: HABITAT TYPES IDENTIFIED ALONG THE PIPELINE CORRIDOR (DE CASTRO AND BRITS, 2016A) .....                      | 7-68        |
| TABLE 7.12: SPECIES OF CONSERVATION CONCERN AND THEIR PROBABILITY OF OCCURRENCE (DE CASTRO AND BRITS, 2016A) .....       | 7-73        |
| TABLE 7.13: POTENTIALLY OCCURRING MAMMALS IN THE PROJECT AREA (DE CASTRO AND BRITS, 2016C) .....                         | 7-75        |
| TABLE 7.14: BIRD SPECIES CONFIRMED TO OCCUR IN THE PROJECT AREA (DE CASTRO AND BRITS, 2016C) .....                       | 7-76        |
| TABLE 7.15: POTENTIALLY OCCURRING BIRDS IN THE PROJECT AREA (DE CASTRO AND BRITS, 2016C) ... 7-78                        |             |
| TABLE 7.16: REPTILES AND AMPHIBIANS RECORDED ON SITE (DE CASTRO AND BRITS, 2016C) .....                                  | 7-79        |
| <b>TABLE 7.17: ARTHROPOD SPECIES RECORDED ON SITE (GOLDER, 2007) .....</b>   | <b>7-79</b> |
| <b>TABLE 7.18: WATERCOURSES DELINEATED WITHIN THE PROJECT AREA (DE CASTRO AND BRITS, 2016B) .....</b>                    | <b>7-81</b> |
| TABLE 7.19: AQUATIC MACRO-INVERTEBRATES (SAS, 2015) .....  | 7-84        |



|   |              |
|---|--------------|
| TABLE 7.20: EXPECTED FISH ASSEMBLAGES FOR THE ELANDS RIVER (GOLDER, 2007) .....   | 7-86         |
| TABLE 7.21: MEAN ANNUAL RUNOFF FOR RELEVANT SUB-CATCHMENT AREAS NEAR THE PROJECT AREA (PRISTINE CONDITIONS) (TWP, 2008) .....                 | 7-90         |
| <b>TABLE 7.22: NORMAL DRY WEATHER FLOW FOR THE RELEVANT SUB-CATCHMENT AREAS NEAR THE PROJECT AREA (PRISTINE CONDITIONS) (TWP, 2008) .....</b> | <b>7-92</b>  |
| <b>TABLE 7.23: FLOOD PEAK ESTIMATES FOR THE ELANDS RIVER ACCORDING TO THE UG METHOD (TWP, 2008).....</b>                                      | <b>7-92</b>  |
| TABLE 7.24: PRE-MINING SURFACE WATER QUALITY (FEBRUARY, 2008) (TWP, 2008) .....   | 7-95         |
| TABLE 7.25: BASELINE GROUNDWATER QUALITY (TWP, 2008).....   | 7-108        |
| TABLE 7.26: MEASURED NOISE LEVELS IN THE BPM STUDY AREA (JKA, 2016).....  | 7-114        |
| <b>TABLE 7.27: EXISTING NOISE CLIMATE ADJACENT TO THE MAIN ROADS NEAR THE BAKUBUNG MINE (JKA, 2016) .....</b>                                 | <b>7-115</b> |
| TABLE 7.28: HERITAGE RESOURCES IDENTIFIED AT BAKUBUNG MINE (PGS, 2016).....   | 7-122        |
| TABLE 7.29: AVERAGE TRAFFIC VOLUMES ALONG THE R565 (WSP, 2016) .....  | 7-127        |
| <b>TABLE 7.30: PEAK TRAFFIC VOLUMES FOR THE 565 AND ACCESS INTERSECTION AND THE R565 AND R556 INTERSECTION (WSP, 2016) .....</b>              | <b>7-127</b> |
| TABLE 7.31: AGE COMPOSITION OF THE PROJECT AREA .....   | 7-132        |
| TABLE 7.32: HOUSEHOLD ACCESS TO BASIC INFRASTRUCTURE AND SERVICES .....   | 7-132        |
| TABLE 7.33: SURFACE RIGHTS OF PROPERTIES AFFECTED BY THE PROPOSED PROJECT.....  | 7-135        |
| TABLE 7.34: LIST OF IMPACTS IDENTIFIED FOR THE PROPOSED PROJECT INCLUDING ALTERNATIVES.....   | 7-140        |
| TABLE 7.35: CRITERIA FOR ASSESSING IMPACTS .....  | 7-147        |
| TABLE 7.36: POSITIVE AND NEGATIVE IMPACTS ASSOCIATED WITH SITE LAYOUT ALTERNATIVES.....   | 7-151        |
| TABLE 7.37: POSSIBLE MITIGATION MEASURES AND ANTICIPATED LEVEL OF RESIDUAL RISK.....  | 7-156        |
| TABLE 8.1: LIST OF POTENTIAL IMPACTS AS THEY RELATE TO PROJECT ACTIONS / ACTIVITIES / PROCESSES.....  | 8-1          |
| TABLE 9.1: ASSESSMENT OF SIGNIFICANT IMPACTS AND RISKS.....   | 9-2          |
| TABLE 10.1: SUMMARY OF SPECIALIST REPORTS.....  | 10-1         |
| TABLE 11.1: SUMMARY OF POTENTIAL IMPACTS .....  | 11-1         |
| TABLE 12.1: ENVIRONMENTAL OBJECTIVES AND OUTCOMES.....  | 12-1         |
| TABLE 19.1: ESTIMATED COSTS FOR IMPLEMENTING TECHNICAL AND MANAGEMENT OPTIONS.....  | 19-1         |
| TABLE 26.1: MEASURES TO REHABILITATE THE ENVIRONMENT AFFECTED BY THE LISTED ACTIVITIES  | 26-4         |
| TABLE 27.1: DESCRIPTION OF IMPACT MANAGEMENT OUTCOMES.....  | 27-1         |
| TABLE 28.1: DESCRIPTION OF IMPACT MANAGEMENT ACTIONS .....  | 28-1         |
| TABLE 28.2: DESCRIPTION OF IMPACT MANAGEMENT ACTIONS FOR THE HOUSING (ADDITIONAL MEASURES).....   | 28-12        |
| TABLE 28.3: WASTE MANAGEMENT PROCEDURES FOR GENERAL AND HAZARDOUS WASTE .....   | 28-13        |
| TABLE 28.4: SOIL MANAGEMENT PRINCIPLES.....   | 28-14        |
| TABLE 29.1: SPECIES TO BE SUSTAINED OR PROPAGATED ON SITE.....  | 29-4         |
| TABLE 29.2: SPECIES TO BE SUSTAINED OR PROPAGATED ON THE TSF.....   | 29-4         |
| TABLE 29.3: FINANCIAL PROVISION (WORLEY PARSONS, 2016).....   | 29-5         |
| TABLE 30.1: MONITORING OF COMPLIANCE AND PERFORMANCE IN TERMS OF EMPR .....   | 30-1         |
| TABLE 31.1: EMERGENCY RESPONSE PROCEDURES.....  | 31-8         |

## LIST OF APPENDICES

|   |   |
|---|---|
| APPENDIX A: PROOF OF EAP QUALIFICATIONS ..... | A |
| APPENDIX B: CURRICULUM VITAE OF EAP .....     | B |
| APPENDIX C: LOCAL AND REGIONAL SETTING .....  | C |

|  |   |
|--|---|
| APPENDIX D: SITE LAYOUT .....  | D |
| APPENDIX E: STAKEHOLDER ENGAGEMENT DOCUMENTS.....                                | E |
| APPENDIX F: IMPACT RATING FOR EACH POTENTIAL IMPACT .....                        | F |
| APPENDIX G: COMPOSITE MAP .....  | G |
| APPENDIX H: GROUNDWATER IMPACT ASSESSMENT REPORT .....                           | H |
| APPENDIX I: WATERCOURSE IMPACT ASSESSMENT REPORT .....                           | I |
| APPENDIX J: SOILS AND LAND CAPABILITY IMPACT ASSESSMENT REPORT .....             | J |
| APPENDIX K: VEGETATION IMPACT ASSESSMENT REPORT .....                            | K |
| APPENDIX L: FAUNAL IMPACT ASSESSMENT REPORT .....                                | L |
| APPENDIX M: AQUATIC ECOLOGY IMPACT ASSESSMENT REPORT .....                       | M |
| APPENDIX N: NOISE IMPACT ASSESSMENT REPORT .....                                 | N |
| APPENDIX O: TRAFFIC IMPACT ASSESSMENT REPORT .....                               | O |
| APPENDIX P: SOCIO-ECONOMIC IMPACT ASSESSMENT .....                               | P |
| APPENDIX Q: HERITAGE/CULTURAL AND PALEONTOLOGICAL IMPACT ASSESSMENT REPORT ..... | Q |
| APPENDIX R: AIR QUALITY IMPACT ASSESSMENT .....                                  | R |
| APPENDIX S: CLOSURE COST ASSESSMENT .....  | S |
| APPENDIX T: 2014 HOUSING EMP .....   | T |
| APPENDIX U: TSF DESIGN REPORT .....  | U |

## ACRONYMS AND ABBREVIATIONS

| Acronyms / Abbreviations | Definition   |
|--------------------------|--|
| ~                        | approximately  |
| BID                      | Background information document  |
| CBA                      | Critical biodiversity areas  |
| dBA                      | A-weighted decibel   |
| DEA                      | Department of Environmental Affairs                                    |
| DMR                      | Department of Mineral Resources  |
| DWS                      | Department of Water and Sanitation                                     |
| EA                       | Environmental Authorisations   |
| EAP                      | Environmental Assessment Practitioner                                  |
| EIA                      | Environmental impact assessment  |
| EMP(r)                   | Environmental management programme (report)                            |
| GN R                     | General Notice (Regulation)  |
| Ha                       | Hectares   |
| IWWMP                    | Integrated Water and Waste Management Plan                             |
| IAPs                     | Interested and/or affected parties                                     |
| JKA                      | Jongens Keet Associates  |
| Km                       | Kilometres   |
| LOM                      | Life of mine   |
| m                        | Meters   |
| mamsl                    | Metres above mean sea level  |
| mm                       | Millimetres  |
| MR                       | Mining Right   |
| MPRDA                    | Mineral and Petroleum Resources Development Act, 2002                  |
| NEMAQA                   | National Environmental Management: Air Quality Act, 2004               |
| NEMBA                    | National Environmental Management: Biodiversity Act, 2004              |
| NEM:WA                   | National Environmental Management: Waste Management Act, 2008          |
| NEMA                     | National Environmental Management Act, 1998                            |
| (N)FEPA                  | (National) Freshwater Ecosystem Priority Areas                         |
| NHRA                     | National Heritage Resources Act, 1999                                  |
| NO <sub>2</sub>          | Nitrogen dioxide   |
| NPAES                    | National Protected Area Expansion Strategy                             |
| NWA                      | National Water Act, 1998   |
| NW READ                  | North West Department of Rural, Environment & Agricultural Development |
| PGE / PGM                | Platinum Group Elements / Metals                                       |
| PM <sub>10</sub>         | Particulate matter less than 10 micron diameter                        |
| SACNSP                   | South African Council for Natural Scientific Professionals             |
| SAHRA                    | South African Heritage Resources Agency                                |
| SANBI                    | South African National Biodiversity Institute                          |
| SANS                     | South African National Standards                                       |
| SAR                      | Southern access road   |
| SLR                      | SLR Consulting (Africa) (Pty) Ltd                                      |
| SO <sub>2</sub>          | Sulphur dioxide  |
| TSF                      | Tailings Storage Facility  |
| TSP                      | Total suspended particles  |
| WML                      | Waste Management Licence   |
| WRD                      | Waste Rock Dump  |
| WUL(A)                   | Water Use License (Application)  |

## **ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR CHANGES TO THE BAKUBUNG PLATINUM MINE**

### **INTRODUCTION**

#### **INTRODUCTION TO THE PROPOSED PROJECT**

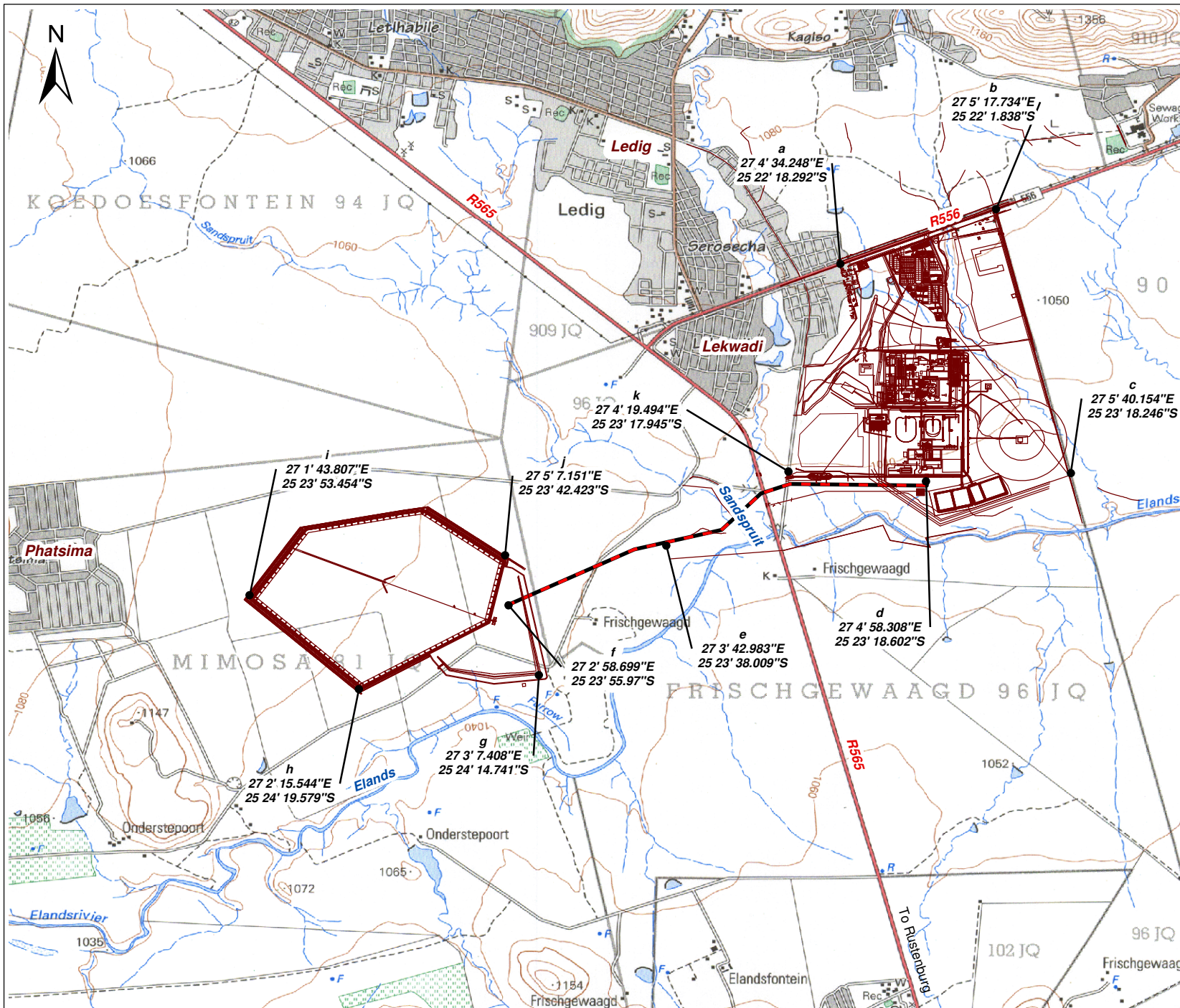
Wesizwe Platinum Limited (Wesizwe) is the owner of Bakubung Platinum Mine (BPM), currently shaft sinking on the farm Frischgewaagd 96JQ (Portions 3, 4 and 11). Bakubung Minerals (Pty) Ltd holds the mining right for BPM. The mine is located near Ledig, 2km south of the Pilanesberg Game Reserve and Sun City in the North West Province (Figure 0.1). Two reefs will be mined for Platinum Group Elements - platinum, palladium, rhodium and gold, with copper and nickel as by-products. The mine falls within the Rustenburg and Moses Kotane Local Municipalities of the Bojanala District Municipality Figure 0.2.

In 2008, BPM conducted an Environmental Impact Assessment (EIA) process for the development of the BPM. The mine received Environmental Authorisation in 2009, in terms of both the National Environmental Management Act (No. 107 of 1998) (NEMA) and Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA). A Water Use Licence (WUL) was issued in terms of the National Water Act (No 36 of 1998) (NWA) in 2010.

In 2014 a Basic Assessment process was conducted for the development of mine housing on site. Authorisation for Phase 1 of the Gabonewe Estate mine housing was received in 2015. The Basic assessment was conducted by AB Enviro-Consult T/A (ABEC).

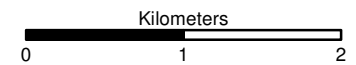
While construction at the mine has commenced, not all facilities have yet been constructed. Mining has not yet commenced. BPM is now proposing to make several changes to the approved mine following refinement of the mine plan and layout. The changes are required in order to cater for an increase in ore processing capacity, as well as additional support infrastructure.

SLR Consulting (Africa) (Pty) Ltd (SLR), an independent firm of environmental consultants, has been appointed by Bakubung Platinum (Pty) Ltd to undertake the environmental assessment process for the proposed project.



**Legend**

- Mine Layout
- Proposed Pipeline
- Main Roads
- Secondary Roads
- Other Access Roads
- Power Line
- Rivers and Streams
- 20m Contour Lines
- Cultivated Areas
- Built-up Areas



Scale: 1:48 000 @ A4  
SA Grid WGS84

**BAKUBUNG PLATINUM  
MINE (PTY) LTD**

**Figure 0.1**

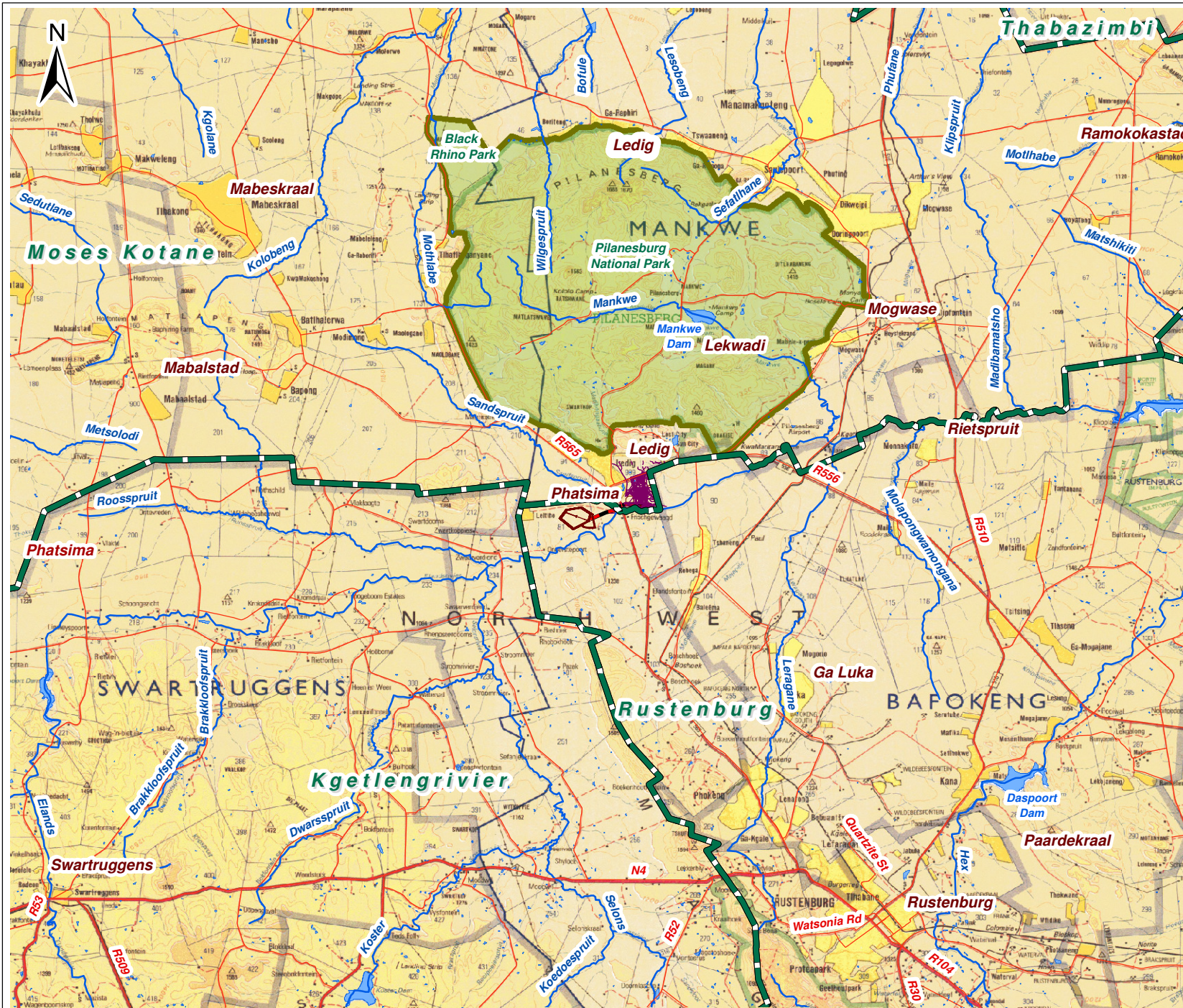
**Local Setting**









SLR Consulting (Africa) (Pty) Ltd  
P O Box 1596, Cramerview, 2060, South Africa  
Tel: +27 (11) 467-0945 Fax: +27 (11) 467-0978

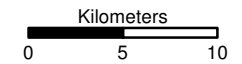
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March 2016



**Legend**

-  Mine Layout
-  Proposed Pipeline
-  Roads
-  Perennial Rivers
-  Dams
-  Local Municipalities



Scale: 1:400 000 @ A4  
SA Grid WGS84

BAKUBUNG PLATINUM  
MINE (PTY) LTD

**Figure 0.2**

**Regional Setting**



SLR Consulting (Africa) (Pty) Ltd  
P O Box 1596, Cramerview, 2060, South Africa  
Tel: +27 (11) 467-0945 Fax: +27 (11) 467-0978

**LEGAL FRAMEWORK**

Prior to the commencement of the proposed project, environmental authorisation is required from various government departments. These include:

- Environmental authorisation from the Department of Mineral Resources (DMR) in terms of NEMA including a waste management license in terms of the National Environmental Management: Waste Act No. 59 of 2008 (NEM:WA). The proposed project incorporates several listed environmental and waste activities. An application was submitted by SLR to the DMR on 30 September 2015. The applicable list of activities is provided in Section 4.2. The EIA regulations being followed for this project are Regulation 982 of 04 December 2014.
- Environmental authorisation and amended mining right from the DMR in terms of Section 102 of the MPRDA. The approved environmental management programme (EMP) needs to be updated to include the proposed changes. The application for the EMP amendment was submitted on the 13 November 2015. In addition, the mining right needs to be amended for the inclusion of waste rock to be sold as aggregate. It has been agreed with the DMR, that the mining right amendment application, as well as an updated mine works programme, that includes waste rock will be submitted once the DMR have processed the pending application of the current mine works.
- A water use license from the Department of Water and Sanitation (DWS) in terms of the NWA for approved operations and project changes. The additional water uses in terms of Section 21 of the NWA triggered by the project changes include 21(b) (clean water storage), 21(c) (impeding or diverting flow of water in a watercourse), 21(i) (altering beds or banks of a watercourse), and 21(g) (storage of water that contains waste). Exemption in terms of GN 704 is also required.
- A single scoping report for the mining right amendment, the EMP amendment and the environmental authorisation in terms of NEMA and NEM:WA for the proposed project was submitted to the DMR for review. A single EIA and EMP report has been compiled and will be submitted to the DMR for decision making on the amendment of the mining right, the EMP amendment and the environmental authorisation in terms of NEMA and NEM:WA

**OTHER APPROVALS / PERMITS**

Other approvals/permits needed for the proposed project are listed below. In this regard, there are other approvals that are required prior to construction and/or commissioning of the mining and related activities. This list does not cover occupational health and safety legislation requirements.

- Prior to removing or damaging any protected plant species, the necessary permits will be obtained from the Department of Agriculture Forestry and Fisheries in terms of the National Forests Act, 84 of 1998.
- The Tailings Storage Facility at BPM is a dam with a safety risk. This will need to be registered with the DWS as a dam with a safety risk in terms of the NWA.
- Prior to the destruction or relocation of heritage resources, permits will need to be obtained from the South African Heritage Resources Agency (SAHRA).

### **EIA AND EMP PHASE OBJECTIVES**

The objectives of the environmental assessment process are as follows:

- The identification of policies and legislation that are relevant to the proposed project
- To describe the need and desirability of the proposed project
- To describe the proposed project including alternatives that are being considered
- To provide an assessment of the environmental and social impacts taking into account all project alternatives
- To identify measures to avoid, manage or mitigate identified impacts including the residual risks that need to be managed and monitored



# **PART A – SCOPE OF ASSESSMENT AND ENVIRONMENTAL IMPACT ASSESSMENT REPORT**

## 1 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONERS

### 1.1 DETAILS OF THE EAP WHO PREPARED THE REPORT

The details of the environmental assessment practitioners (EAPs) that were involved in the preparation of this scoping report are provided in Table 1.1 below.

**TABLE 1.1:DETAILS OF THE EAPS**

| Details                  | Project manager and author   | Reviewer   |
|--------------------------|--|--|
| Name of the practitioner | Chiara D'Egidio Kotze  | Alex Pheiffer  |
| Tel No.:                 | 011 467 0945   | 011 467 0945   |
| Fax No.:                 | 011 467 0978   | 011 467 0978   |
| E-mail address           | <a href="mailto:ckotze@slrconsulting.com">ckotze@slrconsulting.com</a> | <a href="mailto:apheiffer@slrconsulting.com">apheiffer@slrconsulting.com</a> |

Neither SLR nor any of the specialists involved in the environmental assessment process have any interest in the project other than fair payment for consulting services rendered as part of the environmental assessment process.

### 1.2 EXPERTISE OF THE EAP

Alex Pheiffer has a Masters' Degree in Environmental Management with over 14 years of relevant experience in the assessment of impacts associated with mining operations. Alex Pheiffer is registered as a professional natural scientist (Environmental management) with the South African Council for Natural Scientific Professions (SACNSP). Chiara D'Egidio Kotze has a Masters' Degree in Ecology, Environment and Conservation and has 4 years' experience. Alex Pheiffer and Chiara D'Egidio Kotze have been involved in several impact assessments for large scale mining developments in Southern Africa. Curriculum Vitae are attached in Appendix B.

## 2 PROJECT DESCRIPTION

A description of the property on which the proposed project is located is provided in Table 2.1.

**TABLE 2.1: DESCRIPTION OF THE PROPERTY**

|   |  |
|---|--|
| <b>Farm Name</b>  | Remaining extent and portions 1, 3, 4, 11 of the farm Frischgewaagd 96 JQ;<br>The remainder of the farm Mimosa 81JQ.   |
| <b>Application area (Ha)</b>                                | TSF and return water dam: 166 ha on remainder of Mimosa 81JQ<br>Plant area, pipeline and housing: 331.4 ha on RE, PTN 1, 3, 4, 11 of Frischgewaagd 96 JQ   |
| <b>Magisterial district</b>                                 | Moses Kotane and Rustenburg Magisterial Districts  |
| <b>Distance and direction from nearest town</b>             | Plant Area: approximately (~) 1.2 km south east of Ledig, 150 m south east of Lekwadi Section from the edge of the closest infrastructure<br>TSF Area: ~ 3 km south west of Ledig, 450 m east of Phatsima from the edge of the closest infrastructure  |
| <b>21 digit Surveyor General Code for each farm portion</b> | TOJQ00000000009600001<br>TOJQ00000000009600003<br>TOJQ00000000009600004<br>TOJQ00000000009600011<br>TOJQ00000000009600000<br>TOJQ00000000008100000   |
| <b>Co-ordinates (Also illustrated on Figure 0.1)</b>        | <p><b>Plant area:</b></p> <ul style="list-style-type: none"> <li>a. 27 4 34.248E<br/>25 22 18.292S</li> <li>b. 27 5 17.734E<br/>25 22 1.838S</li> <li>c. 27 5 40.154E<br/>25 23 18.246S</li> <li>k. 27 4 19.494E<br/>25 23 17.945S</li> </ul> <p><b>Pipeline:</b></p> <ul style="list-style-type: none"> <li>d. 27 4 58.308E<br/>25 23 18.602S</li> <li>e. 27 3 42.983E<br/>25 23 38.009S</li> <li>f. 27 2 58.699E<br/>25 23 55.97S</li> </ul> <p><b>TSF:</b></p> <ul style="list-style-type: none"> <li>g. 27 3 7.408E<br/>25 24 14.741S</li> <li>h. 27 2 15.544E<br/>25 24 19.579S</li> <li>i. 27 1 43.807E<br/>25 23 53.454S</li> <li>j. 27 5 7.151E<br/>25 23 42.423S</li> </ul> |

### 3 LOCALITY MAP

The local and regional setting of the proposed project site is illustrated in Figure 0.1 and Figure 0.2.

## 4 DESCRIPTION OF THE SCOPE OF THE PROPOSED ACTIVITY

### 4.1 OVERVIEW OF THE PROJECT

The BPM is proposing to make changes to their approved mine. This will include new infrastructure as well as modifications and realignments to approved infrastructure. An overview of the proposed changes is provided below. Appendix D provides an updated surface infrastructure layout for the site with annotations. Further details for each change are provided in Section 4.3 below.

Increased capacity of approved facilities including:

- the concentrator plant and related mine product and tailings storage
- the storage of dangerous goods
- the sewage treatment plant
- Inclusion of waste rock as aggregate into the mining right
- Re-alignment/ re-positioning of approved infrastructure within the Shaft and Concentrator Complexes
- Repositioning of the approved waste rock dump and sewage treatment plant
- Repositioning of the Crusher Circuit to aboveground
- Reconfiguration of storm water and process water management on site
- Storage of waste materials in the repositioned salvage yard
- Establishment of new/additional infrastructure including:
  - Stream crossing along the approved access road
  - Track and perimeter roads
  - Phase 1a housing of the Gabonewe Residential Estate
  - Tailings and return water pipelines
  - Erosion control measures along a section of the ephemeral tributary of the Elands River
  - A bridge connecting Phase 1 and Phase 1a housing
  - Refurbishing a security bridge north of Phase 1 and Phase 1a housing
  - Magalies Water Board pipeline river crossing
  - Ventilation shafts and raise boreholes
  - Generators
  - A solar plant
  - Water storage reservoirs
  - Topsoil stockpiles

In the sections below the infrastructure that has already been authorised as part of the approved EIA in 2008 is not discussed, unless to provide background and context to the current application. Estimated project timelines are detailed below (Table 4.2).

**TABLE 4.1: ESTIMATED PROJECT TIMELINES**

| <b>Aspect</b>                 | <b>Timing</b>  |
|-------------------------------|--|
| Start construction of changes | Target date is 2018 (subject to regulatory approval)   |
| Duration of construction      | Three years from 2018 (this is not considering construction that has already started on site for shaft sinking)                |
| Start operation               | Ramp-up in 2020 to reach a steady-state of mining and production in 2021, this is 5 years later than the approved EIA and EMP. |
| Life of operation             | Life of mine on current planning is scheduled for 2044, this is two years later than the approved EIA and EMP.                 |

## 4.2 SPECIFIED LISTED ACTIVITIES

The activities and infrastructure associated with the proposed project are listed in Table 4.2 below and are illustrated in Figure 4.1 and Appendix D (where relevant). In each case the relevant NEMA and/or NEM:WA listed activities which will be triggered by the proposed project for the various activities and infrastructure are included in Table 4.2. A description of each of the listed activities identified is provided in Table 4.3.

**TABLE 4.2: LIST OF ACTIVITIES/INFRASTRUCTURE ASSOCIATED WITH THE PROPOSED PROJECT**

| Activity/Process   | Aerial Extent of the Activity (ha / m) | Construction of project components | Operation       | Decommissioning | Closure | Listed Activity for this project | Applicable listing notice                  |
|--|--|------------------------------------|-----------------|-----------------|---------|----------------------------------|--|
| Continuation of approved activities  |  |                                    |                 |                 |         |                                  |  |
| The continuation of development on site where not all construction of approved infrastructure has commenced        |  | As required                        |                 |                 |         | X                                | GNR 983 Activity 32                        |
| Site preparation   |  |                                    |                 |                 |         |                                  |  |
| Selective bush clearing in areas where infrastructure will be established  | Additional 90.4 ha                     | As required                        | -               | -               | -       | X                                | GNR 984 Activity 15<br>GNR 985 Activity 12 |
| Establishing construction support facilities   |  | As required                        | -               | -               | -       |                                  |  |
| Earthworks   |  |                                    |                 |                 |         |                                  |  |
| Stripping and stockpiling soil resources in line with Bakubung's soil management programme (including noise berms) | Additional 90.4 ha                     | Ongoing                            | As required     | -               | -       |                                  |  |
| Bulldozing activities  |  | Ongoing                            | Ongoing         | -               | -       |                                  |  |
| Establishing and maintaining new service and perimeter roads and use of approved access roads                      | Approximately 3 m width                | Ongoing                            | Ongoing         | Ongoing         | -       |                                  |  |
| Foundation excavations and compaction (including preparation of TSF and water dam footprints)                      | 4 ha                                   | At start of phase                  | As required     | -               | -       | X                                | GNR 983 Activity 19                        |
| Civil works  |  |                                    |                 |                 |         |                                  |  |
| General building activities and erection of structures   |  | At start of phase                  | For maintenance | -               | -       |                                  |  |
| Steel work (including grinding and welding)  |  | At start of phase                  | For maintenance | -               | -       |                                  |  |
| Installation of cables/lines and pipelines   |  | As required                        | For maintenance | -               | -       |                                  |  |
| Construction and use of new bridges and culverts for stream crossings  | <1 ha                                  | At start of phase                  | Ongoing         | -               | -       | X                                | GNR 983 Activity 12<br>GNR 983 Activity 19 |

| Activity/Process   | Aerial Extent of the Activity (ha / m) | Construction of project components | Operation               | Decommissioning | Closure | Listed Activity for this project | Applicable listing notice   |
|--|--|------------------------------------|-------------------------|-----------------|---------|----------------------------------|---|
|  |  |                                    |                         |                 |         |                                  | GNR 985 Activity 14   |
| Establishing erosion control measures along a watercourse  | <1 ha                                  |                                    |                         |                 |         | X                                | GNR 983 Activity 12<br>GNR 983 Activity 19<br>GNR 985 Activity 14 |
| Mining and mining related activities   |  |                                    |                         |                 |         |                                  |   |
| Crushing of ore in aboveground crushing circuit  | 0.005 ha                               | -                                  | Ongoing                 | -               | -       | X                                | GNR 984 Activity 21   |
| Additional ventilation system for underground mining   | < 1 ha                                 | -                                  | Ongoing                 | -               | -       |                                  |   |
| Waste rock management  |  |                                    |                         |                 |         |                                  |   |
| Storage on existing approved waste dump (on-site, on surface) (no additional capacity required)                  |  | -                                  | Ongoing                 | -               | -       |                                  |   |
| Final disposal on existing approved waste dump (on-site, on surface) (if applicable)                             |  | -                                  | Ongoing                 | -               |         |                                  |   |
| Crushing of waste rock for sale as aggregate   | 5 ha                                   | Ongoing (when possible)            | Ongoing (when possible) | -               |         | X                                | GNR 984 Activity 17<br>GNR 984 Activity 21                        |
| Approved use of waste rock for bank areas (including roads, terraces and housing foundations)                    |  | At start of phase                  | For maintenance         | -               |         |                                  |   |
| Mineral processing operations  |  |                                    |                         |                 |         |                                  |   |
| Increased capacity of the concentrator plant and the related mine product stockpiles (no changes to the process) | 38.1 ha                                | -                                  | Ongoing                 | -               | -       | X                                | GNR 983 Activity 34<br>GNR 984 Activity 21<br>GNR 985 Activity 12 |
| Tailings management  |  |                                    |                         |                 |         |                                  |   |
| Delivery of tailings and return water via pipelines  | 11.4 ha                                | -                                  | Ongoing                 | -               | -       | X                                | GNR 983 Activity 10<br>GNR 983 Activity 12<br>GNR 985 Activity 14 |



| Activity/Process  | Aerial Extent of the Activity (ha / m) | Construction of project components | Operation | Decommissioning                        | Closure     | Listed Activity for this project | Applicable listing notice  |
|---|--|------------------------------------|-----------|--|-------------|----------------------------------|--|
| Final disposal on an approved TSF with a return water dam with increased capacity and footprint                 | Additional 36 ha                       | -                                  | Ongoing   | -                                      | -           | X                                | GNR 983 Activity 19<br>GNR 983 Activity 12<br>GNR 983 Activity 28<br>GNR 983 Activity 34<br>GNR 985 Activity 23<br>GNR 921 Activity Category B (7)<br>GNR 921 Activity Category B (10)<br>GNR 921 Activity Category B (11) |
| Power Supply and Use  |  |                                    |           |  |             |                                  |  |
| Power will be sourced from existing Eskom supply (no additional capacity needed)                                |  | Ongoing                            | Ongoing   | Until facilities are no longer needed  | -           |                                  |  |
| Power supply from new genset/generators   | <1 ha                                  | Ongoing                            | Ongoing   | Until facilities are no longer needed  | -           | X                                | GNR 984 Activity 2   |
| Renewal energy generation from a new solar plant  | 21 ha                                  | -                                  | Ongoing   | -                                      | -           | X                                | GNR 983 Activity 1<br>GNR 983 Activity 28  |
| Water supply and use  |  |                                    |           |  |             |                                  |  |
| Use of water (sourced from same sources that are planned for the current mine)                                  |  | As required                        | Ongoing   | -                                      | -           |                                  |  |
| Water storage in new reservoirs   | <1 ha                                  |                                    | Ongoing   | -                                      | -           | X                                | GNR 983 Activity 13<br>GNR 985 Activity 2  |
| Process and storm water management  |  |                                    |           |  |             |                                  |  |
| Diversion of clean water around the site (where applicable) in line with an updated storm water management plan |  | Ongoing                            | Ongoing   | Until facilities are no longer needed  | As required |                                  |  |
| Collection of potentially dirty water in PCDs (within footprint of approved for dirty water containment area)   | 4.2 ha                                 |                                    | Ongoing   | Until facilities are no longer needed- | -           |                                  |  |

| Activity/Process  | Aerial Extent of the Activity (ha / m) | Construction of project components | Operation | Decommissioning                       | Closure     | Listed Activity for this project | Applicable listing notice  |
|---|--|------------------------------------|-----------|---------------------------------------|-------------|----------------------------------|--|
| Transport systems   |  |                                    |           |                                       |             |                                  |  |
| Use of approved access points and roads to the mine   |  | Ongoing                            | Ongoing   | Until facilities are no longer needed | As required |                                  |  |
| New service road along the tailings and return water pipelines route and a new perimeter access road around the TSF   | Approximately 3 m                      | -                                  | Ongoing   | Until facilities are no longer needed | -           | X                                | GNR 985 Activity 4   |
| Vehicle movement to and from mine for material, staff, waste removal and product (via surfaced and gravel roads) (no significant increase in volume expected) |  | Ongoing                            | Ongoing   | Ongoing                               | Infrequent  |                                  |  |
| Vehicles/machinery movement within mine boundary (via surfaced and gravel roads) (no significant increase in volume expected)                                 |  | Ongoing                            | Ongoing   | Ongoing                               | Infrequent  |                                  |  |
| General and hazardous waste management  |  |                                    |           |                                       |             |                                  |  |
| Handling and storage of general and hazardous waste at an approved salvage yard in line with waste management procedure                                       | 0.62 ha                                | Ongoing                            | Ongoing   | Until facilities are no longer needed | -           | X                                | GNR 921 Activity Category B (7)<br>GNR 921 Activity Category C (3) |
| Sewage sludge management  |  |                                    |           |                                       | -           |                                  |  |
| Provision and maintenance of portable sanitation facilities at construction sites   |  | Ongoing                            | -         | -                                     | -           |                                  |  |
| Sewage treatment plant to be used with increased capacity   | 0.44 ha                                | -                                  | Ongoing   | Until facilities are no longer needed | -           | X                                | GNR 984 Activity 25  |
| Site support services   |  |                                    |           |                                       |             |                                  |  |
| Increased storage capacity of dangerous goods   | 0.15 ha                                | Ongoing                            | Ongoing   | -                                     | -           | X                                | GNR 984 Activity 4   |
| Housing   |  |                                    |           |                                       |             |                                  |  |
| Additional housing for mine employees   | 22 ha                                  | At start of phase                  | Ongoing   | Until facilities are no longer needed | -           | X                                | GNR 983 Activity 12<br>GNR 983 Activity 28<br>GNR 985 Activity 14  |

| Activity/Process   | Aerial Extent of the Activity (ha / m) | Construction of project components | Operation                     | Decommissioning   | Closure     | Listed Activity for this project | Applicable listing notice   |
|--|--|------------------------------------|-------------------------------|-------------------|-------------|----------------------------------|---|
| Site/contract management   |  |                                    |                               |                   |             |                                  |   |
| Appointment of contractors and workers   |  | At start of phase and ongoing      | At start of phase and ongoing | At start of phase | -           |                                  |   |
| Site management (monitoring, inspections, maintenance, soil stockpile management, alien invasive management, security, access control) |  | Ongoing                            | Ongoing                       | Ongoing           | As required |                                  |   |
| Environmental awareness training and emergency response  |  | Ongoing                            | Ongoing                       | Ongoing           | As required |                                  |   |
| Ongoing rehabilitation of facilities/disturbed areas (where possible)  |  | Ongoing                            | Ongoing                       | Ongoing           | -           |                                  |   |
| Implementing and maintaining management programmes   |  | Ongoing                            | Ongoing                       | Ongoing           | -           |                                  |   |
| Demolition (unless alternative end land use is identified during the detailed closure planning)  |  |                                    |                               |                   |             |                                  | Decommissioning and closure are included for completeness but no specific activities related to these phases are being applied for at this stage due to the length of the life of mine. |
| Dismantling and demolition of project-related infrastructure (where applicable)  |  | -                                  | -                             | As required       | -           |                                  |   |
| Removal of project-related equipment   |  | -                                  | -                             | As required       | -           |                                  |   |
| Rehabilitation   |  |                                    |                               |                   |             |                                  |   |
| Replacing soil resources in line with a soil management plan   |  | -                                  | -                             | As required       | -           |                                  |   |
| Landscaping and slope stabilisation  |  | -                                  | -                             | Ongoing           | -           |                                  |   |

| Activity/Process  | Aerial Extent of the Activity (ha / m) | Construction of project components | Operation | Decommissioning | Closure         | Listed Activity for this project | Applicable listing notice |
|---|--|------------------------------------|-----------|-----------------|-----------------|----------------------------------|---------------------------|
| Re-vegetation of disturbed areas including the TSF  |  | -                                  | -         | Ongoing         | As required     |                                  |                           |
| Restoration of natural drainage patterns where applicable   |  | -                                  | Ongoing   | Ongoing         | For maintenance |                                  |                           |
| Rehabilitation of access tracks and roads unless alternative end land use is identified                       |  | -                                  | -         | As required     | -               |                                  |                           |
| Initiation of aftercare and maintenance   |  | -                                  | -         | At end of phase | -               |                                  |                           |
| Maintenance and aftercare   |  |                                    |           |                 |                 |                                  |                           |
| Maintenance of vegetation in rehabilitated areas  |  | -                                  | -         | -               | As required     |                                  |                           |
| Maintenance of facilities (such as fencing, fire breaks, access roads, overflow structures, where applicable) |  | -                                  | -         | -               | As required     |                                  |                           |
| Removal of any invasive species from the rehabilitated sites  |  | -                                  | -         | -               | As required     |                                  |                           |
| Repair of erosion gullies   |  | -                                  | -         | -               | As required     |                                  |                           |

**TABLE 4.3: DESCRIPTION OF THE LISTED ACTIVITIES APPLIED FOR AS PART OF THE PROPOSED PROJECT**

| Activity number                      | Listed activity   |
|--------------------------------------|---|
| <b>NEMA Listing Notice 1 GNR.983</b> |   |
| 1                                    | The development of facilities or infrastructure for the generation of electricity from a renewable resource where - (i) the electricity output is more than 10 megawatts but less than 20 megawatts; or (ii) the output is 10 megawatts or less but the total extent of the facility covers an area in excess of 1 hectare; excluding where such development of facilities or infrastructure is for photovoltaic installations and occurs within an urban area.   |
| 10                                   | The development and related operation of infrastructure exceeding 1000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes - (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where - (a) such infrastructure is for bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve; or (b) where such development will occur within an urban area. |
| 12                                   | The development of - (i) canals exceeding 100 square metres in size; (ii) channels exceeding 100 square metres in size; (iii) bridges exceeding 100 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; (v) weirs, where the   |

| Activity number                        | Listed activity   |
|--|---|
|  | weir, including infrastructure and water surface area, exceeds 100 square metres in size; (vi) bulk storm water outlet structures exceeding 100 square metres in size; (vii) marinas exceeding 100 square metres in size; (viii) jetties exceeding 100 square metres in size; (ix) slipways exceeding 100 square metres in size; (x) buildings exceeding 100 square metres in size; (xi) boardwalks exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs - (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; - excluding - (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; or (ee) where such development occurs within existing roads or road reserves. |
| 13                                     | The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.  |
| 19                                     | The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from - (i) a watercourse; (ii) the seashore; or (iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high water mark of the sea or an estuary, whichever distance is the greater but excluding where such infilling, depositing, dredging, excavation, removal or moving - (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.  |
| 28                                     | Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture 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.   |
| 32                                     | The continuation of any development where the environmental authorisation has lapsed and where the continuation of the development, after the date the environmental authorisation has lapsed will meet the threshold of any activity or activities listed in this Notice, Listing Notice 2 of 2014, or Listing Notice 3 or Listing Notice 4 of 2014.   |
| 34                                     | The expansion or changes to existing facilities for any process or activity where such expansion or changes will result in the need for a permit or licence or an amended permit or licence in terms of national or provincial legislation governing the release of emissions or pollution, excluding - (i) where the facility, process or activity is 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; or (ii) the expansion of or changes to existing facilities for the treatment of effluent, wastewater or sewage where the capacity will be increased by less than 15 000 cubic metres per day.  |
| <b>NEMA Listing Notice 2: GNR. 984</b> |   |
| 2                                      | The development and related operation of facilities or infrastructure for the generation of electricity from a non-renewable resource where the electricity output is 20 megawatts or more.   |
| 4                                      | The development of facilities or infrastructure, for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of more than 500 cubic metres.  |
| 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.  |
| 17                                     | Any activity including the operation of that activity which requires a mining right as contemplated in section 22 of the Mineral and Petroleum Resources  |

| Activity number                         | Listed activity   |
|---|---|
|   | Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to the extraction of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).  |
| 21                                      | Any activity including the operation of that activity associated with the primary processing of a mineral resource including winning, reduction, extraction, classifying, concentrating, crushing, screening and washing but excluding the smelting, beneficiation, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.  |
| 25                                      | The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of 15000 cubic metres or more.   |
| <b>NEMA Listing Notice 3: GNR. 985</b>  |   |
| 2                                       | The development of reservoirs for bulk water supply with a capacity of more than 250 cubic metres.  |
| 4                                       | The development of a road wider than 4 metres with a reserve less than 13.5 metres.   |
| 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.   |
| 14                                      | The development of - (i) canals exceeding 10 square metres in size ; (ii) channels exceeding 10 square metres in size; (iii) bridges exceeding 10 square metres in size;(iv) dams, where the dam, including infrastructure and water surface area exceeds 10 square metres in size; (v) weirs, where the weir, including infrastructure and water surface area exceeds 10 square metres in size;(vi) bulk storm water outlet structures exceeding 10 square metres in size;(vii) marinas exceeding 10 square metres in size;(viii) jetties exceeding 10 square metres in size;(ix) slipways exceeding 10 square metres in size;(x) buildings exceeding 10 square metres in size; (xi) boardwalks exceeding 10 square metres in size; or(xii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs - (a) within a watercourse ;(b) in front of a development setback ; or(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.   |
| 23                                      | The expansion of- (i) canals where the canal is expanded by 10 square metres or more in size; (ii) channels where the channel is expanded by 10 square metres or more in size;(iii) bridges where the bridge is expanded by 10 square metres or more in size;(iv) dams where the dam is expanded by 10 square metres or more in size;(v) weirs where the weir is expanded by 10 square metres or more in size;(vi) bulk storm water outlet structures where the structure is expanded by 10 square metres or more in size;(vii) marinas where the marina is expanded by 10 square metres or more in size;(viii) jetties where the jetty is expanded by 10 square metres or more in size;(ix) slipways where the slipway is expanded by 10 square metres or more in size;(x) buildings where the building is expanded by 10 square metres or more in size;(xi) boardwalks where the boardwalk is expanded by 10 square metres or more in size; or (xii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such development occurs -(a) within a watercourse ;(b) in front of a development setback adopted in the prescribed manner; or(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse ;excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. |
| <b>NEM:WA Listed Activities GNR 921</b> |   |
| Category B (7)                          | The disposal of any quantity of hazardous waste to land.  |
| Category B(10)                          | The construction of a facility for a waste management activity listed in Category 8 of this Schedule (not in isolation to associated waste management activity).  |

| Activity number | Listed activity  |
|-----------------|--|
| Category B(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). |
| Category C(3)   | The storage of waste tyres in a storage area exceeding 500m <sup>2</sup> .   |

### 4.3 DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN

As part of the approved project, not all activities have commenced on site, this is based on slow construction, the length of the shaft sinking phase and proposed changes to the mine (this project). This project thus includes application for the continuation of development where construction of some approved infrastructure has not yet commenced.

The project comprises two phases for the concentrator, Phase A is ore handling and receipt and Phase B includes the balance of the plant (build and operating of the plant).

#### 4.3.1 SURFACE INFRASTRUCTURE

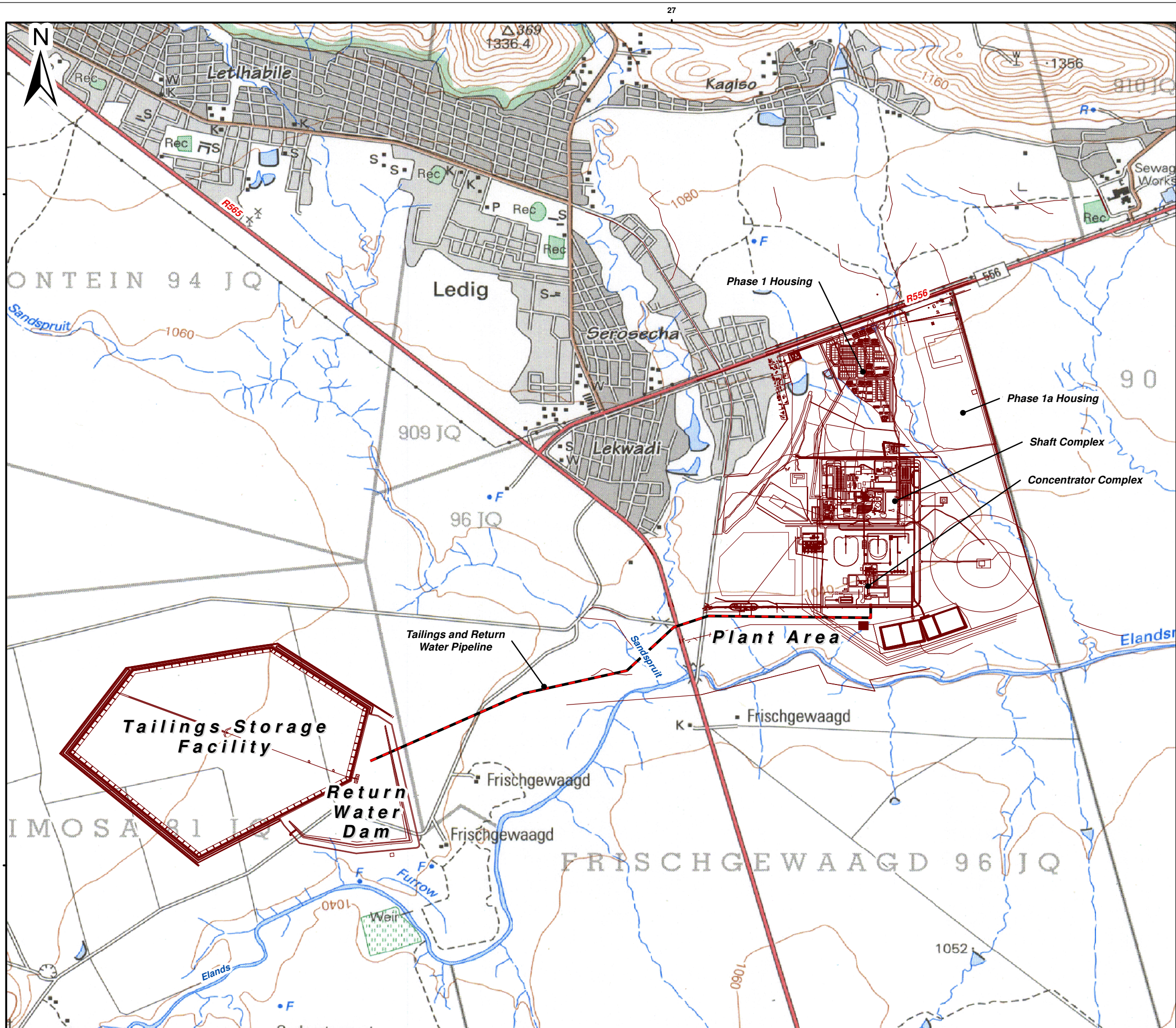
Note that most of the surface infrastructure required for the mine has already been approved in the 2008 EIA. Approved infrastructure has been indicated as such below. An infrastructure plan of the project, showing the location and extent of infrastructure is provided in Appendix G and Figure 4.1. The layout of infrastructure within the Shaft and Concentrator complexes has been re-aligned to support optimisation of the mining and mineral processing operations.

The final layout catering for both approved and proposed infrastructure will include:

- A tarred road to provide access to the shaft and plant from south-western side and a tarred road to provide access to the housing, to the north (approved);
- Internal mine and service roads (approved);
- Pipeline service track (bush break) (this project);
- Two gatehouses with entry and exit roadways to the shaft and plant. Pedestrian access will be via turnstiles (approved);
- A vertical twin shaft system (two man, material and rock shafts) with a steel A-frame headgear on the man, material and rock shaft. An additional raise bore shaft will be required at a later stage. This will be within the current mine footprint (approved);
- Two additional ventilation shafts and raise boreholes (this project);
- An emergency winder with a cage and a steel A-frame headgear over the second man and material shaft (approved)
- Surface conveyor belts to transport ore to the Merensky and UG2 stockpiles (approved)
- Mineral processing plant and associated infrastructure is approved, however increased capacity is proposed for this project;
- Box culvert bridges where necessary (approved);
- A bridge near the mine housing (this project);
- A topsoil storage area and stockpiles is planned to the north-west of the shaft and plant infrastructure (approved);

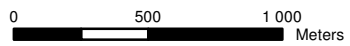


- Additional topsoil storage areas south of the waste rock dump and east of the Concentrator Complex (this project);
- A waste rock dump (approved);
- Infrastructure for services including potable, process and fire water, compressed air and sewage reticulation (approved);
- Potable water storage tanks (approved);
- Increased sewage treatment plant capacity (this project);
- New sewage and water pipelines (this project);
- Updated storm water management with storm water diversion berms (this project);
- Erosion control measures along a section of the tributary of the Elands River (this project);
- Dirty water settling dams/pollution control dams (PCDs) (approved) and 2 PCDs (this project, to be built in the footprint of approved but not to be constructed dirty water dams);
- Electrical reticulation (approved);
- TSF, with associated lining preparations and return water dams (increased footprint and capacity of the TSF is proposed in this project);
- A tailings pipeline and return water pipeline between the mine and the TSF (this project);
- Mine product stockpiles (approved, increased capacity included in this project);
- Bus and taxi offloading area with shelters (approved);
- Parking facility for shaft and plant personnel (approved);
- Security fencing (approved);
- Helipad (approved);
- Aboveground ore crusher circuit (this project);
- Storage and handling of dangerous goods such as diesel and reagents on site (approved, additional capacity included in this project);
- New Generators (this project);
- A solar power plant on site, for back up ventilation (this project);
- Phase 1 of the mine housing and associated infrastructure (approved);
- Phase 1a of the mine housing (this project); and
- A salvage yard (temporary storage of general and hazardous waste) (approved but not yet constructed, included in this project for the waste licence application).



**Legend**

- Mine Layout
- Proposed Pipeline



Scale: 1:10 000 @ A3  
SA Grid WGS84

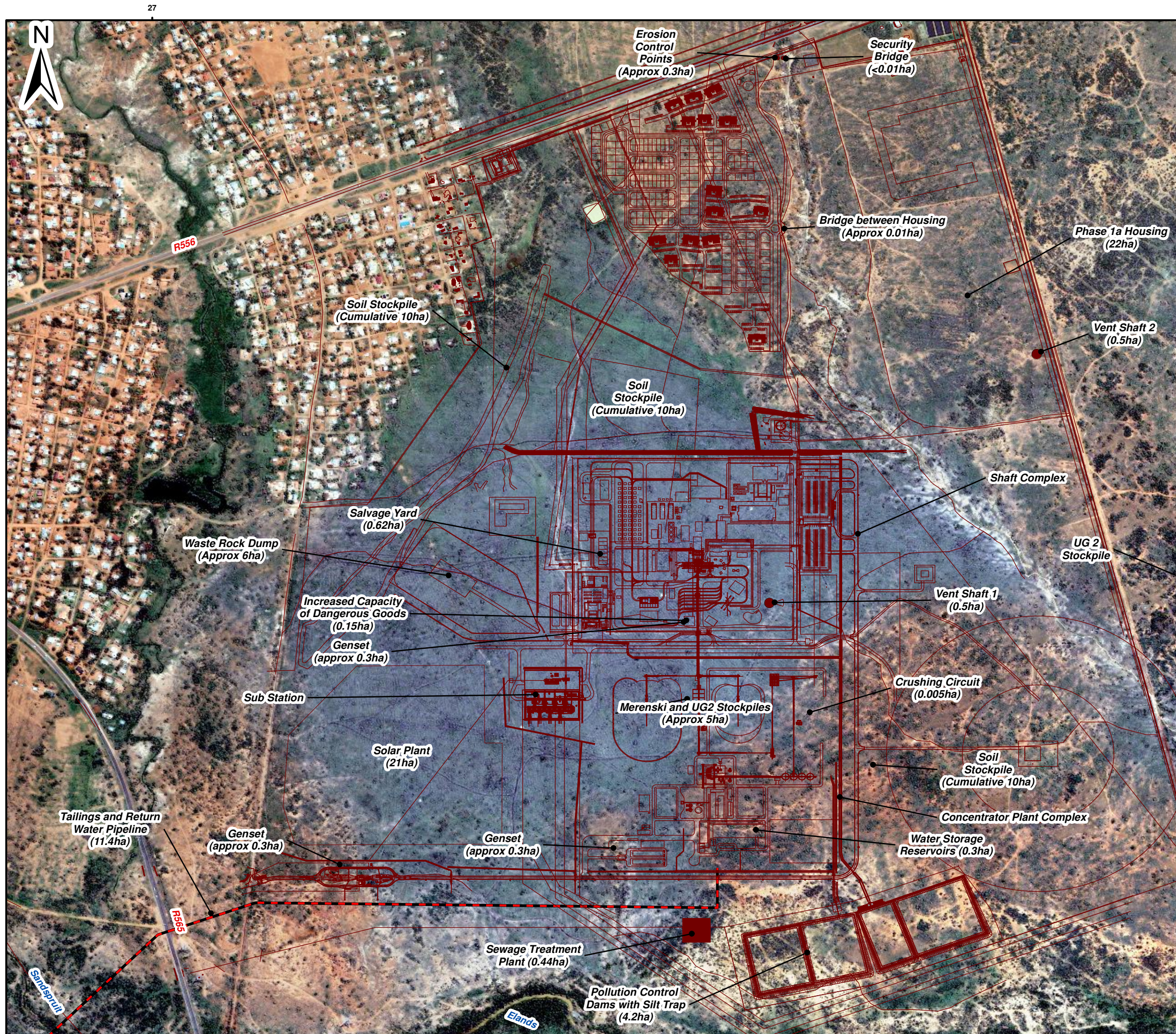
**BAKUBUNG PLATINUM MINE (PTY) LTD**

**Figure 4.1**

**Infrastructure Layout**

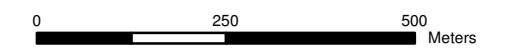


SLR Consulting (Africa) (Pty) Ltd  
P O Box 1596, Cramerview, 2060, South Africa  
Tel: +27 (11) 467-0945 Fax: +27 (11) 467-0978



**Legend**

- Mine Layout
- - - Proposed Pipeline



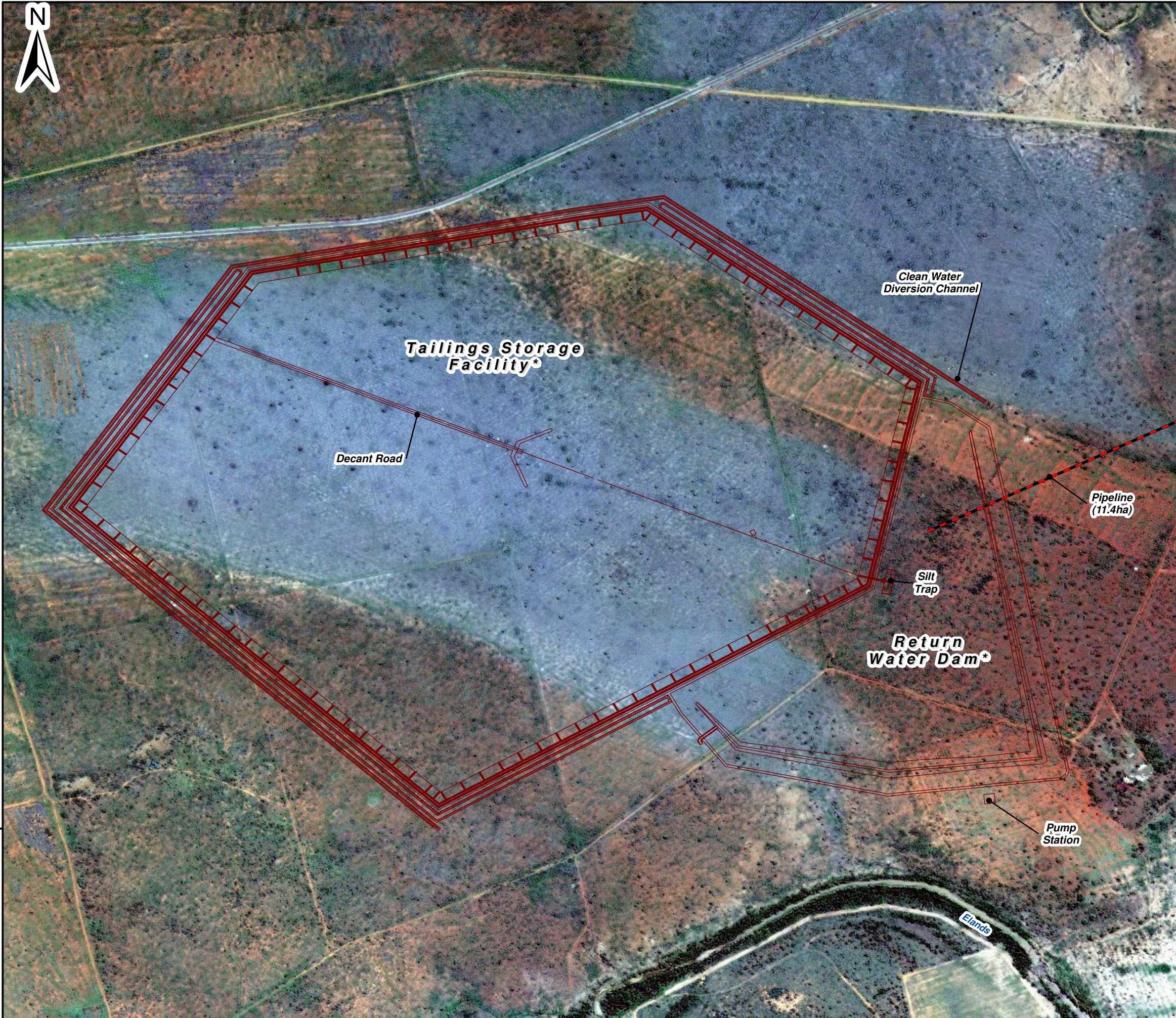
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SA Grid WGS84

**BAKUBUNG PLATINUM  
MINE (PTY) LTD**

**Figure 4.1  
Plant Layout**



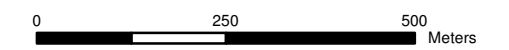
SLR Consulting (Africa) (Pty) Ltd  
P O Box 1596, Cramerview, 2060, South Africa  
Tel: +27 (11) 467-0945 Fax: +27 (11) 467-0978



**Legend**

- Mine Layout
- - - Proposed Pipeline

**\*Size of TSF, with perimeter roads and Return Water Dam = (166ha)**



Scale: 1:10 000 @ A3  
SA Grid WGS84

**BAKUBUNG PLATINUM MINE (PTY) LTD**

**Figure 4.1**

**TSF Layout**



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Tel: +27 (11) 467-0945 Fax: +27 (11) 467-0978

#### 4.3.2 SITE PREPARATION AND CONSTRUCTION FACILITIES

Site preparation will include the clearing of vegetation where infrastructure is to be established. Most of the vegetation clearing has already been approved; this project will require additional clearing for increased footprints. The approximate area equates to an additional 90.4 ha disturbance.

There will also be the establishment of temporary construction facilities which will be established on site for the proposed additional/changed infrastructure. These facilities could include:

- Workshops, stores, washbays, lay-down areas, fuel handling and storage area, offices, ablution facilities
- Handling and storage area for construction materials (paints, solvents, oils, grease) and wastes
- Generator/s for temporary power supply.

These facilities would either be removed at the end of the construction phase or incorporated into the layout of the operational mine.

#### 4.3.3 EARTHWORKS

Earthworks mainly relate to the movement of soil and rock. For the project, earthwork activities will include bulldozing, digging and/or blasting foundations and trenches, establishing and maintaining roads (discussed further in Section 4.3.13), stripping and stockpiling of soil resources in new/ increased footprints (where applicable), and excavating/compacting TSF and water dam footprints (discussed further in Sections 4.3.7 and 4.3.10, respectively)

Since there will be additional areas disturbed by the project, soil resources from these areas will be stripped and stockpiled in line with Bakubung's soil management procedure. The soil stockpiles will increase in capacity. This will also include the establishment of additional topsoil stockpiles on site. The additional topsoil will be from approximately 90.4 ha of additional area to be disturbed. It is estimated that an additional volume of 27.12 m<sup>3</sup> will require storage. New topsoil stockpiles will be located in the following areas:

- At the TSF area for topsoil removed from the TSF footprint.
- East of the Concentrator Complex

#### 4.3.4 CIVIL WORKS

Civil works relate mainly to any steel, piping, liner and concrete work. Civil works linked to the project will include preparing the TSF and PCD footprints (discussed further in Sections 4.3.7 and 4.3.10 respectively), the construction of stream crossing infrastructure including bridges and culverts, the

installation of cables/lines and pipelines and constructing erosion control infrastructure along a section of the unnamed tributary of the Elands River.

Erosion control measures are required along a section of the unnamed tributary of the Elands River flowing between the Phase 1 and phase 1a housing to the north of the Shaft Complex. Erosion control measures will include gabions baskets filled with stones.

Stream crossing infrastructure required for the project (located within 32 m of a watercourse) is outlined below. All stream-crossing infrastructure will be designed to cater for the 1:50 or 1:100 year flood events, depending on the application.

- A new bridge will be constructed between the Phase 1 and Phase 1a housing developments. The bridge will cater for two lanes, with a single lane in each direction. There will be a pedestrian walkway and space for pipelines and electrical cables.
- Refurbishment of a security bridge north of the Phase 1a and Phase 1 housing that previously washed away.
- A section of the mine's Magalies water supply pipeline, located underground and still to be constructed, will cross under an ephemeral channel of the Elands River.
- A culvert will be required where the approved mine access road crosses a non-perennial drainage line.
- The tailings and return water pipelines track will cross over ephemeral drainage lines and channels present south of the Concentrator Complex as well as over the Sandspruit to the west of the R565. The pipeline will be located on plinths either side of the drainage line.
- Sewage pipeline from the Phase 1 and Phase 1a housing area.

#### **4.3.5 MINING AND PROCESSING**

##### **4.3.5.1 Minerals to be mined**

Waste rock as aggregate will be added to the mineral right of the mine.

##### **4.3.5.2 Crushing circuit**

The plant is designed with primary and secondary crushing, with Merensky and UG2 ores campaigned through the crusher circuit from Run of Mine (RoM) feed to crushed ore silos. The secondary crusher will be used in the latter years of the life of mine (LOM) when the ore hardness is expected to increase. In the approved EIA and EMP the ore crusher circuit was to be placed underground. With this project, BPM is proposing to move the crusher circuit to aboveground and will be located within the Concentrator Complex.

Crushed ore will be delivered to two stockpiles, one for each ore type, Merensky and UG2. The plant design is based on the separate milling and flotation of the two ore types using the Mill-Float – Mill-Float or MF2 circuits and then combining the concentrates produced as a final concentrate. This remains unchanged.

#### **4.3.5.3 Concentrator and product stockpiles**

The intention is to build the concentrator plant in three modules. Module 1 will be for the Merensky ore and will consist of a single RoM mill with a complete flotation circuit, concentrate, spillage and tailings handling system sufficient to cater for the final concentrator circuit. The concentrator plant is already approved, though the capacity is now increasing from 230000 tons per month to 265000 tons per month. The related mine product stockpiles and tailings storage will thus also be increasing in relation to the increased concentrator plant capacity. The mine product stockpiles will still be located within the Concentrator Complex. The tailings will be deposited on the TSF (Section 4.3.7). The mine product stockpiles will have a storage capacity of 131 kilotons for UG2 and Merensky.

#### **4.3.5.4 Ventilation shafts**

Two additional up-cast ventilation shafts will be located at the mine area, one will be within the Shaft Complex and one will be located at the eastern property border, south of the Phase 1a housing. Two satellite compressors will be located west of the Complexes, one south west of the waste rock dump and one south west of the noise berm. As part of optimisation at the Shaft Complex, the main ventilation shaft is being converted to an upcast / man and material shaft. Two downcast ventilation shafts provide fresh air underground.

#### **4.3.6 WASTE ROCK MANAGEMENT**

Waste rock is currently being produced from the shaft sinking occurring on site. Waste rock will continue to be produced during construction and will either be used to develop the bank areas (this includes roads, terraces and housing foundations) or will be disposed of on the approved waste rock dump. The waste rock dump was approved in the 2008 EIA but the location and orientation has changed, however, it is still within the development footprint (Figure 4.1). The size and capacity of the waste rock dump is staying the same as per the approved project. Currently the waste rock dump is smaller than the approved LOM capacity, with a storm water drain on the perimeter of this smaller footprint. The storm water drains around the waste rock dump will be re-aligned if necessary, should the waste rock dump reach its full Life of Mine capacity.

BPM is proposing to crush the waste rock to sell as aggregate. This will occur in both the construction and operational phases should excess rock be available. Waste rock will first be used for the construction of bank areas and should there be excess waste rock, this will be sold. The quantities of waste rock available for sale will only be determined after construction activities are complete.

#### 4.3.7 TAILINGS MANAGEMENT

A Tailings Storage Facility (TSF) was proposed in the approved EIA and EMP. With the increased capacity of the concentrator plant, changes to the TSF are required. Details on the TSF are included in Table 4.4 below. The TSF will increase from 130 ha to 166 ha (including the return dam), and decrease in height from 50 m to 46 m from the lowest point. The TSF will include a return water dam, with a capacity of 433 000 m<sup>3</sup>. The TSF has been designed to have a maximum capacity of 78 million tonnes with tailings production rate of between 223 – 262 kilotonnes per month, giving a life of 25 years if operated at the maximum rate of 262 kilotonnes. The TSF design is shown in Appendix U. Table 4.4 provides an overview of the design criteria of the TSF.



**TABLE 4.4: DESIGN PRINCIPLES FOR THE TAILINGS COMPLEX**

| Feature                          | Detail   |
|----------------------------------|--|
| Tailings Delivery and Deposition | A tailings distribution pipe around the TSF will be a rubber lined steel pipe. Tailings in the form of slurry will be delivered at a rate of 420 tons per hour. The slurry density will be 1.55 tons per m <sup>3</sup> with a void ratio of 3.18.   |
| Diversion                        | <p>Surface runoff from the outer slopes of the TSF will be collected in toe paddocks and allowed to evaporate. Any rainfall falling within the TSF footprint will drain to the return water dam from where it will be recycled to the plant.</p> <p>A clean water diversion canal will be provided around the perimeter of the TSF to intercept clean surface run-off and convey it around the facility. The canal will discharge captured flow to the environment downstream of the TSF.</p>  |
| Topsoil Stripping                | Topsoil within the TSF footprint areas will be stripped and stockpiled in accordance with the topsoil conservation guide in close proximity to the TSF. A stripping depth of 300 mm was indicated in the design. Stripping and stockpiling of topsoil will be done as part of the initial TSF construction works.  |
| Lining                           | <p>A Class C barrier system is required. For the proposed design of the BPM TSF barrier system, Class C is as listed below starting from the waste (Platinum tailings) to the natural ground.</p> <ul style="list-style-type: none"> <li>• Over liner drainage (finger drains)</li> <li>• Waste body (Platinum tailings)</li> <li>• Geotextile A7 or similar approved</li> <li>• 1.5 mm thick HDPE geomembrane (double textured)</li> <li>• 300 mm thick ripped and re-compacted in-situ clay</li> <li>• In-situ undisturbed material</li> </ul>   |
| Embankments                      | <p>A starter wall will be constructed from material borrowed from the basin of the TSF at 1V:1.75H downstream and upstream slopes with a crest width of 6 m wide. The starter wall will be constructed in two phases, with the first phase raising the wall to elevation 1055 mamsl (11 m high wall) and phase 2 raising it to elevation 1058 mamsl. This will result in the final height of the starter wall of 14 m above the natural ground level. The TSF will be developed / constructed using the upstream method with an overall outer slope of 1V:5H. This will be achieved by constructing inter benches at every 7 m outer wall height increase with the inter slopes at 1V:4H. The final elevation of the TSF will be 1090 mamsl. The final height of the TSF will be 46 m above the lowest natural ground level.</p> <p>Outer toe paddocks will be constructed outside the impounding embankment using material borrowed from the basin. The purpose of the paddocks is to collect runoff from the outer slopes of the facility and any potential tailings spillage. The paddocks are designed to contain the 1:100 year storm runoff and will be provided with emergency overflow spillways.</p>  |
| Under Drains & Decanting system  | <p>The underdrainage system has been designed to control the phreatic surface, to assist with consolidation of the tailings material and to minimise the hydraulic gradient over the liner. The system consists of the following:</p> <p>A toe drain, which runs along the inside toe of the starter wall; and</p> <p>A network of finger drains located on top of the geomembrane to reduce the hydraulic gradient over the barrier system.</p> <p>These drains have been designed as filter drains consisting of a series of filter sand, 6 mm and 19 mm stone aggregate. The intercepted seepage is collected using slotted corrugated HDPE pipes.</p> <p>An intermediate decant intake, which consist of a multi-stage stacked concrete rings, will be constructed towards the outer wall for decanting supernatant during the early development of the facility. A permanent penstock decant consisting of a 20 m high concrete tower and a multi-stage stacked concrete rings used to final elevation of 1090 mamsl will be constructed towards the centre of the TSF. When supernatant water reaches the permanent penstock decant the intermediate decant system will be sealed off.</p> <p>Paddocks will be constructed at the outside perimeter of the starter wall to collect all the run-off water from the surface of the TSF slopes or any potential tailings spillage and allow the run-off water to evaporate.</p> |
| Access and Access Control        | <p>A perimeter road will be constructed around the TSF for access during operations, routine inspection and maintenance.</p> <p>There is an existing access road to the TSF area on the farm Mimosa, which will be used. A perimeter fence is already established on site.</p>   |
| Waste Minimisation               | <p>No re-processing of the tailings is envisaged in future.</p> <p>No opportunities for the reduction of the tailings production rate are envisaged.</p>   |
| Rehabilitation                   | Being an upstream constructed facility, concurrent rehabilitation work will be able to be carried out on the outer slopes of the facility. The overall outer slope will be 1:5 with intermediate slopes between benches at 1:4.  |

| Feature      | Detail  |
|--------------|---|
| Monitoring   | <p>The monitoring of the TSFs will include:</p> <ul style="list-style-type: none"> <li>• Safety aspects e.g. monthly review of freeboard during operational phase, presence of seepage, functioning of blanket drains etc., quarterly inspections (operational phase) and annual audits.</li> <li>• Groundwater pollution aspects including monitoring of nine boreholes (four deep, four shallow and one near the Elands River) located on the perimeter of the TSF to ascertain upstream and downstream groundwater levels and quality including, NO<sub>3</sub>, Ca, Mg, Fe, Mn, Na, Cl, K, SO<sub>4</sub>, HCO<sub>3</sub>, PO<sub>4</sub>, Cr (VI) and piezometric level. Monitoring frequency of major cations and anions quarterly, minor constituents annually after 2 years of quarterly monitoring – quarterly report.</li> <li>• Vegetation cover and success rate. The rehabilitation and vegetation of the outer slope of the TSF will be done during the operational phase – quarterly report.</li> <li>• Erosion damage and general condition of catchment paddocks, drainage outlet pipes, solution trench and sumps – quarterly report.</li> <li>• Dust generation – annual report.</li> </ul> |
| Dust Control | <p>Rehabilitation and vegetation of the TSF outside slopes reduces the risk of dust generation. During the construction of the TSF containment walls, dust suppression will be undertaken by wetting roads and TSF walls.</p>   |
| Closure      | <p>Closure of the facility is expected to include:</p> <ul style="list-style-type: none"> <li>• removal of the slurry delivery and return water pumps and pipelines,</li> <li>• sealing the gravity decant outlet,</li> <li>• removal of the synthetic liner from and landscaping of the return water dam,</li> <li>• upgrading the toe paddocks,</li> <li>• contour surface water paddocks over the top surface of the facility, and</li> <li>• placement of a low permeability soil cover over the top surface of the facility and vegetation on the area.</li> </ul> <p>Aftercare and maintenance of the site is expected to be maintained for a period of 3 to 5 years after completion of the rehabilitation and closure works described above. Monitoring of surface and groundwater quality in the area is likely to be required to continue for a period of up to 30 years or even longer. This will need to be determined when applying for closure.</p>   |

The safety classification, conducted by Knight Piesold Consulting, for the TSF has been determined in accordance with the South African Code of Practice for Mine Residue Deposits (SANS 10286:1998) and the requirements of Section 3(c) of GN 527 of the MPRDA. The TSF was rated as High Hazard, as the TSF zone of influence encompasses the river on the eastern and southern side of the TSF. The summarised safety classification is included below.

**TABLE 4.5: TAILINGS COMPLEX SAFETY CLASSIFICATION**

| Criteria No. | Criteria   | Comment  | Safety Classification |
|--------------|--|--|-----------------------|
| 1            | No. of Residents in Zone of Influence            | The TSF zone of influence is thought to impact more than 10 residents. | High Hazard           |
| 2            | No. of Workers in Zone of Influence              | It is thought that between 11 and 100 workers will be at risk.         | Medium Hazard         |
| 3            | Value of 3rd party property in zone of influence | It is thought that the replacement value would more than R20 million.  | High Hazard           |
| 4            | Depth to underground mine workings               | The depth of underground workings will be > 200 m                      | Low Hazard            |

#### *Environmental classification for the TSF*

In accordance with Section 5 GN632 of the NEM:WA, mine residue stockpiles need to be classified taking into account Regulation 8 of GN R634 of 2013, which references the following associated National Norms and Standards:

- National Norms and Standards for the assessment of waste for landfill disposal (GN R635 of 2013).

- National Norms and Standards for disposal of waste to landfill (GN R636 of 2013).

The tailings has been classified as a type 3 waste, and therefore needs to comply with a Class C landfill liner design facility. The return water dam shall comply with the same landfill liner classification as the tailings dam.

A new tailings pipeline and return water pipeline will be constructed from the plant area to the TSF area. These will follow along the same servitude and will cover an area of 11.4 ha (the total servitude is 30m in width). The pipelines will be approximately 3.8 km in length and will be constructed on plinths. Each plinth will be approximately 300 mm high. The tailings pipeline will have a diameter of 300 mm and the return water pipeline will have a diameter of 150 mm. The tailings (in the form of slurry) delivery rate will be approximately 420 tonnes per hour.

#### **4.3.8 WATER SUPPLY AND USE**

##### **4.3.8.1 Potable water**

The infrastructure included in the approved EIA will be applicable for the project for the construction and operational periods. There will be additional water requirements as there will be an additional two years for the Life of Operations, thus water will be required for longer. Potable water will be supplied by Magalies Water. This will be supplied to the mine process plant site via a pipeline from the north-eastern boundary of the mine. For phase A, this pipeline will be routed to the north-eastern boundary of the mine from where contractors will be able to use the water as required. At a later stage (Phase B of the project); the line will be routed to feed the potable water tank and the process water tank at the plant.

The anticipated volume of water required is 5 mega liters of potable water per day for reagents, human consumption and make-up process water.

New water storage reservoirs will be constructed within the Concentrator Complex. These reservoirs will have a total capacity of approximately 3 mega liters, will cover a footprint of 0.3 ha and will be in steel tanks.

##### **4.3.8.2 Mine Water Supply System**

The capacities and infrastructure included in the 2008 EIA will be applicable for the proposed changes to the Bakubung Mine.

Make up water for mining activities will be drawn from the main supply reservoir and all water will, where appropriate, be recycled to minimise demand. Underground mining water will gravitate from surface reservoirs to points of application, and all run-off water will be collected and pumped to underground settlers. The clear water from the settlers will be recycled and reused.

Water from the change houses may also be utilised as process water, where possible.

#### **4.3.8.3 Process water supply system**

The capacities and infrastructure included in the 2008 EIA will be applicable for the proposed changes to the Bakubung Mine.

Make up water will be drawn from the main supply reservoir on site and recycled to minimise demand. Tailings will be pumped to the TSF and the clear water will be returned to the plant. Water can also be sourced from the sewage treatment plant (discussed in Section 4.3.12). This will be subject to test work confirming suitability.

#### **4.3.9 POWER SUPPLY AND USE**

The electrical power will be fed to the process plant site from the existing infrastructure situated on the mine. During construction, the mine feed will be brought into the construction area and stepped down to 400V via a single 630kVA miniature substation. Contractors will make allowances for all equipment required to distribute power from the miniature substation to their required facilities.

During Phase 1 of the project, the main backbone for all reticulation will be installed; namely, the extension to the existing mine 33kV substation. From this substation, power will be routed to the plant via a 33kV overhead line. Power will be stepped down to 11kV via two 40MVA power transformers and fed into the new plant main 11kV substation. The phase 1 installation requires power and as such, the motor control centres in this area; as well the reticulation to this area, will be installed. Phase B will see the rest of the electrical reticulation installed to the relevant motor control centres situated in each area.

New gensets will be installed on site; this will include a 1 MVA genset to be placed at the Shaft bank, 200 kVA genset to be placed at the security offices and a 2 MVA genset to be placed at the Concentrator Complex.

A photovoltaic solar plant is also proposed for the project. The rating will be between 15 MWp to 18 MWp depending on a detailed evaluation of solar irradiation at the site and whether fixed tilt or single axis tracking tilt solar panels are to be used. The energy delivered per year is expected to be ~33GWh (based on 15MWp). The solar plant will cover an area of 22 ha and be located west of the Concentrator Complex.

#### **4.3.10 PROCESS AND STORM WATER MANAGEMENT**

There are proposed changes to the management of process and storm water on site. This includes additions and changes to the storm water infrastructure that will be constructed to cater for changes to

the operations and layout. The full layout of the current storm water management plan is included in Figure 4-2.

The approved EIA included the construction of three dams south of the Concentrator Complex; one polluted water dam, one dirty water dam and one storm water dam. Of these dams, only one dam has been constructed as a PCD (referred to as the eastern 'dirty water dam') and the storm water dam will no longer be built. Two smaller PCDs will now be constructed west of the existing PCD in the place of the polluted water dam. The overall footprint remains similar. The one will be concrete lined and the other will be uPVC lined. They will have a total volume of 70 000 m<sup>3</sup> and cover an area of 4.2 ha. There will be a spillway between the two PCDs and the concrete lined PCD will have a silt trap.

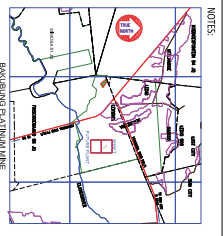
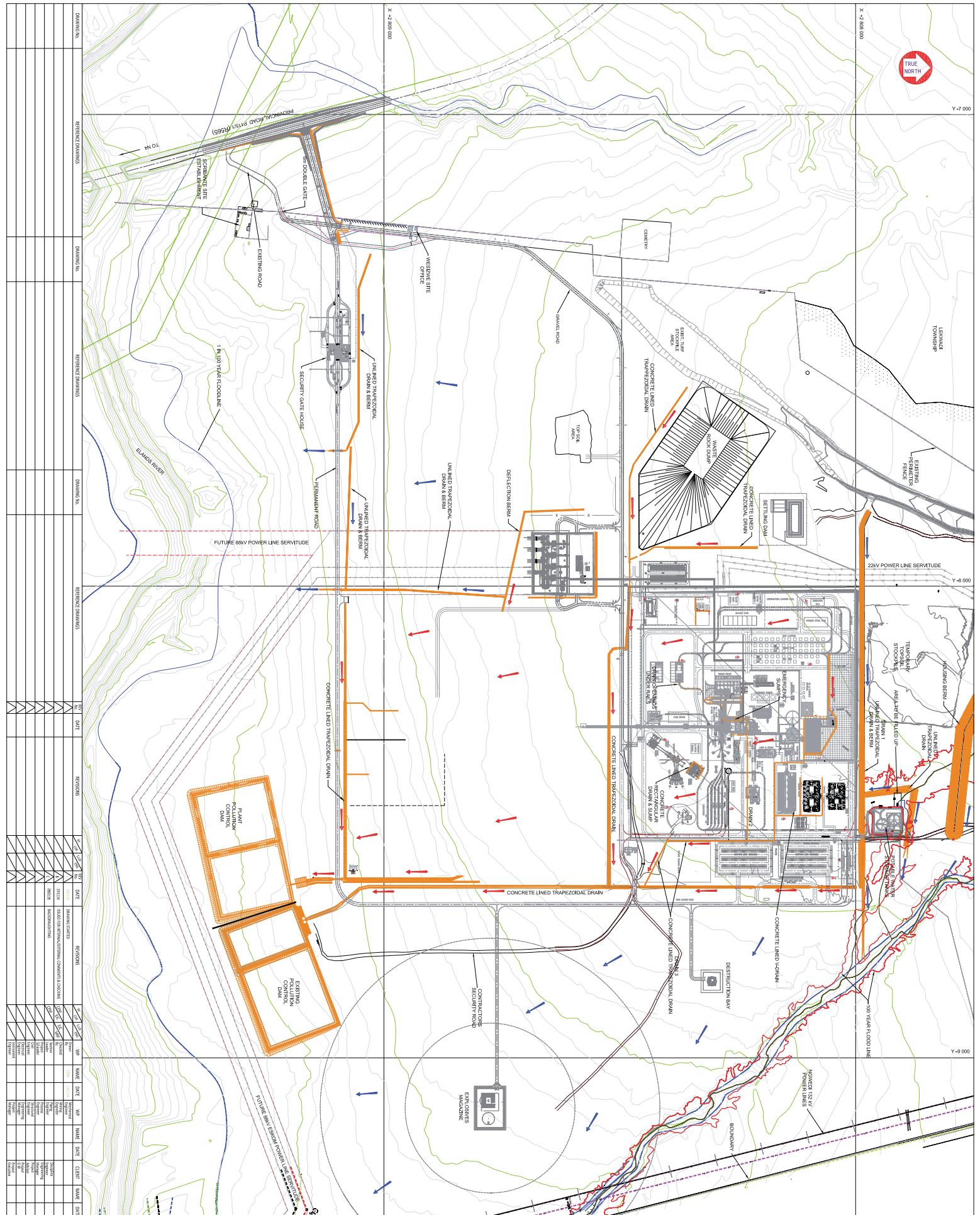


X-7 000

Y-8 000

X-2 000 000

Y-3 000



→ POLLUTED STORM WATER  
→ UNPOLLUTED STORM WATER

| COORDINATE LIST              |          |            |  |
|------------------------------|----------|------------|--|
| WGS 84 (G2011) SURVEY SYSTEM |          |            |  |
| MAIN SHAF                    | Y        | X          |  |
| VENT SHAF                    | -408 886 | 208282 000 |  |
| VENT SHAF                    | -488 055 | 208380 028 |  |

**WorleyParsons** Approved Drawing  
 Name: Designation: Inlt. Signature: Date:

**WorleyParsons**

**Weston**

**BAKUBUNG PLATINUM MINE**

**STORMWATER DRAINAGE AND BERTHS STORMWATER MANAGEMENT PLAN LAYOUT**

**WorleyParsons**

**Weston**

**BAKUBUNG PLATINUM MINE**

**STORMWATER DRAINAGE AND BERTHS STORMWATER MANAGEMENT PLAN LAYOUT**

| NO. | DATE       | BY | CHKD. | REVISION          |
|-----|------------|----|-------|-------------------|
| 1   | 2023/08/01 | WJ | WJ    | ISSUED FOR PERMIT |
| 2   | 2023/08/01 | WJ | WJ    | ISSUED FOR PERMIT |
| 3   | 2023/08/01 | WJ | WJ    | ISSUED FOR PERMIT |
| 4   | 2023/08/01 | WJ | WJ    | ISSUED FOR PERMIT |
| 5   | 2023/08/01 | WJ | WJ    | ISSUED FOR PERMIT |
| 6   | 2023/08/01 | WJ | WJ    | ISSUED FOR PERMIT |
| 7   | 2023/08/01 | WJ | WJ    | ISSUED FOR PERMIT |
| 8   | 2023/08/01 | WJ | WJ    | ISSUED FOR PERMIT |
| 9   | 2023/08/01 | WJ | WJ    | ISSUED FOR PERMIT |
| 10  | 2023/08/01 | WJ | WJ    | ISSUED FOR PERMIT |

#### 4.3.11 GENERAL AND HAZARDOUS WASTE MANAGEMENT

General and hazardous waste will be temporarily stored on site in the salvage yard. Waste that can be recycled will be separated on site for collection by an appropriate recycling company. Remaining waste will be sent for final disposal at registered waste facilities e.g. municipal landfill for general waste and an H:H landfill site for hazardous waste. The identification of the landfill sites is dependent upon transportation costs, disposal costs, capacity of the landfill site and permitting status. Waste streams include paper and cardboard, scrap metal, general waste, used oil and hazardous waste. The salvage yard will be approximately 1000 m<sup>2</sup>.

#### 4.3.12 SEWAGE SLUDGE MANAGEMENT

During construction, there will be provision and maintenance of portable sanitation facilities. These will be routinely cleaned and sewage disposed of at a licensed sewage treatment plant.

A sewage treatment plant was included in the approved EIA and EMP. It was previously to be located within the Shaft Complex and will now be located (along with the sewage pipelines) north-west of the new PCDs. The sewage treatment plant will have an increased capacity to cater for the additional housing development. The sewage treatment plant will cover 0.44 ha and will have a new capacity of 600 kl per day.

There are no requirements for sewage disposal from the concentrator plant while the Phase A equipment is operational. During the operation of Phase B, sewage disposal will gravitate to the sewage treatment system. Sewage from the various process plant buildings will be reticulated via underground PVC pipelines to a sump located at the sewage treatment plant.

#### 4.3.13 TRANSPORT SYSTEMS

The mine lies approximately 3.5 km southwest of Sun City. Access to the mine is on the east of the R556 provincial road, while an access to the TSF is off the Phatsima road.

The access to mine has already been constructed. Only the first 200 m of this southern access road (SAR) has been constructed. The remainder of the paved access road that will run along the southern boundary of the mine project area and parallel to the eastern site boundary has been cleared but still needs to be completed. This access road to the mine has already been approved and will be used for the project. The approved road will be paved and have widths between 3 m and 6 m.

A temporary gravel access road runs along the western boundary of the process plant before turning east to line up with future process plant roads. This will be used during the ongoing construction phase.

The existing access road to the TSF will be used, though a service road along the TSF pipeline will also be constructed as part of this project.

#### **4.3.14 SITE SUPPORT SERVICES**

The storage of dangerous goods has been approved, though the storage capacity will now be increasing on site. The dangerous goods to be stored at the Concentrator and Shaft Complexes will include, but is not limited to, paraffin, degreasing fluids, lubricants, solvents, electrical cleaner, activator, xanthate, frother, depressant, flocculant and diesel. The total capacity of storage will be above 500 m<sup>3</sup>.

#### **4.3.15 HOUSING AND EMPLOYMENT**

Phase 1 of the Gabonewe Residential Estate (mine housing) has been approved and Phase 1a, which will be east of the Phase 1, is being proposed as part of this project. Phase 1a will cover 22 ha, comprise 400 houses and will include residential stands, single houses and apartments, as well as a primary school. Electrical cables, water, sewage and storm water infrastructure will link up to the Phase 1 housing. Phase 1 and Phase 1a will be connected by a new bridge. The security bridge at the northern section of the housing will be refurbished. Housing will be for operation employees.

Houses and apartments will be constructed with brick and mortar.

There will be an additional 570 jobs created during the construction phase but no additional jobs during the operational phase of the project. The mine housing will be available for operational phase mine workers.

#### **4.3.16 DECOMMISSIONING AND CLOSURE**

Following the end of the LOM, the site will be cleared where infrastructure will be dismantled and / or be demolished and all equipment will be removed from the site. A closure plan will be developed prior to the application for a closure certificate. The closure plan will detail what will happen to each facility or infrastructure present on site. At this stage it is planned that the mine facilities that can be utilised by the community e.g. the housing and training/community centre will remain. The facilities that cannot be utilised by the community will be demolished and sold off where possible.

The closure objectives will be to return the land use as closely as possible to pre-mining land use of grazing; this will be done through the implementation of the rehabilitation plan (Section 29.1.3). The TSF will remain on site indefinitely and will be vegetated with an end use plan after closure for pasture grazing land.



## 5 POLICY AND LEGISLATIVE CONTEXT

This section outlines the key legislative requirements applicable to the proposed project. Table 5.1 below provides a summary of the applicable legislative context and policy.

**TABLE 5.1: LEGAL FRAMEWORK**

| Applicable legislation and guidelines used to compile the report   | Reference where applied                                     | How does this development comply with and respond to the policy and legislative context   |
|--|---|---|
| Mineral and Petroleum Resources Development Act No. 28 of 2002 (MPRDA) and Regulations   | As outlined in Table 5.2                                    | BPM will apply for an amendment to their mining right in terms of the MPRDA.<br>BPM has applied for an amendment to their EMP,  |
| National Environmental Management Act No. 107 of 1998 (NEMA)   | As outlined in Table 5.2                                    | An application for environmental authorisation in terms of listed activities in accordance to NEMA has been applied for. The NEMA application was submitted on 30 September 2015 to the DMR. A copy of the application form and acknowledgment of receipt is attached in Appendix E.                  |
| Regulations 983 (Listing Notice 1), 984 (Listing Notice 2) and 985 (Listing Notice 3) in terms of NEMA   | As outlined in Section 4.2                                  |   |
| Guideline on the need and desirability in terms of the Impact Assessment (EIA) Regulations, 2010, GNR. 891 of 2014.  | Section 6   | Need and desirability has been taken into account as part of project planning.  |
| National Environment Management: Waste Act No. 59 of 2008 (NEM:WA)   | Section 4.2   | An application for a waste management license in terms of the NEM:WA was submitted 30 September 2015 to the DMR. A copy of the application form and acknowledgment of receipt is attached in Appendix E   |
| Regulation 921 in terms of NEM:WA  | Section 4.2   |   |
| Regulations regarding the planning and management of residue stockpiles and deposits from a prospecting, mining, exploration or production operation in terms of NEM:WA, Regulation 632. | Section 4.3.7<br>Table 26.1                                 | Informs the design requirements for the tailings facility associated with the proposed project.   |
| National Norms and Standards for the assessment of waste for landfill disposal (GNR 635 of 2013)   |   |   |
| National Norms and Standards for the disposal of waste to landfill (GNR 636 of 2013)   |   |   |
| National Water Act No. 36 of 1998 (NWA)  | Section 7.4.1.6, Section 7.8, and Section 28                | An amendment to the existing water use license application will be submitted to the Department of Water and Sanitation for various water uses in accordance to Section 21 of the NWA. As part of the water use license application, exemption in terms of Regulation 704 of 1999 will be applied for. |
| Regulation 704 of 1999 in terms of the NWA   | Section 7.1.3, Section 7.4.1.6, Section 7.8, and Section 28 |   |
| National Environmental Management: Biodiversity Act No. 10 of 2004 (NEM:BA)  | Section 7.4.1.5   | Biodiversity has been taken into account as part of project planning.   |

| Applicable legislation and guidelines used to compile the report                       | Reference where applied        | How does this development comply with and respond to the policy and legislative context   |
|--|--------------------------------|---|
| Mining and Biodiversity Guideline (DEA et al, 2013)                                    | Section 7.4.1.5                | Biodiversity has been taken into account as part of project planning.   |
| National Freshwater Ecosystem Priority Areas 2011 (NFEPA)                              | Section 7.4.1.5                | Biodiversity has been taken into account as part of project planning.   |
| National Veld and Forest Fire Act No. 101 of 1998                                      | Section 7.8 and Section 28     | Fire management has been taken into account as part of project planning.  |
| International Union for Conservation of Nature (IUCN)                                  | Section 7.4.1.5                | Biodiversity has been taken into account as part of project planning.   |
| National Forest Act No. 84 of 1998 (NFA)   | Section 7.4.1.5                | Permit applications will have to be made to the DAFF and READ to obtain the required permission to remove and/or translocate protected species in terms of the NFA. |
| Conservation of Agriculture Resources Act No. 43 of 1983                               | Section 7.4.1.5 and Section 28 | Agriculture has been taken into account as part of project planning.  |
| National Protected Areas Expansion Strategy 2008 (NPAES)                               | Section 7.4.1.5                | Biodiversity has been taken into account as part of project planning.   |
| South African National Botanical Institute (SANBI) Integrated Biodiversity Information | Section 7.4.1.5                | Biodiversity has been taken into account as part of project planning.   |
| Rustenburg Local Municipality Integrated Development Plan                              | Section 6                      | Land planning has been taken into account as part of project planning.  |
| Moses Kotane Local Municipality Integrated Development Plan                            | Section 6                      | Land planning and economic development has been taken into account as part of project planning.   |
| Bojanala District Municipality Integrated Development Plan                             | Section 6                      | Land planning has been taken into account as part of project planning.  |
| National Heritage Resource Act No. 25 of 1999  | Section 28                     | Heritage has been taken into account as part of project planning.   |
| National Environmental Management: Air Quality Act 39 of 2004                          | Section 28                     | Requirements of the NEMAQA have been taken into consideration.  |
| South African Code of Practice for Mine Residue Deposits (SANS 10286:1998)             | Section 4.3.7                  | Mine residue planning has been taken into account as part of project planning.  |

This document has been prepared strictly in accordance with the DMR EIA and EMP Report template format, and was informed by the guidelines posted on the official DMR website. This is in accordance with the requirements of the MPRDA. In addition, this report complies with the requirements of the NEMA. The relevant criteria are indicated in Table 5.2.

**TABLE 5.2: EIA REPORT REQUIREMENTS**

| EIA and EMP report requirement as per the DMR template | EIA and EMP report requirements as per the 2014 NEMA regulations                     | Reference in the EIA report |
|--|--|-----------------------------|
| <b>Part A of DMR report template</b>                   | <b>Appendix 3 of the NEMA regulations</b>  | -                           |
| The EAP who prepared the report                        | Details of the EAP who prepared the report.  | Section 1.1                 |
| Expertise of the EAP                                   | Details of the expertise of the EAP, including curriculum vitae.                     | Section 1 and Appendix B    |
| Description of the property                            | The location of the activity, including - the 21 digit Surveyor General code of each | Section 2                   |

| EIA and EMP report requirement as per the DMR template  | EIA and EMP report requirements as per the 2014 NEMA regulations   | Reference in the EIA report |
|---|--|-----------------------------|
|   | cadastral land parcel. Where available the physical address and farm name. Where the required information is not available, the coordinates of the boundary of the property or properties.   |                             |
| Locality plan   | A plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken or on land where the property has not been defined, the coordinates within which the activity is to be undertaken | Section 3                   |
| Description of the scope of the proposed overall activity   | A description of the scope of the proposed activity, including all listed and specified activities triggered.  | Section 4.1 and Section 4.2 |
| Description of the activities to be undertaken  | A description of the scope of the proposed activity, including all listed and specified activities triggered and being applied for and a description of the associated structure and infrastructure related to the development   | Section 4.2 and Section 4.3 |
| Policy and legislative context  | A description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context  | Section 5                   |
| Need and desirability of the proposed activity  | A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.  | Section 6                   |
| Motivation for the preferred development footprint within the approved site including                           | A motivation of the preferred development footprint within the approved site including   | Section 7                   |
| A full description of the process followed to reach the proposed development footprint within the approved site | A full description of the process followed to reach the proposed development footprint within the approved site  | Section 7                   |
| Details of the development footprint alternatives considered  | Details of all the alternatives considered.  | Section 0                   |
| Details of the public participation process followed  | Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs.  | Section 7.2                 |
| Summary of issues raised by IAPs  | A summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them.   | Section 7.3                 |
| Environmental attributes associated with the development footprint alternatives                                 | The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.   | Section 7.4                 |

| EIA and EMP report requirement as per the DMR template  | EIA and EMP report requirements as per the 2014 NEMA regulations   | Reference in the EIA report |
|---|--|-----------------------------|
| Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts including the degree of the impacts   | The impacts and risks identified, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed, may cause irreplaceable loss of resources and can be avoided, managed and mitigated.  | Section 7.5                 |
| Methodology used in determining the nature, significance, consequence, extent, duration and probability of potential environmental impacts and risks.   | The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks.   | Section 7.6                 |
| The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternative will have on the environment and the community that may be affected.                             | Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.  | Section 7.7                 |
| The possible mitigation measures that could be applied and the level of risk  | The possible mitigation measures that could be applied and level of residual risk.   | Section 7.8                 |
| Motivation where no alternative sites were considered   | If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such.   | Section 7.9                 |
| Statement motivating the alternative development location within the overall site   | A concluding statement indicating the preferred alternatives, including preferred location within the approved site.   | Section 7.10                |
| Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (in respect of the final site layout) through the life of the activity | A full description of the process undertaken to identify, assess and rank the impacts the activity and associated structure and infrastructure will impose on the preferred location through the life of the activity including a description of all environmental issues and risks that were identified during the environmental impact assessment process and an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures. | Section 8                   |
| Assessment of each identified potentially significant impact and risk   | An assessment of each identified potentially significant impact and risk including cumulative impacts, the nature, significant and consequence of the impact and risk, the extent and duration of the impact and risk, the probability of the impact and risk occurring, the degree to which the impact can be reversed, the degree to which the impact and risk may cause irreplaceable loss of a resources and the degree to which the impact and risk can be mitigated.   | Section 9                   |
| Summary of specialist reports   | Where applicable the summary of the findings and recommendations of any specialist report complying with Appendix 6 of these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report.   | Section 10                  |
| Environmental impact statement  | An environmental impact statement which contains a summary of the key findings of  | Section 11                  |

| EIA and EMP report requirement as per the DMR template   | EIA and EMP report requirements as per the 2014 NEMA regulations  | Reference in the EIA report |
|--|---|-----------------------------|
|  | the environmental impact assessment, a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers and a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives  |                             |
| Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr | Based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation  | Section 12                  |
| Final proposed alternatives  | The final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment   | Section 13                  |
| Aspects for inclusion as conditions of authorisation   | Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation  | Section 14                  |
| Description of any assumptions, uncertainties and gaps in knowledge                                | A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed   | Section 15                  |
| Reasoned opinion as to whether the proposed activity should or should not be authorised            | Reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation  | Section 16                  |
| Period for which environmental authorisation is required   | Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised   | Section 17                  |
| Undertaking  | An undertaking under oath or affirmation by the EAP in relation to the correctness of the information provided in the reports, the inclusion of comments and inputs from stakeholders and IAPs, the inclusion of inputs and recommendations from the specialist reports where relevant and any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties | Section 18                  |
| Financial provision  | Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts  | Section 19                  |
| Deviation from the approved scoping report and plan of study                                       | An indication of any deviation from the approved scoping report, including the plan of study, including any deviation from the methodology used in determining the  | Section 20                  |

| <b>EIA and EMP report requirement as per the DMR template</b>  | <b>EIA and EMP report requirements as per the 2014 NEMA regulations</b>  | <b>Reference in the EIA report</b> |
|--|--|------------------------------------|
|  | significance of potential environmental impacts and risks; and a motivation for the deviation  |                                    |
| Other information required by the competent authority  | Any specific information required by the competent authority.  | Section 21                         |
| Other matter required in terms of section 24(4)(a) and (b) of the Act.   | Any other matter required in terms of section 24(4)(a) and (b) of the Act.   | Section 22                         |
| <b>Part B of the DMR report template</b>   | <b>Appendix 4 of the NEMA regulations</b>  | -                                  |
| Details of EAP   | Details of the EAP who prepared the EMPr and the expertise of that EAP to prepare the EMPr, including a curriculum vitae   | Section 23                         |
| Description of the aspects of the activity   | A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description  | Section 24                         |
| Composite map  | A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers  | Section 25                         |
| Description of impact management objectives including management statements  | A description of the impact management objectives, including management statements,  | Section 26                         |
| The determination of closure objectives  | identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including planning and design, pre-construction activities, construction activities, rehabilitation of the environment after construction and where applicable post closure; and where relevant, operation activities | Section 26.1                       |
| The process for managing any environmental damage, pollution, pumping and treatment of extraneous water or ecological degradation as a result of undertaking a listed activity | -  | Section 26.2                       |
| Potential acid mine drainage   | -  | Section 26.3                       |
| Steps taken to investigate, assess and evaluate the impact of acid mine drainage   | -  | Section 26.4                       |
| Engineering or mine design solutions to be implemented to avoid or remedy acid mine drainage   | -  | Section 26.5                       |
| Measures that will be put in place to remedy any residual or cumulative impact that may result from acid mine drainage   | -  | Section 26.6                       |
| Volumes and rate of water use required for the mining  | -  | Section 26.7                       |
| Has a water use license been applied for?  | -  | Section 26.8                       |

| EIA and EMP report requirement as per the DMR template   | EIA and EMP report requirements as per the 2014 NEMA regulations   | Reference in the EIA report |
|--|--|-----------------------------|
| Impacts to be mitigated in their respective phases   | -  | Section 26.9                |
| Impact management outcomes   | A description and identification of impact management outcomes required for the aspects contemplated in paragraph  | Section 27                  |
| Impact management actions  | A description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes be achieved, and must, where applicable, include actions to avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; comply with any prescribed environmental management standards or practices; comply with any applicable provisions of the Act regarding closure, where applicable comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable. | Section 28                  |
| Financial provision  |  | Section 29                  |
| Mechanism for monitoring compliance with and performance assessment against the environmental management programme and reporting thereon | The method of monitoring the implementation of the impact management actions   | Section 30                  |
|  | The frequency of monitoring the implementation of the impact management actions  |                             |
|  | An indication of the persons who will be responsible for the implementation of the impact management actions   |                             |
|  | The time periods within which the impact management actions must be implemented  |                             |
|  | The mechanism for monitoring compliance with the impact management actions   |                             |
|  | A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations   |                             |
| Environmental Awareness Plan   | An environmental awareness plan describing the manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work; and risks must be dealt with in order to avoid pollution or the degradation of the environment   | Section 31                  |
| Specific information required by the competent authority   | Any specific information that may be required by the competent authority   | Section 32                  |
| Undertaking  | -  | Section 33                  |

## 6 NEED AND DESIRABILITY OF THE PROPOSED PROJECT

The need and desirability of the proposed project is described below. This section has been compiled taking into account the need and desirability guidelines in terms of the environmental impact assessment regulations 891 of 2014.

The motivation for the project as outlined by BPM is provided below:

- The waste rock on site has economic value as it can be utilised as aggregate. Selling the waste rock will perform two functions, maximise its economic potential and reduce the size of the waste rock dump on site.
- The tailings and return water pipeline is necessary for the transfer of tailings to the TSF and for transferring return water from the TSF to the plant for re-use in the process, reducing the need for additional water on site. A TSF is required for the mine to operate.
- Through various optimisation studies it has been established that BPM can hoist faster with a shorter shaft and thus the concentrator capacity needs to increase to accommodate the receipt of material.
- Phase 1a mine housing is desirable to increase the number of houses available for mine employees.
- The photovoltaic solar plant on site will allow for the generation of renewable energy on site decreasing the need for electricity from non-renewable sources.
- Infrastructure within the Shaft and Concentrator Complexes are to be shifted for optimisation of layouts.

Of importance to note is that this project is an amendment to an approved project, therefore location alternatives are limited (refer to Section 7.1 for further details). Preferred alternative locations are described in Section 6.1 below in context of mitigation measures applied to impacts.

### 6.1 ECOLOGICAL SUSTAINABLE DEVELOPMENT AND USE OF NATURAL RESOURCES

Due to the nature of mining projects, impacts on sensitive biodiversity areas, linkages between biodiversity areas and related species and the role that they play in the ecosystem are probable. The proposed project also has the potential to directly disturb vegetation, vertebrates and invertebrates. In addition to this, soil is a valuable resource that supports a variety of ecological functions. The proposed project has the potential to damage soil resources through physical disturbance and/or contamination, which has a direct impact on the potential loss of the natural capability of the land.

As part of the project, independent biodiversity and soil specialists were appointed to determine the sensitivity of the proposed additional project area. In this regard the approved mine and proposed project site falls within a CBA2 area (it should be noted it was not categorised as a CBA at the time of authorising the approved operations in 2009), it includes areas of high biodiversity sensitivity as well as three species (one mammal and two plant species) of conservation concern (identified on site in the most recent survey



(refer to Section 7.4.1.5 for further information)). These can be impacted as part of the proposed project (Refer to Appendix F for the detailed assessment). Linked to this, is the loss of soil functionality and related land capability as an ecological driver for vegetation and ecosystems that rely on soil (Refer to Appendix F for the detailed assessment). Measures that were considered to avoid the destruction and disturbance of biodiversity and the loss of soil resources included limiting the project footprint to what is absolutely necessary as well as shifting layout footprints where possible. It needs to be taken into consideration that the current project is for changes to an already approved project and layout and thus there are limitations on where infrastructure can be placed.

Where sensitive biodiversity areas and the removal of protected trees could not be avoided, mitigation measures that focus on ensuring ecological sustainability include the implementation of sound veldt management principles including fire management and grazing techniques to ensure optimal vegetation condition and biodiversity levels. Other mitigation measures for rehabilitation aim at restoring pre-mining land capability to grazing and wilderness potential, where applicable.

The approved project is located near the Elands River and Sandspruit as well as an unnamed tributary of the Elands River, ephemeral drainage lines and channels and unchannelled and channelled valley bottom wetlands. The delineated watercourses within the approved project area ranged from having high to very high ecological importance and sensitivity. The Sandspruit has moderate ecological importance and sensitivity. The aquatic specialist indicated that the Sandspruit and unnamed tributary of the Elands River are systems important for the provision of services to the terrestrial fauna of the area and have a fair importance from a socio-cultural point of view. The impacts associated with the approved project and this project are discussed in Appendix F. Mitigation measures include minimising footprints to what is absolutely necessary, implementing appropriate storm water management measures, sediment control measures, rehabilitation of disturbed areas and re-alignment of infrastructure where possible, further details are contained in Section 28. Not proceeding with this project, particularly the tailings pipeline will not make the approved project viable as tailings will need to be transported to the TSF and any route will cross over the Sandspruit. The chosen pipeline route has a lower impact in terms of crossing over the Sandspruit (refer to Section 7.1.1 for further details).

The plant and TSF areas fall within approved footprints and are approved for mining. The tailings and return water pipeline will be located on communal grazing land. Grazing land will still be available and accessible to the community and mitigation to ensure accessibility includes having the pipeline on plinths which will have the pipeline being 30 cm above the ground. In terms of convenient and safe pedestrian and livestock crossing, overpasses and underpasses at regular intervals or in designated locations along the pipeline route will be provided.

## 6.2 PROMOTING JUSTIFIABLE ECONOMIC AND SOCIAL DEVELOPMENT

The approved project, which has not yet been fully developed, will result in positive socio-economic impacts (Refer to Appendix F for the detailed assessment). This project will also contribute to the support of the local and regional economy. Direct economic benefits will be derived from wages, taxes and profits. Indirect economic benefits will be derived from the procurement of goods and services and the spending power of employees. This project will also provide additional housing for mine employees and an extension to employment as a result of the increased Life of Mine. The Moses Kotane Local Municipality Integrated Development Plan (IDP) (MKLM, 2014), included the BPM housing development as part of their spatial development area for residential development and indicated that a challenge in the municipality is the provision for bulk engineering to cater for residential, commercial and economic development. The Bojanala Platinum District Municipality IDP (BPDM, 2012) indicated that the mining industry makes a viable contribution to the district economy, and platinum mining contributes towards overall economic output of the municipality. The BPDM IDP also indicated that opportunities for small scale mining ventures should be explored, which can apply to BPM being a junior platinum group metals mine. Further to this, through employment of an additional 570 construction employees and the extension of employment from the increased Life of Mine, persons at the mine will gain skills in the construction and operation of a mine and development which contributes to the building of the nation. Management measures that are implemented to further enhance positive socio-economic impacts include the employment of people in local communities (as far as possible), implementing the developed policy and program for the training, development, mentorship, skilling and career progression of BPM's permanent employees, identifying candidates from the local communities for apprenticeships and on-the-job training programmes. BPM have also established the Bakubung-Ba-Ratheo Non-Mining Economic Development Trust (the trust) and the Bakubung-Ba-Ratheo Economic Development Unit (EDU) as part of shareholding agreements between BPM and the *Bakubung-Ba-Ratheo*. The intention of the Trust, EDU, and local economic development projects, and capacity building amongst local businesses is to develop a more self-sufficient and therefore sustainable economy. Further to this, the proposed development will also ensure local economic development through the implementation of projects identified in the social and labour plan (SLP). The projects identified in the SLP were indicated to be identified based on the RLM and MKLM IDP documents and aim to contribute towards the socio-economic development of the area. SLP projects that will be implemented by BPM are focused on improving road infrastructure, small business development, education infrastructure, sports and recreational facilities, housing, skills development, water supply and job creation. Some of the infrastructure related SLP projects were indicated to link to some of the priority needs identified in the MKLM and RLM IDPs.

Due to the expectation of employment associated with mining projects there is a potential for negative socio-economic impacts to occur. In this regard, an influx of job seekers to an area which in turn increases pressure on existing communities, housing, basic service delivery and raises concerns around safety and security. The social specialist indicated that this project is not expected to bring about a

significant influx. The cumulative influx of the approved operations and this project is assessed in Appendix F. Management measures to manage and remedy these impacts include the implementation of a health policy on HIV/AIDs and working together with the *Bakubung-Ba-Ratheo* to manage the development of informal settlements. In addition to this, formal communication structures and procurement procedures have been developed and will continue to be utilised.

## 7 MOTIVATION FOR THE PREFERRED DEVELOPMENT FOOTPRINT ON THE SITE INCLUDING THE PROCESS FOLLOWED TO DEFINE THE PREFERRED DEVELOPMENT ALTERNATIVES

As the BPM has already been authorised and is already under construction, the potential alternatives are limited. Many of the proposed changes to infrastructure at the mine are expansions and/or modifications to authorised structures and thus the location will not change. The location of new structures is also based on the location of already approved structures e.g. the additional mine housing is planned to be adjacent to the approved mine housing; and the diesel store will be within the approved mine shaft area. The only feasible locality alternatives relate to the tailings pipeline route.

Three possible alternative locations for the tailings pipeline route (Option 1A - northern route, Option 1B – central route and Option 2 - southern route) have been considered and assessed. These are described below.

### 7.1 DETAILS OF THE DEVELOPMENT FOOTPRINT CONSIDERED

This section describes location alternatives, alternative means of carrying out the operation, and the consequences of not proceeding with the proposed project.

The main project alternatives to be considered include:

- Location alternatives
- Type of activity alternatives
- Design or layout alternatives
- Technology alternatives
- Operational alternatives
- The “no-go” alternative

As the BPM has already been authorised and is already under construction, the potential alternatives are limited. Many of the proposed changes to infrastructure at the mine are expansions to authorised structures and thus the location will not change. The location of new structures is also based on the location of already approved structures e.g. the additional mine housing is planned to be adjacent to the approved mine housing; and the diesel store will be within the approved mine shaft area. The only feasible locality alternatives relate to the tailings pipeline route.

#### 7.1.1 PROPERTY OR LOCALITY

Applicable alternatives are discussed below. Three possible alternative locations for the tailings pipeline route (Option 1A - northern route, Option 1B – central route and Option 2 - southern route) have been considered and assessed. These are described below:

**Option 1 A - Northern Route**

The pipeline exits the concentrator plant area on the southern boundary, then runs directly westwards along the southern boundary of the plant and crosses under the R565 Rustenburg provincial road. It then passes under Eskom overhead powerlines at an oblique angle, in a south westerly direction towards the tailings storage facility.

Just after the road crossing the pipeline will be located on Bakubung-Ba-Ratheo tribal land. Here it must cross over two tributaries of the Elands River. These floodplains are very wide, making the crossing of the flood plain approximately 400 m long. At the same time it passes under the Eskom overhead powerlines, not at right angles but obliquely.

From here the route is undulating up to the TSF on the farm Mimosa 81 JQ.

*Advantages*

- Most of the pipeline route falls within the mining right area, or on land owned by BPM. This means that BPM would only need to negotiate with only one landowner (Bakubung Ba Ratheo) and one mining right holder (Maseve Investments) along the pipeline route.

*Disadvantages*

- Very wide 400m flood plain, of two tributaries, to cross.
- Increased cathodic protection measures are required when crossing under the Eskom powerlines obliquely.

**Option 1 B - Central Route**

This pipeline route also exits the concentrator plant area on the southern boundary, then runs directly south-westwards from the plant towards the R565 Rustenburg provincial road. The route then crosses under Eskom overhead powerlines at a 90 degree angle, just before passing under the R565. It then continues in a south westerly direction towards the tailings storage facility.

Just after the road crossing the pipeline will be located on *Bakubung-Ba-Ratheo* tribal land. Here it must cross over one tributary of the Elands River. The crossing of the flood plain of this tributary is approximately 360 m long.

From here the route is undulating up to the TSF on the farm Mimosa 81 JQ.

### Advantages

- Most of the pipeline route falls within the mining right area, or on land owned by Wesizwe. This means that Wesizwe would only need to negotiate with only one landowner (*Bakubung-Ba-Ratheo*) and one mining right holder (Maseve Investments) along the pipeline route.
- This route only crosses one tributary of the Elands River and crosses over a narrower floodplain than Option 1A.
- This route passes under the Eskom line at right angles thus minimising electromagnetic induction and electrolytic corrosion.

### Disadvantages

- There is still one watercourse crossing required for this route.

### Option 2 - Southern Route

This route exits the concentrator area on the southern boundary and travels directly south across the Elands River at a narrow point, approximately 120 m wide. Here it turns south west, crosses over Maseve Investment's property, passes perpendicularly under Eskom overhead powerlines, still on Maseve Investment's property, and then passes under the R565 Rustenburg provincial road.

After the R565 the pipeline traverses *Bakubung-Ba-Ratheo* tribal land then crosses the Elands River, for a 2<sup>nd</sup> time. Here the river crossing is also approximately 120 m. From here the route is undulating across the *Bakubung-Ba-Ratheo* tribal land up to the TSF on the Mimosa farm property.

### Advantages

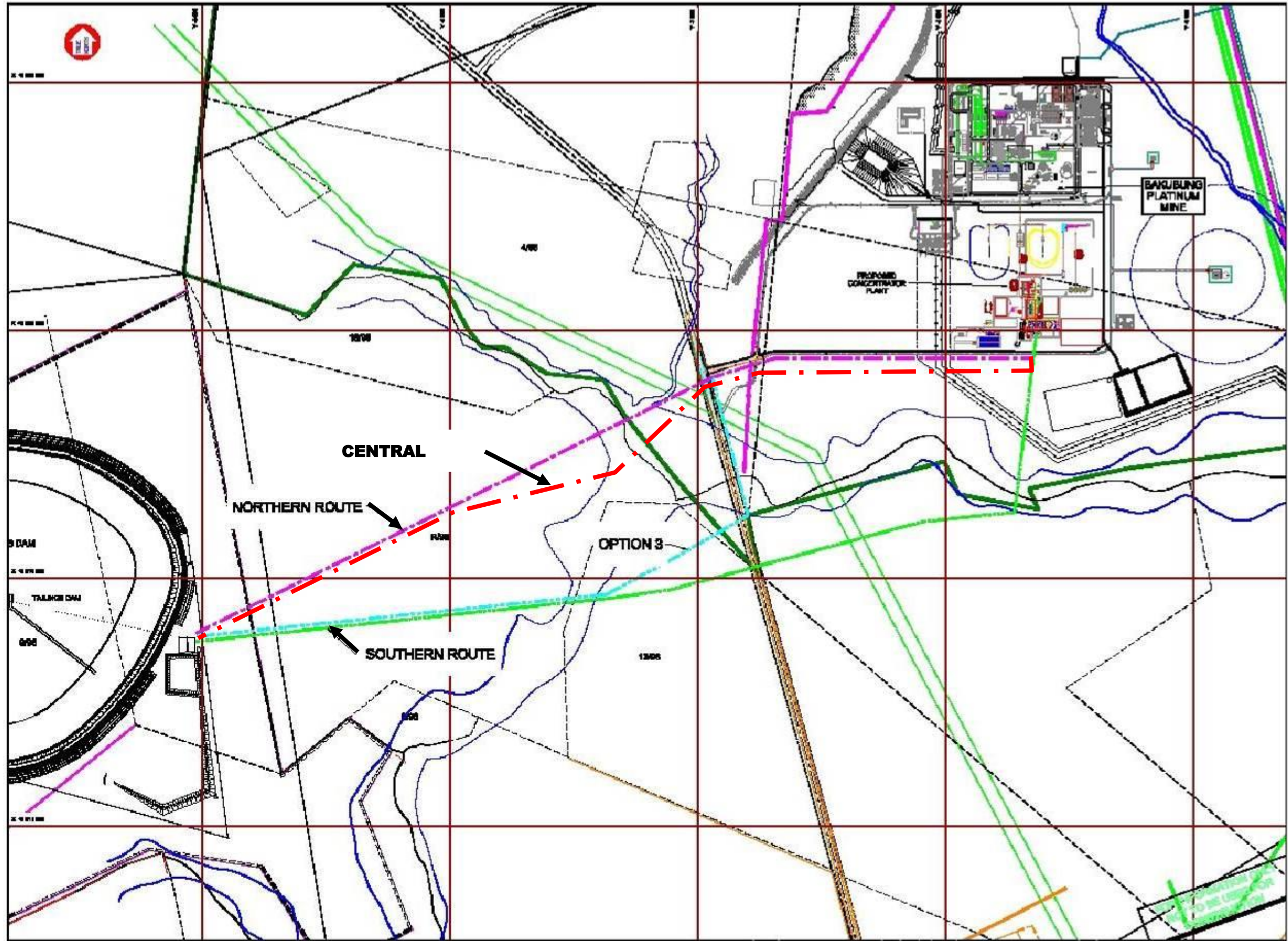
- Narrow river crossings (no wide floodplains).
- This route also passes under the Eskom line at right angles thus minimising electromagnetic induction and electrolytic corrosion.

### Disadvantages

- Negotiate with two landowners (Maseve Investments and *Bakubung-Ba-Ratheo*) and two mining rights owners (Royal Bafokeng and Maseve Investments) along the pipeline route.
- Two river crossings of the Elands River.

The potential impacts of these three routes were assessed in the scoping phase. All three of the route alternatives aim to minimise the overall length of the pipeline and limit river and stream crossings. Most environmental conditions were expected to be similar for all three route alternatives. However, the central (option 1 B) and southern (option 2) routes are preferred because they cross 360 m and 240 m of river/stream area respectively, whereas the northern route crosses 400 m of stream/wetland area. The northern route thus has the greatest potential to negatively impact biodiversity and cause surface water

pollution. One of the landowners along route option 2 has denied BPM access, making this option unfeasible. Therefore the specialists assessed route option 1B.





### 7.1.2 TYPE OF ACTIVITY ALTERNATIVE

The type of activity for the project is platinum mining. This is the future activity planned at the site and this activity will not change as a result of the changes to the mine infrastructure. Therefore different activity alternatives were not considered at the site, as there is only one activity option, and that is to continue with the activity of constructing a mine for platinum mining.

### 7.1.3 DESIGN OR LAYOUT

The tailings pipeline layout alternatives are discussed in Section 7.1.1 above. For reasons already mentioned, alternative layouts for other infrastructure are not feasible.

### 7.1.4 TECHNOLOGY

There are no technology alternatives that have been considered for the project. This is due to the fact that there are no feasible alternative technologies for the infrastructure changes.

### 7.1.5 OPERATIONAL ALTERNATIVES

There are no operational alternatives that have been considered for the project. This is due to the fact that this project is an amendment to an approved project and thus is limited to approved operations.

### 7.1.6 THE "NO-GO" ALTERNATIVE

In accordance with the NEMA Regulations, the no-go alternative is required to be investigated and assessed. The no-go alternative would mean that the changes to infrastructure at the BPM are not undertaken and therefore the associated negative and positive environmental and social impacts will not occur. The status quo would remain.

Proceeding with the project will potentially:

- Increase the direct economic benefit derived from wages, taxes and profits.
- Increase the indirect economic benefits will be derived from the procurement of goods and services and the spending power of employees;
- Optimise resources through the sale of waste rock as aggregate;
- Optimise operations at the Concentrator Complex;
- Provide additional housing for employees;
- Optimise renewable energy options on site;
- Disturb a portion of communal grazing land;
- Disturb additional heritage resources;
- Disturb additional areas of untransformed habitats; and

Add cumulatively to impacts identified for approved operations e.g. air quality, noise

Not going ahead with the project will maintain the environmental and socio-economic status quo.

If this project does not go ahead, particularly the implementation of the tailings and return water pipeline, the approved operations at BPM will not be able to go ahead as planned as tailings will need to be transported to the TSF.

In the unmitigated scenario, assuming no measures are implemented to control the mine's operations, the significance of potential impacts would be high. Assuming effective implementation of the mitigation and monitoring as outlined in the EMP report (Section 28), the significance of impacts can be reduced to acceptable levels. Following specialist investigations, no reasons for not proceeding with the project were identified.

## **7.2 DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED**

This section describes the undertaking of the public participation process and details the information provided to the community, landowners and interested and affected parties (IAPs). The intent was to inform IAPs of what the proposed project will entail, in sufficient detail, in order that they may contribute meaningfully to the identification of impacts and alternatives. The public participation was done in line with the requirements of the NEMA EIA regulations.

### **7.2.1 IDENTIFICATION OF INTERESTED AND AFFECTED PARTIES**

Potential IAPs were identified using existing databases for BPM. The databases included regulatory authorities, traditional tribal authorities, tourist venues and surrounding mines. Additional people and/or organisations were registered as IAPs for the project if they:

- Are landowners or tenants adjacent to or within 100 m of the project,
- Are the local municipality/ ward councillor with jurisdiction in the area,
- Represent the ratepayers association,
- Are an authority or organ of state having jurisdiction in respect of any aspect of the activity,
- Responded to the BID, press advertisements and site posters,
- Attended one of the Bakubung Mine Environmental Forum meetings,
- Attended the Public Open Days,
- Own, operate or administrate infrastructure affected by the project.

A list of all parties that have been identified thus far is included as Appendix E.

### 7.2.2 NOTIFICATION OF LANDOWNERS, LAWFUL OCCUPIERS AND IAPs

The initial public consultation process for the scoping phase of the project was carried out between 16 July 2015 and 24 August 2015. As part of the consultation process, IAPs were notified of the proposed project and the details of the Scoping and EIA process being undertaken through distribution of a Background Information Document (BID). Notifications to IAPs were provided in English and Setswana.

The BID was circulated via registered post, email and by hand to relevant authorities, IAPs and adjacent landowners between 16 and 22 July 2015. Copies of the BID were also left at shops and public buildings in Phatsima, Ledig and Sun City on 16 July 2015.

The BID provided background information on the Project and provided an explanation of the Scoping and EIA process that is currently being undertaken for the project. The BID also invited members of the public to register as IAPs and participate in the EIA process. A response sheet was attached the BID on which IAPs could provide written comments on the proposed project.

IAPs were given a 30 day period to submit comment on the above in accordance with the EIA Regulations (22 July 2015 to 24 August 2015).

Copies and proof of distribution of the public notifications are contained in Appendix E.

### 7.2.3 NOTIFICATION OF AUTHORITIES

#### North West Department of Mineral Resources (DMR)

The DMR was notified of the project via two project meetings held with the DMR on 8 May 2015 and 6 July 2015. As part of the public participation process, a BID was also sent to the DMR on 22 July 2015.

#### North West Department of Water & Sanitation (DWS)

The DWS has been notified of the project through the circulation of the BID on 22 July 2015 and through a meeting held on 12 May 2015. The DWS was also issued with a notice of intent to submit a WULA.

#### North West Department of Rural, Environment & Agricultural Development (NW READ)

The NW READ has been notified of the project through the circulation of the BID on 22 July 2015.

#### Rustenburg Local Municipality and Moses Kotane Local Municipality

Representatives of these municipalities have been notified of the project during the authorities meeting on 13 August 2015 and they have also been sent the BID on 22 July 2015.

### Other Commenting Authorities

In addition to the authorities listed above, the BID was circulated to the following commenting authorities on 22 July 2015:

- Bojanala District Municipality
- North West Parks and Tourism Board and Pilanesberg Game Reserve
- Elands Hex River Water Forum
- Department of Health North West
- Department of Transport, Roads and Community Safety: North West
- Department of Rural Development and Land Reform: North West
- Department of Agriculture: North West
- South African Heritage Resources Agency

Copies and proof of distribution of the authority notifications are contained in Appendix E.

### Media Advertisements and Site Notices

- Press adverts were placed in the following newspapers:
- The Rustenburg Herald in English on 17 July 2015;
- The Sowetan in English on 22 July 2015.

Site notices (A2 size) were placed on 16 July 2015 at the following areas:

- Entrance of the BPM on the R565 (English and Setswana);
- On the BPM fence boundary on R556, just outside of Ledig (English and Setswana)
- At 2 places along the road to Phatsima on the tailings dam property fence (on the farm Mimosa 81 JQ) (2 x English and 2 x Setswana)

In addition to the A2 notices, several A3 notices were also placed at areas where the public would see them:

- On the R565 between the mine and Ledig – Ledig supermarket (English and Setswana)
- At the corner of the R565 and R556 – at the general dealer (English and Setswana)
- At 2 other shops on the R556 between Ledig and Sun City (English and Setswana)
- At the Spar at Sun Village shops, Sun City (English and Setswana)
- Phatsima Community Centre and Library (English and Setswana)
- Phatsima Community Hall (English and Setswana)
- At a shop in Phatsima (English and Setswana)

The press and site notification was undertaken to elicit interest from other IAPs that might not have been identified during the stakeholder identification process.

The adverts and site notices, and proof of placement, are included in Appendix E.

#### **7.2.4 PUBLIC OPEN DAYS AND AUTHORITY MEETINGS**

Authorities meetings have been held with the DMR and DWS (see section 8.2.3 for details).

An additional authority meeting was held at the Wesizwe Community (Information) Centre in Ledig (adjacent to the BPM) on 13 August 2015. Several authorities were invited to the meeting, though only representatives from the Rustenburg Local Municipality and Moses Kotane Local Municipality attended. Copies of the attendance register, minutes of the authorities meetings are in Appendix E.

Two public open days were held with IAPs on 11 and 12 August 2015 in Phatsima and Ledig respectively. The Open Days included posters explaining the project, EIA and WULA process. The posters were in English and Setswana and the SLR team explained the posters in English or Setswana to members of the public who were interested in the project. Copies of the attendance registers, posters, notes and photographs of the open days are in Appendix E.

#### **7.2.5 PUBLIC REVIEW OF DRAFT SCOPING REPORT**

The scoping report and summaries of the report were made available for public review for 30 calendar days from 12 October 2015 until 13 November 2015. The report summaries were available in English, Setswana and Zulu. Copies of the report and summaries were placed at the Phatsima Library, Bakubung Tribal Hall and the Wesizwe Community (Information) Centre. The report and summaries were also made available electronically to IAPs on request.

#### **7.2.6 AUTHORITY REVIEW OF DRAFT SCOPING REPORT**

Copies of the draft scoping report were distributed to commenting authorities for a 30 calendar day review period from 12 October 2015 until 13 November 2015. The reports were circulated to authorities listed above.

#### **7.2.7 PUBLIC REVIEW OF FINAL SCOPING REPORT**

Following review of the draft scoping report, no comments requiring substantial changes to the draft scoping report were received from the public. The only changes required for the final scoping report included updating the public participation section for inclusion of proof of public participation for the draft scoping report and inclusion of requests for information from the public. These are contained in Appendix E. The public have been informed that no substantial changes were made to the draft scoping report for finalisation of the final scoping report and that a copy of the final scoping report is available for review for

a period of 30 days from 16 November 2015 until 07 January 2016 (15 December to 5 January is excluded from timeframes). The public were notified of the submission of the final scoping report to the DMR. Comments received following review of the final scoping report are included in the table below.

#### **7.2.8 AUTHORITY REVIEW OF FINAL SCOPING REPORT**

Following review of the draft scoping report, no comments requiring substantial changes to the draft scoping report were received from authorities. The only changes required for the final scoping report included updating the authority participation section for inclusion of proof of authority participation for the draft scoping report and inclusion of requests for information from authorities. These are contained in Appendix E. Authorities have been informed that no substantial changes were made to the draft scoping report for finalisation of the final scoping report and that a copy of the final scoping report is available for review for a period of 30 days from 16 November 2015 until 07 January 2016 (15 December to 5 January is excluded from timeframes). Authorities were notified of the submission of the final scoping report to the DMR. Comments received following review of the final scoping report are included in the table below.

#### **7.2.9 PUBLIC REVIEW OF DRAFT EIA REPORT**

Following review of the final scoping report, all comments received have been included and address in the draft EIA. The draft EIA was made available for public comment and review from 02 April 2016 to 03 May 2016. Full copies of the EIA and EMP report and summaries were made available for public review at the same venues that the scoping report was made available (Section E). Electronic copies of the EIA and EMP report were made available on the SLR website. CD copies were made available on request. Comments received on the draft EIA will be addressed in the final EIA, which will be submitted to the DMR for consideration. IAPs were notified of the availability of the draft EIA via email, fax, registered post and/or sms.

#### **7.2.10 AUTHORITY REVIEW OF DRAFT EIA REPORT**

Following review of the final scoping report, all comments received have been included and address in the draft EIA. The draft EIA was made available for authority comment and review from 02 April 2016 to 03 May 2016. Full copies of the EIA and EMP report and summaries were made available for authority review at the same venues that the scoping report was made available (Section E). Electronic copies of the EIA and EMP report were made available on the SLR website. CD copies were made available on request. Comments received on the draft EIA will be addressed in the final EIA, which will be submitted to the DMR for consideration. Authorities were notified of the availability of the draft EIA via email, fax, registered post, sms and/or courier where applicable.

### **7.3 SUMMARY OF ISSUES RAISED BY IAPs**

A summary of the issues and concerns raised by IAPs and regulatory authorities is provided in Table 7-1 below. Additional comments received during the review of the draft EIA and EMP report will be included in the Final EIA and EMP.

**TABLE 7.1: SUMMARY OF ISSUES RAISED BY IAPS AND REGULATORY AUTHORITIES**

| IAPs details  |                                   | Date of comment                   | Issue raised   | EAP/Project team's response   | Section and paragraph reference in this report where the issues and or the responses were incorporated  |
|---|-----------------------------------|-----------------------------------|--|---|---|
| Name  | Affiliation                       |                                   |  |   |   |
| <b>Affected Parties</b>   |                                   |                                   |  |   |   |
| <b>Land owners</b>  |                                   |                                   |  |   |   |
| Kgosigadi of the Bakubung Tribe   | Bakubung Tribal Authority         | 4 August 2015                     | Public consultation also to be done in Zulu from now on as there are Zulu speaking people in the community.  | This will be done. Summaries of the reports are available in Zulu as well.  | Appendix E – refer to the scoping summaries.  |
| Kgosigadi of the Bakubung Tribe   | Bakubung Tribal Authority         | 13 October 2015                   | Thank you so much for the report. We have received all your emails, faxes and hard copy of the report. We will look at it and come back to you before closing date.  | Comment is noted  | Appendix E for a copy of the correspondence.  |
| <b>Lawful occupiers of the land (Wesizwe are lawful land occupiers)</b> |                                   |                                   |  |   |   |
| <b>Land owners and occupiers of adjacent land</b>                       |                                   |                                   |  |   |   |
| Mzamani Mdaka   | Sinvent Investments 182 (Pty) Ltd | 27 October 2015                   | Sinvent Investments 182 (Pty) Ltd has been granted a prospecting right on portion 1 of Mimosa 81 JQ and remaining extent of Dorskry 95 JQ. Sinvent kindly request a site plan showing the demarcations of Wesizwe Platinum's current and future operations, specifically the location of the slimes dams, and their boundary limits in relation to portion 1 of Mimosa 81 JQ and R/E of Dorskry 95 JQ. Should this site plan be made available and prove that there will be no encroachment of Wesizwe's planned activities on Sinvent's prospecting right area, then there will be no objection from Sinvent Investments in this regard.  | A map showing cadastral boundaries was provided to Mr Madaka. The map showed that the Bakubung project does not fall on portion 1 of Mimosa 81. We are uncertain where R/E of Dorskry 95 JQ is located, as on the map there is no farm called R/E of Dorskry 95 JQ near the project site. | Appendix E for a copy of the correspondence.  |
| Malebabo Tsolo  | Royal Bafokeng Platinum           | 11 November 2015                  | It is noted from your documentation that some of the proposed infrastructure are in close proximity to the Elands River and may be within the 100m flood lines. Please advise how these impacts would be mitigated. Further the mining operations of RBPlat, Maseve 11 Investments (Pty) Ltd and the BPM are in close proximity, which may result in cumulative environmental impacts. RBPlat would be interested in understanding your monitoring plans, especially with regards to surface and groundwater. It is therefore advisable that further discussions are undertaken to determine the way forward with respect to environmental impacts associated with the proposed changes and the proposed mitigation measures in this regard. | Impacts from the project and mitigation measures have been addressed in this report.  | Refer to Appendix F for the impact assessment. The monitoring requirements are contained in the EMP Report in Section 28. The mitigation measures are provided in the EMP in Table 28.1 |
| <b>Municipal councillors and Municipality</b>                           |                                   |                                   |  |   |   |
| Chonko Monnakgotla (Ledig ward)   | Moses Kotane Local Municipality   | 13 August 2015 at the Authorities | Please distribute the background information documents to the various schools and community centres  | At the meeting it was indicated this would be considered. BIDs had been distributed at the public open days held at the Phatsima Hall   | Section 7.2.5 – locations for reports   |



| IAPs details                 |   | Date of comment                                     | Issue raised   | EAP/Project team's response   | Section and paragraph reference in this report where the issues and or the responses were incorporated |
|------------------------------|---|---|--|---|--|
| Name                         | Affiliation                                     |   |  |   |  |
| 14)                          |   | Meeting, Ledig                                      |  | and Bakubung Hall, where the community had the opportunity throughout the day to come and receive information. The scoping report was distributed to the Bakubung Tribal Hall, the Phatsima Library and the Wesizwe Community (Information) centre which were considered appropriate locations to cater for the communities in Ledig and Phatsima.  |  |
| Jafta Masilo (Ledig ward 30) | Moses Kotane Local Municipality                 | 13 August 2015 at the Authorities Meeting, Ledig    | I would like to know whether the housing will be for the communities or mine workers?  | The housing is intended for the operation employees at the mine.  | Section 4.3.15   |
| Nokwaka Mmemezi              | Rustenburg Local Municipality- IGR Co-ordinator | 13 August 2015 at the authorities site visit, Ledig | How many houses are going to be built?   | 400 additional houses will be built as part of this project (Phase 1a).   | Section 4.3.15   |
| Kelebogile Mekgoe            | Rustenburg Local Municipality                   | 22 October 2015                                     | We have received a copy of the Scoping Report for the EIA for changes to infrastructure at BPM, Ledig. The Rustenburg Local Municipality, Environmental Office would like to conduct the site inspection for the proposed project. Can we arrange a site inspection for first week November (2-6 November 2015). | We suggest that a site visit take place during the EIA Phase of the project which will be in the first quarter of 2016, by this stage the specialist studies would have been conducted and more detailed information will be available and can be presented. We will organise a site visit for this and send through an invitation to you and the Environmental office (please provide the email address of the officer) in early 2016. | Appendix E for a copy of the correspondence.   |
| Kelebogile Mekgoe            | Rustenburg Local Municipality                   | 26 October 2015                                     | Thanks for your response. I also think it will be appropriate to conduct the site inspection once the EIA report is available, in 2016. The contact official responsible is Kelebogile Mekgoe- EIA Officer (014) 590 3185 / kmekgoe@rustenburg.gov.za  | Comment is noted.   | Appendix E for a copy of the correspondence.   |
| Kelebogile Mekgoe            | Rustenburg Local Municipality                   | 18 November 2015                                    | The following should be noted:<br>1. All mitigation measures and the recommendations contained in the scoping report for this activity must be implemented.  | 1. As specified in the scoping report, mitigation measures in the scoping report needed to be refined. Mitigation at scoping level is more high level as specialist studies had not yet been conducted . The mitigation measures as prescribed by specialists and the approved mine EMP have been   | Table 28.1 – mitigation (EMP)  |

| IAPs details         |             | Date of comment | Issue raised  | EAP/Project team's response  | Section and paragraph reference in this report where the issues and or the responses were incorporated  |
|----------------------|-------------|-----------------|---|--|---|
| Name                 | Affiliation |                 |   |  |   |
|                      |             |                 | <ol style="list-style-type: none"> <li>2. The stripped and stockpiled topsoil may be chemically altered due to storage, this can potentially alter the nutrients level in the soil and result in a loss of fertility, therefore proper management of topsoil must be ensured.</li> <li>3. During the operational phase, the tailings disposal facility is susceptible to wind entrainment and can lead to some environmental impacts especially if there are sensitive receptors downwind. It is therefore recommended that proper rehabilitation measures be put in place (i.e. slopes well managed).</li> <li>4. Dust generated by construction activities must be effectively controlled by water spraying and/or other dust-allaying agents.</li> <li>5. An integrated waste management approach that is based on best practices which incorporates reduction, recycling, re-use and disposal must be used.</li> <li>6. A storm water management plan (i.e. storm water diversion channel) must be put in place and the project must take into account the storm water drainage system in the area and how the project could possibly affect it,</li> <li>7. Any complaint from the public during the construction and operation of this project must be attended to by the person involved as soon as possible to the satisfaction of the parties concerned. A complaints register must be kept up to date and shall be produced upon request.</li> <li>8. As far as possible, employment opportunities should be given to the local skilled, semi-skilled and unskilled labour force during the construction and operation phases to stimulate the local and regional economy as per the Social and Labour Plan.</li> </ol> | <p>incorporated into the EMP in this document. These measures are the ones to be implemented and are more specific to the project.</p> <ol style="list-style-type: none"> <li>2. A soil conservation plan is included in this report.</li> <li>3. A rehabilitation plan will be implemented and mitigation has been provided by specialists for management of the TSF.</li> <li>4. The existing and updated EMP incorporate measures for dust suppression.</li> <li>5. Waste management on site takes cognisance of this and is also incorporated in the waste management procedure</li> <li>6. A stormwater management plan is included in the baseline section of the EIA.</li> <li>7. Grievance mechanisms are in place at BPM and are included in the EMP.</li> <li>8. The EMP highlights this requirement for employing local labour as far as possible.</li> </ol> | <p>Table 28.4</p> <p>Section 29.1.3 and Table 28.1</p> <p>Table 28.1 - EMP</p> <p>Section 4.3.11 and Table 28.3 – waste management</p> <p>Figure 4-2 - stormwater management plan</p> <p>Table 28.1 (Economic section)</p> <p>Table 28.1 (Economic and Inward migration sections)</p> |
| Organs of State      |             |                 |   |  |   |
| Sebenzile Ntshangase | DWS         | 12 May 2015     | DWS provided detailed information regarding what they require for the WUL application process. Please refer to the notes of the meeting in Appendix E for the full comments.  | These comments will be addressed as part of the IWULA, the WULA process is being conducted by GGES.  | Not applicable  |

| IAPs details                              |   | Date of comment  | Issue raised   | EAP/Project team's response  | Section and paragraph reference in this report where the issues and or the responses were incorporated |
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| Name                                      | Affiliation                             |                  |  |  |  |
| Pieter Ackerman                           | DWS                                     | 24 July 2015     | DWS Regional Office will be entry and exit for WUL. Options must include the exclusion of watercourses. (i.e. options which will not impact watercourses).   | Comment is noted, however all tailings and return water pipeline alternatives require the crossing of watercourses as the TSF is west of the Sandspruit and the plant area is east of the Sandspruit. Alternatives have considered reducing the amount of crossings and floodline width crossings.   | Section 7.1.1 – alternatives   |
| Oleteng Mokate                            | Dept of Health                          | 11 August 2015   | The receipt of the BID was noted and passed on to a colleague.   | Comment is noted.  | Not applicable   |
| Oleteng Mokate                            | Dept of Health                          | 30 October 2015  | The receipt of the draft scoping report was noted and comments will be provided where necessary.   | Comment is noted   | Appendix E for a copy of the correspondence.   |
| C. Theunissen                             | DWS                                     | 20 August 2015   | Acknowledgement of receipt of Notice of intent to submit WULA  | Comment is noted.  |  |
| Ragna Redelstorff and Colette Scheermeyer | South African Heritage Resources Agency | 29 July 2015     | Ensure that a Heritage Impact Assessment is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required. A Palaeontological Assessment is not necessary for the proposed footprint area as it lies within an area of insignificant palaeontological sensitivity according to the Palaeo Sensitivity Map on SAHRIS. | A heritage impact assessment has been conducted and is included in this EIA and EMP report.  | Appendix Q – Phase 1 Heritage impact assessment report.  |
| Ragna Redelstorff                         | South African Heritage Resources Agency | 20 October 2015  | Thank you for uploading additional documents to your application on SAHRIS. Unfortunately, I could not find a Heritage Impact Assessment (HIA) in any of the attachments. Please ensure to upload an HIA for SAHRA to be able to comment on your application.  | The report which was completed and loaded onto SAHRIS is a scoping report. That was the initial environmental report which is required by the DMR for mining projects. The scoping report gives the project background etc., and explains which specialist studies will be completed during the EIA. Thus the heritage report would only be done during the EIA Phase (next phase) of the project.<br><br>A heritage impact assessment has now been conducted and is included in this EIA and EMP report | Appendix Q – Phase 1 Heritage impact assessment  |
| Precious Moalahi                          | Department of Roads and transport       | 29 October 2015  | Requested a copy of the draft scoping report to be emailed.  | Draft scoping report was emailed.  | Appendix E for a copy of the correspondence.   |
| J van Wyk                                 | Department of Roads and transport       | 18 November 2015 | The existing road R565 (P115-1). This road falls within the jurisdiction of SANRAL and they must comment. The Department has no objections to the proposed changes to the  | SANRAL were notified of the availability of the scoping report for review.   | Appendix E for a copy of the correspondence.   |

| IAPs details             |                    | Date of comment                            | Issue raised   | EAP/Project team's response   | Section and paragraph reference in this report where the issues and or the responses were incorporated   |
|--------------------------|--------------------|--|--|---|--|
| Name                     | Affiliation        |  |  |   |  |
|                          |                    |  | infrastructure.  |   |  |
| Communities              |                    |  |  |   |  |
| Mmatshenko Segoi         | Phatsima community | 11 August 2015 at Phatsima Public Open Day | I am concerned about the health and safety of our community.   | The health related impact were considered, particularly with reference to water quality and air quality. Mitigation measures are considered in the EMP report which aim to prevent water pollution, air quality pollution as well as impacts that relate to social ills linked with influx of people for work opportunities.  | Table 7.37 – summary of mitigation to address IAP concerns.<br>Table 28.1- Mitigation measures: Air quality, groundwater, surface water, inward migration and associated social ills sections<br>Appendix F – assessment: Air quality, groundwater, surface water, inward migration and associated social ills sections  |
| Dorah Motlhajo           | Phatsima community | 11 August 2015 at Phatsima Public Open Day | Could we please be given jobs from this particular project. Whenever we take our CV's to Wesizwe, we never receive feedback.<br>This project can bring change to the state of the economy. The construction of building and houses will reduce poverty and crime because there will be employment. I hope that we will not have any more problems with water cuts. If only the dispersion of dust can be decreased as well as the construction of houses in order to improve our living conditions. I think that the land has been degraded and I don't know what the state of the environment the site is in. I don't know what the final state of the environment will be and the physical extent to which it will have an impact (in km's). | Comments are noted.<br><br>During the EIA, the possible impacts on the community and environment were considered and assessed. This included the potential impact on ground and surface water, employment and health caused by dust and mitigation with regard to these to manage the impacts to acceptable levels. Specialists also considered the physical extent of impacts. | Table 7.37 – summary of mitigation to address IAP concerns.<br>Table 7.34 – summary of impacts<br>Table 28.1- Mitigation measures: Air quality, groundwater, surface water, inward migration and associated social ills sections<br>Appendix F – assessment: Air quality, groundwater, surface water, inward migration and associated social ills sections<br>Appendix H- groundwater specialist report<br>Appendix R - Air quality specialist report<br>Appendix P - socio-economic specialist report |
| Rebecca Dipolelo Chaikhe | Phatsima community | 11 August 2015 at Phatsima Public          | The project will help to reduce unemployment and poverty in Phatsima. The environmental assessment needs to ensure that we don't experience any negative impacts. Phatsima is far from the plant therefore I am assuming that the  | The mitigation measures include in the approved EMP and as proposed by the specialists aim to minimise the potential impacts. With mitigation measures  | Table 9.1 – summary of impacts identified and degree to which impact can be managed.   |

| IAPs details      |                    | Date of comment                            | Issue raised  | EAP/Project team's response  | Section and paragraph reference in this report where the issues and or the responses were incorporated  |
|-------------------|--------------------|--|---|--|---|
| Name              | Affiliation        |  |   |  |   |
|                   |                    | Open Day                                   | impacts will be minimal.  | implemented it is expected that impacts can be managed /mitigated to acceptable levels. Phatsima was considered as part of the specialist studies i.e. the noise and air quality studies to determine impacts that will be experienced.  | Appendix F- assessment: air quality and noise impact<br>Appendix R - Air quality specialist report<br>Appendix N – Noise specialist study   |
| Veronica Kedibone | Phatsima community | 11 August 2015 at Phatsima Public Open Day | This project will benefit our community. Our children will be educated and informed about what is happening in our community.<br>1. There will be an improvement in the local economy.<br>2. I trust that SLR know their job and they will execute it well. There will be progress and improvement.<br>3. I would like to learn a lot more about how the environment could be potentially impacted and how land is utilised for this particular development.<br>4. The current state of the environment is not good, SLR will need to do whatever is necessary to ensure that the environment is protected.<br>5. I am hoping that jobs will be available; the local economy will grow, schools will be built, there will be sufficient water and the improvement of our roads.<br>6. SLR will need to assess the state of the land and houses before they initiate the construction of facilities required for the mine. I wish for prosperity. May God bless you with wisdom to continue with the project | Comments are noted.<br>The EIA and EMP have considered the socio-economic and environmental impacts of this project.<br>Information on how the cultural, socio-economic and biophysical environment will be impacted is contained in the EIA and the specialist assessments.<br><br>The mitigation measures as provided in the EMP aim to minimise negative impacts to the environment and maximise the benefits to the economy. | Appendix F - includes information on the impacts to the cultural, socio-economic and biophysical environment.<br><br>Table 28.1 – mitigation measures   |
| Sophy Femele      | Phatsima community | 11 August 2015 at Phatsima Public Open Day | I hope the project grows in order to bring about change in our community by providing employment and reducing crime.  | During the EIA, the possible impacts on the community were considered in terms of employment and social ills related to inward migration.  | Table 7.37 – summary of mitigation to address IAP concerns.<br>Table 28.1 – EMP: economic and inward migration and associated ills.<br>Appendix F – Assessment: economic and inward migration and associated ills.<br>Appendix P - socio-economic specialist report |
| Petrus Kandile    | Phatsima community | 11 August 2015 at Phatsima                 | 1. As the grazing land of the Phatsima Community was sold to the mine. We, the owners of the animals made an informal agreement with some of the mine employees to allow us to  | 1. The EIA gives indicative timeframes for the overall mine for construction. This comment has been forwarded on to  | Table 4.1 – estimated project timeframes  |

| IAPs details  |                    | Date of comment                            | Issue raised  | EAP/Project team's response  | Section and paragraph reference in this report where the issues and or the responses were incorporated   |
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| Name          | Affiliation        |  |   |  |  |
|               |                    | Public Open Day                            | <p>graze until the time they would decide to use it. We requested grazing land from the municipality as they have also taken the remaining piece of land for another project and left us with no grazing land.</p> <p>We informed the municipality about this and they instructed us to talk to the mine in order for them to allow us to graze until we had found alternative land for grazing. We requested to be informed timeously about any changes that would take place, which we, the mine and municipality had all agreed on.</p> <p>2. We are very concerned about the tailings dam that is going to be erected so close to our location because it will contain acid water and sand which will dry up and cause dust, causing some illnesses to the kids. Could you please review this process.</p>  | <p>Wesizwe.</p> <p>2. The geochemistry studies conducted concluded that the TSF is non-acid generating. Impacts on air quality were assessed as part of the EIA and its possible impact on surrounding areas including Phatsima was considered. Mitigation measures to decrease dust generation on site were recommended by the air quality specialist and included in the EMP.</p>  | <p>Section 7.3.1.2- geochemistry paragraph: non-acid generating</p> <p>Table 7.37 – summary of mitigation to address IAP concerns.</p> <p>Table 28.1- mitigation: Air quality section</p> <p>Appendix F – assessment: air quality section</p> <p>Appendix R - Air quality specialist study</p> |
| Aubrey Botswa | Phatsima community | 11 August 2015 at Phatsima Public Open Day | <p>How this information was taken to the people was really not appreciated. Not everyone in the community of Phatsima was aware of this information meeting. This is something which needs to be addressed and taken very seriously. Please respect the community when it comes to matters that will affect them. We all know that to every mining industry there is a lot of corruption in terms of how the jobs are allocated and how the royalties are being given out. This is something that the chairs and executives are aware of but they are not doing anything about it because it benefits them even informing us about the changes that are going to be made is just a formality- the decision has already been made. The authorisation has already been given.</p> <p>If you can only employ the youth and develop them, you will be</p> | <p>Comments are noted. SLR will improve communication methods for future meetings in the Phatsima community. This will include holding a public meeting for future public consultation if required.</p> <p>Authorisation has been given for the existing mine, but the changes to infrastructure still need to be authorised through the EIA process.</p> <p>Impacts on employment and graves were considered.</p> <p>The EMP provides mitigation measures</p> | <p>Table 7.37 – summary of mitigation to address IAP concerns.</p> <p>Table 28.1- mitigation: heritage section</p> <p>Appendix Q – Phase 1 Heritage impact assessment</p>  |

| IAPs details |             | Date of comment | Issue raised   | EAP/Project team's response  | Section and paragraph reference in this report where the issues and or the responses were incorporated |
|--------------|-------------|-----------------|--|--|--|
| Name         | Affiliation |                 |  |  |  |
|              |             |                 | <p>doing the major thing that is positive to us as youth.</p> <p><i>(Responses by the IAP to the numbered questions are recorded below)</i></p> <p><i>How is this project going to benefit the community?</i><br/>                     1. Please provide information as to how your interests (socio-economic, cultural, heritage or environment) will be affected by the proposed project:<br/>                     As you know mines produce minerals and for those minerals to be reached, chemicals are used, land is taken and graves are going to destroyed-that's how it's going to be affected.</p> <p><i>2. How do you consider that the proposed activities will impact on your socio-economic conditions?</i><br/>                     Hopefully jobs will be created from this project.</p> <p><i>3. What are your suggestions to mitigate the anticipated impacts on you or your socio-economic conditions?</i><br/>                     This is not going to benefit us in any way. Its going to benefit the mines.</p> <p><i>4. According to you, what are the current land uses and their location within the project area?</i><br/>                     The land is being used in such a way that the mines benefit, they don't care about people or their assets.</p> <p><i>5. What are the locations of environmental features on site?</i><br/>                     Water dams, farms and air.</p> <p><i>6. How can the potential environmental impacts be remediated, and to what standard?</i><br/>                     This can be stopped only if you don't put your plans into action. Stop whatever you are trying to do, that's a permanent solution!</p> <p><i>7. How can the potential impacts on your socio-economic conditions be mitigated (reduced)?</i><br/>                     By paying the royalties to the communities, not dealing under the table and creating jobs. Don't place jobs on sale.</p> <p><i>8. How can the potential environmental impacts on your</i></p> | <p>regarding maximising local employment as far as possible.</p> <p>A heritage impact assessment was also conducted to identify graves on site and provided management measures should relocation of graves be required. Locations of identified graves are provided in the heritage impact assessment. Graves will not be destroyed but either be fenced off or relocated depending on where they are located. Details on this process are provided in the EMP and the heritage assessment.</p> |  |

| IAPs details      |                    | Date of comment                            | Issue raised   | EAP/Project team's response  | Section and paragraph reference in this report where the issues and or the responses were incorporated   |
|-------------------|--------------------|--|--|--|--|
| Name              | Affiliation        |  |  |  |  |
|                   |                    |  | <i>infrastructure be managed, avoided or remedied?</i><br>By not doing anything to it.   |  |  |
| Eunice Tladinyana | Phatsima community | 12 August 2015 at Ledig Public Open day    | I want to see this project going far and I want to see this project be big and to be known throughout South Africa. I really like it. I want to work at BPM. I would be really pleased if SLR could help us with jobs.   | Impacts relating to employment were considered in this EIA. The EMP provides mitigation measures regarding maximising local employment as far as possible.   | Table 7.37 – summary of mitigation to address IAP concerns.<br><br>Table 28.1- mitigation: economic section<br><br>Appendix F- assessment: economic section                              |
| Gomolemo Molefe   | Phatsima community | 11 August 2015 at Phatsima Public Open Day | I hereby comment and question how you are going to get information pertaining your learnerships and internships - when and how will Wesizwe be hiring us?<br><br><i>(Responses by the IAP to the numbered questions are recorded below)</i><br><br>2. <i>How do you consider that the proposed activities will impact on your socio-economic conditions?</i><br>By providing more jobs to our community<br><br>3. <i>What are your suggestions to mitigate the anticipated impacts on you or your socio-economic conditions?</i><br>By including all the community members.<br><br>4. <i>According to you, what are the current land uses and their location within the project area?</i><br>Sports and recreation | Information on recruitment procedures are contained in the EMP   | Table 7.37 – summary of mitigation to address IAP concerns.<br><br>Table 28.1- mitigation: economic section(for recruitment information)<br><br>Appendix F- assessment: economic section |
| Gomolemo Molefe   | Phatsima community | 13 October 2015                            | Wesizwe info CDs: May you please forward the info I can't get it online.   | An email response was sent: please send through an address for us to send a copy of the CD. Alternative methods for viewing the report were also provided. Response from IAP for delivery address for the CD was never received. | Appendix E for a copy of the correspondence.   |
| Thabo Tladinyana  | Phatsima community | 12 August 2015 at Ledig Public Open day    | I would like to see the project expand into other areas of South Africa so it can help to combat unemployment.   | The comment is noted.  | Appendix E for a copy of the correspondence.   |
| Petronela         | Phatsima           | 11 August                                  | I do not have a problem with the project but the leaders of the  | Comments are noted. SLR did communicate  | Appendix E for a copy of the   |



| IAPs details |                    | Date of comment                            | Issue raised  | EAP/Project team's response  | Section and paragraph reference in this report where the issues and or the responses were incorporated  |
|--------------|--------------------|--|---|--|---|
| Name         | Affiliation        |  |   |  |   |
| Molekwa      | community          | 2015 at Phatsima Public Open Day           | community should have been notified properly - we would have really appreciated that.   | with the ward councillor and local municipality regarding the Open Day. SLR will improve communication methods for future meetings in the Phatsima community, if required.   | correspondence.   |
| Monki Masisi | Phatsima community | 11 August 2015 at Phatsima Public Open Day | I am happy that we were notified about this development, especially because it is close to our community. I am hoping there will be some kind of change in our community because we really need jobs.<br>I am concerned that the blasting impacts will have a negative impact on our community.   | Impacts relating to employment were considered in this EIA. The EMP provides mitigation measures regarding maximising local employment as far as possible.<br><br>Blasting does not form part of this project (only the approved project). The mitigation measures as part of the approved EMP have been included in this EIA and EMP report.                                      | Table 7.37 – summary of mitigation to address IAP concerns.<br><br>Table 28.1- mitigation: economic and blasting section<br><br>Appendix F- assessment: economic section<br>Appendix F- Blasting discussion |
| Zelda Poee   | Phatsima community | 11 August 2015 at Phatsima Public Open Day | I have concerns about the project.  | During the EIA, the possible impacts on the community and environment were considered and assessed. This included, impacts to air quality, groundwater, surface water, biodiversity, socio-economic, soils, traffic, heritage, noise, land use and visual.<br><br>With mitigation measures implemented it is expected that impacts can be managed /mitigated to acceptable levels. | Table 7.37 – summary of mitigation to address IAP concerns.<br><br>Table 7.34 – summary of impacts<br><br>Table 28.1- Mitigation measures<br><br>Appendix F- assessment                                     |
| Noli Makhubo | Phatsima community | 11 August 2015 at Phatsima Public Open Day | Please email me your word document (BID) so that I can email my feedback to you.  | This will be done for the comment sheet (in word). The full BID can only be sent in PDF. The email address has been added to our database and you will be informed of project progress.  | Appendix E for a copy of the correspondence   |
| Anonymous    | Phatsima community | 11 August 2015 at Phatsima Public Open Day | What kind of jobs will be available? Will the Phatsima people benefit something from the project of Wesizwe. How will we know if the project is on? Will you come to us to tell us all the details about these projects. Lastly, as a community member, I would like all the people from Wesizwe to arrange a meeting with all the people from Phatsima that we can understand what these documents actually mean and therefore be able to answer | Information on recruitment procedures are contained in the EMP.<br>The economic impact of the project, including employment, was assessed. The EMP provides mitigation measures regarding maximising local employment as far as possible.  | Table 28.1- mitigation: economic section(for recruitment information)<br><br>Appendix F- assessment: economic section   |

| IAPs details      |                    | Date of comment                            | Issue raised   | EAP/Project team's response  | Section and paragraph reference in this report where the issues and or the responses were incorporated  |
|-------------------|--------------------|--|--|--|---|
| Name              | Affiliation        |  |  |  |   |
|                   |                    |  | questions.   | The purpose of the Open Day was to explain the information in the BID to the community. This was done for the community members who were interested. Setswana translators were present at both Open Days. The documents were also available in Setswana for ease of understanding. Further public participation will be conducted during the EIA and this will likely include a public meeting in Phatsima, if required. |   |
| Anonymous         | Phatsima community | 11 August 2015 at Phatsima Public Open Day | Seeing that the project area is close to Phatsima, will preference for hiring be given to the inhabitants of Phatsima?<br>How will our lives be endangered?<br>How are we going to benefit from the project?   | Information on recruitment procedures are contained in the EMP.<br>The economic impact of the project, including employment, was assessed. The EMP provides mitigation measures regarding maximising local employment as far as possible.  | Table 28.1- mitigation: economic section(for recruitment information)<br><br>Appendix F- assessment: economic section   |
| Lawrence Loeto    | Ledig community    | 12 August 2015 at Ledig Public Open Day    | <ol style="list-style-type: none"> <li>1. Please inform the Parks Board and Pilanesberg Game Reserve directors. Ledig farmers and restaurants union must also be informed. Sun City Resort, BnB and Bakubung hotel directors must be informed.</li> <li>2. The government must ensure that air pollution from dust at the mine does not affect the plants growing within the community.</li> <li>3. The animals in the game reserve must not be affected by the dust- they must also be taken care of.</li> <li>4. Water must not be polluted by the mining activities.</li> <li>5. Our youth must not be affected by pollution especially in giving birth?</li> </ol> | <ol style="list-style-type: none"> <li>1. This has been done.</li> <li>2-3 Information on dust impacts on plant and animal life are included in the air quality impact assessment.</li> <li>4-5 Mitigation measures are provided in the EMP to manage water resource and a monitoring programme is also provided.</li> </ol>   | Appendix R - Air quality specialist study<br><br>Table 7.37 – summary of mitigation to address IAP concerns.<br><br>Table 28.1- Mitigation measures<br>Table 30.1- monitoring |
| Tshireletso Mjala | Phatsima community | 12 August 2015 at Ledig Public Open Day    | You can inform the community in the following ways:<br>-You can explain everything to the ward councillor and ask him to inform the community<br>-You can advertise your meeting details on the radio<br>-You can send out letters to the community members to make them aware   | Noted. The ward councillor was informed of the Open Day and he will also be informed of future meetings. Letters were sent to community members on the existing IAP database and in future will be send to everyone on the updated IAP database (updated after the public open days). Radio  | Appendix E for a copy of the correspondence   |

| IAPs details   |                           | Date of comment   | Issue raised  | EAP/Project team's response  | Section and paragraph reference in this report where the issues and or the responses were incorporated                |
|--|---------------------------|---|---|--|---|
| Name   | Affiliation               |   |   |  |   |
|  |                           |   |   | advertising will also be considered.   |   |
| Magdeline Mogobaladi   | Phatsima community        | 12 August 2015 at Ledig Public Open Day   | I'm interested in the project.  | You will be kept informed of the project progress.   | Appendix E for a copy of the correspondence   |
| Elias Mokwena  | Ledig community           | 12 August 2015 at Ledig Public Open Day   | I'm looking for a job.  | Information on recruitment procedures are contained in the EMP. The economic impact of the project, including employment, was assessed. The EMP provides mitigation measures regarding maximising local employment as far as possible. | Table 28.1- mitigation: economic section(for recruitment information)<br><br>Appendix F- assessment: economic section |
| Dept. of Land Affairs (Dept. of Rural Development and Land Reform) |                           |   |   |  |   |
| None received to date.   |                           |   |   |  |   |
| Traditional Authorities  |                           |   |   |  |   |
| Kgosigadi of the Bakubung Tribe                                    | Bakubung Tribal Authority | Meeting on 4 August 2015 (full notes of the meeting are included in Appendix E) | Public consultation also to be done in Zulu from now on as there are Zulu speaking people in the community.<br><br>The Kgosigadi will sign the landowner forms for the EIA and WUL processes.<br><br>Wesizwe needs community buy-in.<br><br>The Kgosigadi will arrange the Bakubung Tribal Hall for the open day and will announce the meeting. | Public consultation will also be done in Zulu from now on.<br>Comments are noted.  | Appendix E – refer to the scoping summaries (Zulu)  |
| Dept. Environmental Affairs  |                           |   |   |  |   |
| None received to date.   |                           |   |   |  |   |
| Other Competent Authority (DMR)                                    |                           |   |   |  |   |

| IAPs details                          |             | Date of comment   | Issue raised   | EAP/Project team's response   | Section and paragraph reference in this report where the issues and or the responses were incorporated |
|---------------------------------------|-------------|---|--|---|--|
| Name                                  | Affiliation |   |  |   |  |
| Lorraine Nobela and Tshilidzi Phalala | DMR         | Meeting on 6 July 2015 (full minutes of the meeting are included in Appendix E) | <ol style="list-style-type: none"> <li>1. These changes to the EA require a scoping and EIA process and will need to be approved under NEMA by the DMR. To change the MR it will be necessary to get an EA in terms of Section 25 of the MPRDA if the footprint is changing.</li> <li>2. The Mine Works Programme will need to be updated.</li> <li>3. The original EA must be attached to the application to the DMR.</li> <li>4. What is the additional material that Wesizwe want included in the MR. This must be specified in the application, the DMR would then need to confirm if the mining right for this mineral is available in that area.</li> <li>5. DMR is only the competent authority for activities within the MR area. Anything outside the boundary is to be submitted to the North West Rural, Environment and Agriculture Development (READ). The whole pipeline will need be authorised by the DMR and not READ.</li> <li>6. Will more water be required if there is an increase in plant capacity.</li> <li>7. Who is the landowner?</li> <li>8. The Bakubung would need to be consulted separately as the landowner.</li> </ol> | <ol style="list-style-type: none"> <li>1. The capacity of the plant will increase but the footprint will remain the same.</li> <li>2. This was done in 2014.</li> <li>3. This will be done.</li> <li>4. It is aggregate.</li> <li>5. The pipeline will cross over an area that is not in the MR. However, this area will be registered as a servitude.</li> <li>6. In the original application 8 mega litres were requested from Magalies Water. The plan is to recirculate water from TSF and sewage treatment plant instead of disposing water, therefore additional water should not be needed.</li> <li>7. The plant area and pipeline area is owned by Bakubung Tribal Authority. The TSF area is owned by Wesizwe.</li> <li>8. This has been done.</li> </ol> | Appendix E for a copy of the correspondence  |
| Interested Parties                    |             |   |  |   |  |
| Chris De Bruyn                        |             | 22/07/2015  | A Noise study with specific reference to the additional noise generated by the above ground Crusher plant. A full Air study taking into account the cumulative impacts in the area.  | <ol style="list-style-type: none"> <li>1. The noise impact assessment took into consideration the additional noise impact from this project which included the above-ground crusher.</li> <li>2. The air quality impact assessment considered the cumulative impact of the site and took into consideration baseline air quality in the surrounding area. The baseline monitoring data gives an idea of the impacts as a result of activities in the area from when monitoring started to date. The study discussed the probable cumulative impacts taking into account the monitored data.</li> </ol>  | <p>Appendix N – noise impact assessment</p> <p>Appendix R - Air quality impact assessment</p>          |