



29 July 2021
574378

Kudumane Manganese Resources – Expansion Project: Air Quality Impact Assessment
Attention: Hanlie Liebenberg-Enslin

Dear specialist

Kudumane Manganese Resources (KMR) Expansion Project: Specialist Terms of Reference

1. Introduction and background

Kudumane Manganese Resources (Pty) Ltd (KMR) is situated approximately 3 km south-west of the town of Hotazel within the John Taolo Gaetsewe District Municipality in the Northern Cape. KMR currently holds to Mining Rights; Mining Right NC/30/5/1/2/2/0268 MR covering the farms York A 279 and Telele 312 and Mining Right NC/ 30/5/1/2/2/10053 MR over the farms Devon 277, Hotazel 280 and Kipling 271. The mine is therefore managed under two Environmental Management Programmes (EMPrs), a Water Use Licence (WUL) and a WUL Amendment.

It is the intension of KMR to expand its existing operations and construct additional infrastructure in order to improve production capacity.

The infrastructure and activities associated with the proposed KMR Expansion Project requires a new Environmental Authorisation, the amendment of the mine's existing EMPrs, a Waste Management Licence (WML) and a Water Use Licence application (WULA) to authorise the following key infrastructure:

- A new opencast pit mine on Kipling;
- Expansion of the Hotazel and York opencast pits to allow for the mining of KMRs boundary pillar associated with each pit; and
- Two attenuation dams on the Ga-Mogara River, to allow for the expansion of the York and Hotazel pits.

The above key infrastructure will have secondary infrastructure and activities associated with them, which includes:

- Establishment of an addition water storage tank near the proposed Kipling opencast pit operation, including a pipeline for the transfer of water between the proposed Kipling water storage tank and the existing Hotazel and York water storage tanks;
- Development and expansion of waste rock dumps at the proposed Kipling operation and the existing Hotazel operation;

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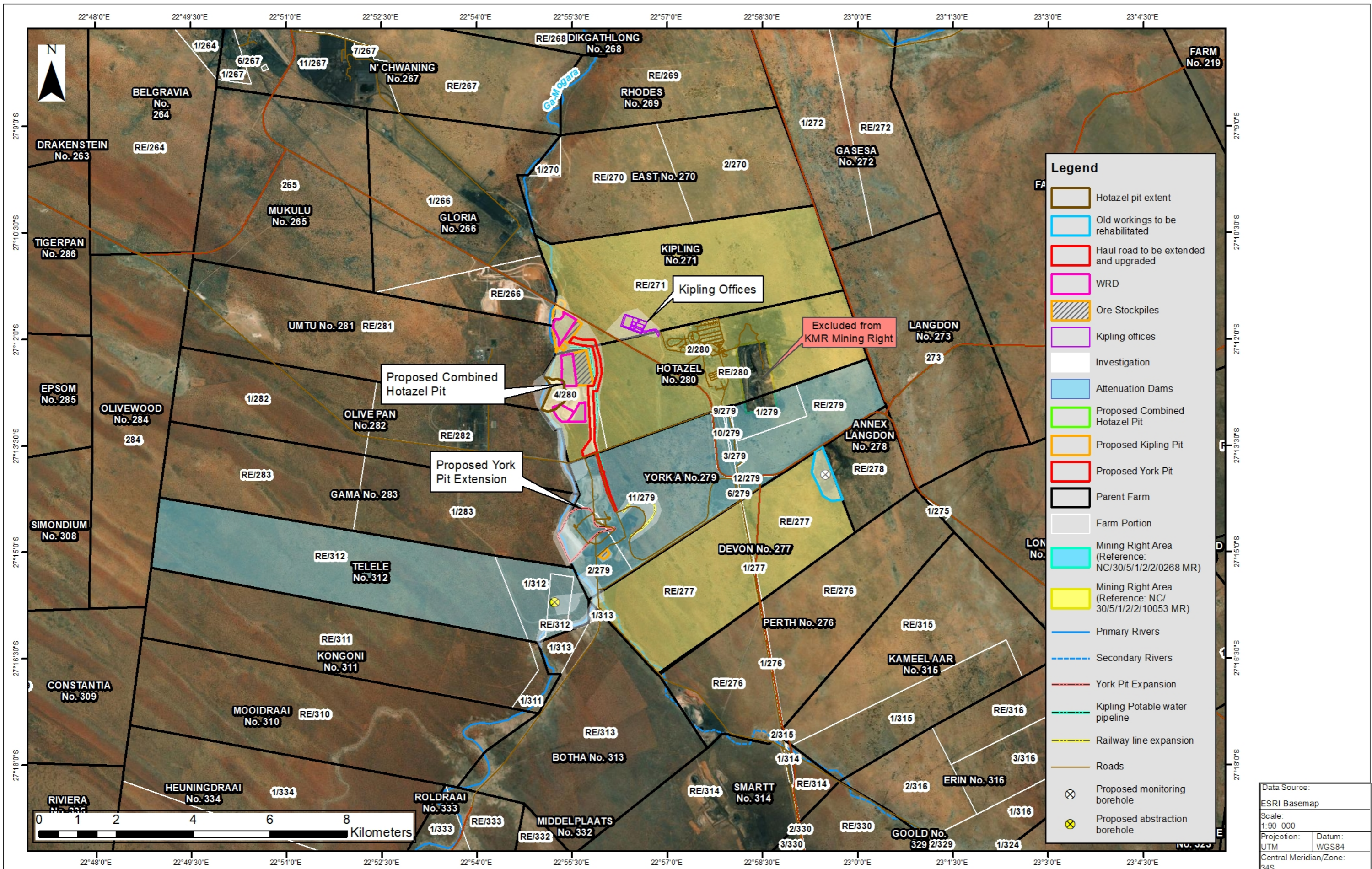
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- Establishment and expansion of ore stockpiles dumps at the proposed Kipling operation and the existing Hotazel and York operations;
- New haul road between the proposed Kipling operation and the existing Hotazel operation and upgrading of the existing haul roads between the Hotazel and York operations;
- Development and expansion of sewerage treatment plants at Kipling (new), Hotazel and York (Expansion);
- Supporting infrastructure such as admin offices ancillary infrastructure on the farm Kipling;
- Waste and fuel storage areas;
- Relocation and development of new pollution control dams at York and Kipling operations;
- Upgrading the intersection along the R380 before the R31 – intersection used by KMR as haul truck transport entrance;
- Establishment of a Contractor's camp; and
- Extension of existing mine powerlines.

SRK Consulting (South Africa) (Pty) Ltd (SRK) was appointed by Kudumane Manganese Resources (Pty) Ltd (KMR) to undertake an integrated environmental authorisation process for the proposed KMR expansion project in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) and National Water Act, 1998 (Act No. 36 of 1998) (NWA).

This document serves as the Specialist Terms of Reference (ToR) that provides detail on how the specialist will need to conduct their evaluation in respect of the KMR Expansion Project, including the objectives and scope of the evaluation and reporting requirements to meet the relevant regulatory requirements in terms of NEMA & NWA.



2. Legal requirements for the proposed KMR Expansion Project

The following legislation requirements are applicable in respect of the proposed KMR Expansion Project:

- For the additional mining related activities and infrastructure:
 - The National Environmental Management Act (Act No. 107 of 1998) (NEMA);
 - For any project related Listed Activities stipulated in the NEMA Environmental Impact Assessment (EIA) Regulations of 2014, as amended in 2017;
 - The National Environmental Management: Waste Act (Act No. 59 of 2008) (NEM:WA);
 - For any project related waste management activities stipulated in GN R 921, promulgated under NEM:WA;
 - The Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) (MPRDA)
 - For any amendments the proposed project will have on the Mining Work Programmes and the EMPs associated with each Mining Right, in accordance with Section 102 of the MPRDA;
 - The National Water Act (Act No. 36 of 1998) (NWA);
 - For any project related water uses stipulated under Section 21 of NWA.

3. Impact Assessment Methodology

As part of the integrated environmental authorisation process, various specialist studies will need to be undertaken in support of the Environmental Impact Assessment (EIA) and the development of the Environmental Management Programme (EMP).

All specialists are required to assess each proposed activity/aspect of the KMR Expansion Project in relation to the construction, operational, closure and decommissioning phases in order to identify the potential impacts that may be associated with such activity and to develop appropriate mitigation measures that can be implemented to reduce or eliminate the potential impacts identified.

The specialist will assess the potential impact identified according to the Impact Assessment Methodology described below. This Impact Assessment Methodology has been formalised by SRK to comply the EIA Regulations of 2014 (as amended) promulgated under NEMA, which states the following:

- *An environmental impact assessment report must contain all information that is necessary for the competent authority to consider the application and to reach a decision, and must include – an assessment of each identified potentially significant impact, including –*
 - *(i) cumulative impacts;*
 - *(ii) the nature, significance and consequence of the impact and risk;*
 - *(iii) the extent and duration of the impact and risk;*
 - *(iv) the probability of the impact and risk occurring;*
 - *(v) the degree to which the impact and risk can be reversed;*
 - *(vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and*
 - *(vii) the degree to which the impact and risk can be mitigated.*

Based on the above, the Impact Assessment Methodology requires that each potential impact identified is clearly described (providing the nature of the impact) and be assessed in terms of the following factors (see

Table 1):

- **extent** (spatial scale) - *will the impact affect the national, regional or local environment, or only that of the site?;*
- **duration** (temporal scale) - *how long will the impact last?;*
- **magnitude** (severity) - *will the impact be of high, moderate or low severity?;* and
- **probability** (likelihood of occurring) - *how likely is it that the impact may occur?*

To enable a scientific approach for the determination of the environmental significance (importance) of each identified potential impact, a numerical value has been linked to each factor.

Table 1: Risk matrix

Occurrence	Duration:	Probability:
	5 – Permanent	5 – Definite/don't know
	4 - Long-term (ceases with the operational life)	4 – Highly probable
	3 - Medium-term (5-15 years)	3 – Medium probability
	2 - Short-term (0-5 years)	2 – Low probability
Severity	1 – Immediate	1 – Improbable
		0 – None
	Extent/scale:	Magnitude:
	5 – International	10 - Very high/uncertain
	4 – National	8 – High
	3 – Regional	6 – Moderate
	2 – Local	4 – Low
1 – Site only	2 – Minor	
0 – None		

Once the above factors had been ranked for each identified potential impact, the environmental significance of each impact can be calculated using the following formula:

- $Significance = (duration + extend + magnitude) \times probability$

The maximum value that can be calculated for the environmental significance of any impact is 100.

The environmental significance of any identified potential impact is then rated as either: high, moderate or low on the following basis:

- More than 60 significance value indicates a high (H) environmental significance impact;
- Between 30 and 60 significance value indicates a moderate (M) environmental significance impact; and
- Less than 30 significance value indicates a low (L) environmental significance impact.

In order to assess the degree to which the potential impact can be reversed and be mitigated, each identified potential impact will need to be assessed twice:

- Firstly the potential impact will be assessed and rated prior to implementing any mitigation and management measures; and
- Secondly, the potential impact will be assessed and rated after the proposed mitigation and management measures have been implemented.

The purpose of this dual rating of the impact before and after mitigation is to indicate that the significance rating of the initial impact is and should be higher in relation to the significance of the impact after mitigation measures have been implemented.

In order to assess the degree to which the potential impact can cause irreplaceable loss of resources, the following classes (%) will be used and will need to select based on the specialist informed decision and discretion:

- 5 100% - Permanent loss
- 4 75% - 99% - significant loss
- 3 50% - 74% - moderate loss
- 2 25% - 49% - minor loss
- 1 0% - 24% - limited loss

Please note that the Loss of Resources aspect will not affect the overall significance rating of the impact.

In terms of assessing the cumulative impacts, specialists are required to address this in a sentence/ paragraph fashion as the spatial extent of the cumulative impacts will vary from project to project.

Cumulative impact, in relation to an activity, means the impact of an activity that in itself may not be significant, but may become significant when added to the existing or potential impacts eventuating from similar or diverse activities or undertakings in the area.

An excel spreadsheet with the above-mentioned Impact Assessment Methodology and associated formulas will be sent to you via email and uploaded on the OneDrive (https://srk-my.sharepoint.com/:f/g/personal/gome_srk_co_za/EtPbQJoxwStDsjsxFndLxOhEBsozFYFdT0Qf8OqRpeBIXKA). SRK requests that the excel spreadsheet be completed and submitted to SRK along with your draft and final reports.

4. Specialist Report

4.1 Report Structure

All Specialist Reports will need to be compiled in such a manner that it adheres to the EIA Regulation requirements as detailed in Appendix 6 of the NEMA EIA Regulations of 2014, as amended. Please refer to Appendix A of this document for a breakdown of the NEMA specialist report requirements. The Department of Forestry, Fisheries and Environment (DFFE) also developed specific assessment protocols which specialists will need to consider as part of their assessment methodology and reporting. The protocols specific to your study is also included in Appendix A.

In addition to the above specialist report requirements, certain specialists' reports will assist as supporting documentation to the Water Use Licence Application (WULA) for the KMR Expansion Project, i.e. the hydrological, geohydrological, biodiversity and rehabilitation studies.

Such specialist reports will need to be compiled, in addition to the NEMA EIA Regulation requirements, in accordance with the Regulations regarding the procedural requirements for water use licence applications (GN R 267 of March 2017).

Please refer to Appendix B of this document for a breakdown of the specific Reg 267 specialist report requirements.

4.2 Key Deliverables

The following key deliverables and dates are of importance with regards to the specialist investigations and reporting (see Table 2):

Table 2: Specialist investigation and reporting dates

Task Name	Duration	Start	Finish
Specialist Studies	73 days	Mon 07/06/21	Fri 17/09/21
Specialist Appointments	5 days	Mon 07/06/21	Fri 11/06/21
Specialist kick-off meeting	2 days	Mon 14/06/21	Tue 15/06/21
Field work and Draft Report	50 days	Fri 25/06/21	Fri 03/09/21
Specialist Workshop	4 days	Mon 06/09/21	Thu 09/09/21
Final Updated Specialist Reports	3 days	Fri 10/09/21	Tue 14/09/21

5. Conclusions

We look forward to working with you on this project. Please do not hesitate to contact Kavilan Naidoo or Selma Nel at SRK should you have any queries about the Terms of Reference.

Yours faithfully,

SRK Consulting (South Africa) (Pty) Ltd

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Kavilan Naidoo
Environmental Scientist

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Selma Nel
Principal Environmental Scientist - Project Manager

Appendix A: Specialist Report Content Requirements in terms of NEMA

In terms of the EIA/EMPr reports, specialists will be required to compile the specialist report in accordance with Appendix 6 of the NEMA EIA Regulations of 2014, as amended in 2017 as well as specific assessment protocols which have been developed by the DFFE. Specialist report therefore must contain:

Appendix 6 NEMA EIA Regulations-

- (a) details of—
 - (i) the specialist who prepared the report; and
 - (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae;
- (b) a declaration that the specialist is independent in a form as may be specified by the competent authority;
- (c) an indication of the scope of, and the purpose for which, the report was prepared, the quality and age of base data used for the specialist report and a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;
- (d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;
- (e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;
- (f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;
- (g) an identification of any areas to be avoided, including buffers (if and where applicable);
- (h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers (if and where applicable);
- (i) a description of any assumptions made and any uncertainties or gaps in knowledge;
- (j) a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;
- (k) any mitigation measures for inclusion in the EMPr;
- (l) any conditions for inclusion in the environmental authorisation;
- (m) any monitoring requirements for inclusion in the EMPr or environmental authorization;
- (n) a reasoned opinion—
 - (i) whether the proposed activity, activities or portions thereof should be authorized regarding the acceptability of the proposed activity or activities; and
 - (ii) if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;
- (o) a description of any consultation process that was undertaken during the course of preparing the specialist report;
- (p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and
- (q) any other information requested by the competent authority.

DDFE General Assessment Protocols –

- (r) The site sensitivity verification must be undertaken by an environmental assessment practitioner or a specialist.
- (s) The site sensitivity verification must be undertaken through the use of:
 - (a) a desk top analysis, using satellite imagery;
 - (b) a preliminary on-site inspection; and
 - (c) any other available and relevant information.
- (t) The outcome of the site sensitivity verification must be recorded in the form of a report that--
 - (a) confirms or disputes the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.;
 - (b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
 - (c) is submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations¹ (EIA Regulations).

**Appendix B: Specialist Report Content Requirements in terms of
NWA (Reg 267)**

The following contents' lists are included in this Appendix based on R267 unless otherwise specified:

- Integrated water and wastewater management report (**Appendix Ci**);
- Wetland delineation report (**Appendix Cii**);
- Surface water report (contents not specified in R267 but informed by IWWMP surface water requirements and requirements for Section 21(c) and (i) water uses) (**Appendix Ciii**);
- Geohydrology report (**Appendix Civ**);
- Mine closure/rehabilitation plan (**Appendix Cv**);
- Civil design and method statement (R267 and additional DWS requirements) (**Appendix Cvi**).

**Appendix Ci: INTEGRATED WATER AND WASTEWATER
MANAGEMENT REPORT**

- 1. Introduction**
 - 1.1 Activity Background
 - 1.2 Regional setting and location of activity
 - 1.3 Property description
 - 1.4 Purpose of MWMP
- 2. Conceptualization of activity**
 - 2.1. Description of activity
 - 2.2. Extent of activity
 - 2.3. Key activity related processes and products
 - 2.4. Activity life description
 - 2.5. Activity infrastructure description
 - 2.6. Key water uses and waste streams
 - 2.7. Organisational structure of activity
 - 2.8. Business and corporate policies
- 3. Regulatory water and waste management framework**
 - 3.1 Summary of all water uses
 - 3.2 Existing lawful water uses
 - 3.3 Relevant exemptions
 - 3.4 Generally authorised water uses
 - 3.5 New water uses to be licensed
 - 3.6 Waste management activity (NEM:WA)
 - 3.7 Waste related authorisations
 - 3.8 Other authorisation (EIAs, EMPs, RODs, Regulations)
- 4. Present Environmental Situation**
 - 4.1 Climate
 - 4.2 Regional Climate Rainfall
 - 4.3 Evaporation
 - 4.4 Surface Water
 - 4.5 Water Management Area
 - 4.6 Surface Water Hydrology
 - 4.7 Surface Water Quality
 - 4.8 Mean Annual Runoff (MAR)
 - 4.9 Resources Class and River Health Receiving Water Quality Objectives and Reserve
 - 4.10 Surface Water User Survey
 - 4.11 Sensitive Areas Survey
 - 4.12 Groundwater
 - 4.13 Aquifer Characterization
 - 4.15 Hydro-census
 - 4.16 Potential Pollution Source Identification
 - 4.17 Groundwater Model
 - 4.18 Socio-economic environment
- 5. Analysis and characterization of the water use activity**
 - 5.1 Site delineation for characterisation
 - 5.2 Water and waste management
 - 5.3 Process water
 - 5.4 Storm water
 - 5.5 Groundwater
 - 5.6 Waste
 - 5.7 Operational Management
 - 5.8 Organisational Structure

- 5.9 Resources and competence
- 5.10 Education and training
- 5.11 Internal and external communication
- 5.12 Awareness raising
- 5.13 Monitoring and control
- 5.14 Surface water monitoring
- 5.15 Groundwater monitoring
- 5.16 Bio monitoring
- 5.17 Waste monitoring
- 5.18 Risk assessment / Best Practice Assessment
- 5.19 Issues and responses from public consultation process
- 5.20 Matters requiring attention / problem statement
- 5.21 Assessment of level and confidence of information
- 6. Water and Waste Management**
- 6.1 Water and waste management philosophy (process water, stormwater, groundwater and waste)
- 6.2 Strategies (process water, stormwater, groundwater and waste)
- 6.3 Performance objectives / goals
- 6.4 Measures to achieve and sustain performance objectives
- 6.5 Option analyses and motivation for implementation of preferred options (optional)
- 6.6 IWWMP action plan
- 6.7 Control and monitoring
- 6.8 Monitoring of change in baseline (environment) information (Surface water, groundwater and bio-monitoring)
- 6.9 Audit and report on performance measures
- 6.10 Audit and report on relevance of IWWMP action plan
- 7. Conclusion**
- 7.1 Regulatory status of activity
- 7.2 Statement of water uses requiring authorisation, dispensing with licencing requirement and possible exemption from regulation
- 8. References**
- 9. Appendices: Specialist Studies
- 9.1 Geohydrology
- 9.2 Civil design
- 9.3 Wetland delineation report

Appendix Cii: WETLAND DELINEATION REPORT

Important aspects to be addressed for the KMR Expansion study under the relevant headings below (or as Appendices to the report) include the following:

- Cumulative impacts of combined open pit and shaft mining.
- Recommended Ecological Category (REC) of the delineated wetlands/river systems.
- Rehabilitation plan for the wetland and riparian areas.
- Landscape maintenance plan to cover the riparian zones that will be affected by mining activities.
- Plant species plan map, covering the riparian zones that will be affected by mining.

1 Introduction

2 Terms of reference

3 Knowledge gaps

4 Study area

5 Expertise of the specialist

6 Aims and objectives

7 Methodology

7.1 Wetland identification and mapping

7.2 Wetland delineation

7.3 Wetland functional assessment

7.4 Determining the ecological integrity of the wetlands

7.5 Determining the Present Ecological State of wetlands

7.6 Determining the Ecological Importance and Sensitivity of wetlands

7.7 Ecological classification and description

8 Results

8.1 Wetland delineation

8.2 Wetland unit identification

8.3 Wetland unit setting

8.4 Wetland soils

8.5 Description of wetland type

8.6 General functional description of wetland types

8.7 Wetland ecological functional assessment

8.8 The ecological health assessment of the opencast mining area (*as specified in R267 but to be noted that in the context of this project the heading should read "The ecological health assessment of the mining area"*)

8.9 The PES assessment of the remaining wetland areas

8.10 The EIS assessment of the remaining wetland areas

9 Impact assessment discussions.

10 Conclusions and recommendations

11 References

The reports listed below contain the standardised and accepted methods that must be used for determining the various aspects of assessments during the WUA process related to wetlands:

- 1) Wetland and riparian habitat delineation document (DWS report on DWS website);
- 2) Wetland Buffer Guideline (SANBI WRC project and Report, on DWS website)
- 3) Wetland Offset (WRC report TT660/16; on DWS website)
- 4) High Risk Wetland Atlas (WRC Report TT659/16, on DWS website)
- 5) Wetland Rehabilitation in mining landscapes (WRC Report TT658/16, on DWS website)
- 6) Risk Assessment Protocol and associated Matrix (DWS document on DWS Website)

Appendix Ciii: SURFACE WATER STUDY REPORT

No content list is specified in R267. Important aspects to be addressed in the KMR Expansion surface water study will be discussed at the specialist introductory and clarification meeting.

Appendix Civ: GEOHYDROLOGY REPORT

Important aspects to be addressed for the KMR Expansion study under the relevant headings below include the following:

- 1. Introduction**
- 2. Geographical setting**
 - 2.1 Topography and drainage
 - 2.2 Climate
- 3. Scope of Work**
- 4. Methodology**
 - 4.1 Desk study
 - 4.2 Hydro-census
 - 4.3 Geophysical survey and results
 - 4.4 Drilling and siting of boreholes
 - 4.5 Aquifer testing
 - 4.6 Sampling and chemical analysis
 - 4.7 Groundwater recharge calculations
 - 4.8 Groundwater modelling
 - 4.9 Groundwater availability assessment
- 5. Prevailing groundwater conditions**
 - 5.1 Geology
 - 5.1.1 Regional geology
 - 5.1.2 Local geology
 - 5.2 Acid generation capacity
 - 5.3 Hydrogeology
 - 5.3.1 Unsaturated zone
 - 5.3.2 Saturated zone
 - 5.3.3 Hydraulic conductivity
 - 5.4 Groundwater levels
 - 5.5 Groundwater potential contaminants
 - 5.6 Groundwater quality
- 6. Aquifer Characterisation**
 - 6.1 Groundwater vulnerability
 - 6.2 Aquifer classification
 - 6.3 Aquifer protection classification
- 7. Groundwater Modelling**
 - 7.1 Software model choice
 - 7.2 Model set-up and boundaries
 - 7.3 Groundwater elevation and gradient
 - 7.4 Geometric structure of the model
 - 7.5 Groundwater sources and sinks
 - 7.6 Conceptual model
 - 7.7 Numerical model
 - 7.8 Results of the model
 - 7.8.1 Pre-facility (Mining/Industry/ Wastewater treatment plant, etc)
 - 7.8.2 During facility (mining/ Industry/ Wastewater treatment plant) operations
 - 7.8.3 Post-facility (mining/ Industry/ Wastewater treatment plant) operation
- 8. Geohydrological Impacts**
 - 8.1 Construction phase
 - 8.1.1 Impacts on Groundwater Quantity
 - 8.1.2 Impacts on Groundwater Quality

- 8.1.3 Groundwater Management
- 8.2 Operational phase
 - 8.2.1 Impacts on Groundwater Quantity
 - 8.2.2 Impacts on Groundwater Quality
 - 8.2.3 Impacts on Surface Water
 - 8.2.4 Groundwater Management
- 8.3 Decommissioning phase
- 8.4 Post-mining phase
 - 8.4.1 Groundwater Quantity
 - 8.4.2 Groundwater Quality
 - 8.4.3 Cumulative Impacts
 - 8.4.4 Groundwater Management
- 9. Groundwater monitoring system**
 - 9.1 Groundwater monitoring network
 - 9.1.1 Source, plume, impact and background monitoring
 - 9.1.2 System response monitoring network
 - 9.1.3 Monitoring frequency
 - 9.2 Monitoring parameters
 - 9.3 Monitoring boreholes
- 10. Groundwater Environmental Management Programme**
 - 10.1 Current groundwater conditions
 - 10.2 Predicted impacts of facility (mining)
 - 10.3 Mitigation measures
 - 10.3.1 Lowering of groundwater levels during facility operation (Mining/Industry/ Wastewater treatment plant, etc.
 - 10.3.2 Rise of groundwater levels post-facility operation (Mining/Industry/ Wastewater treatment plant, etc.
 - 10.3.3 Spread of groundwater pollution post- facility operation (Mining/Industry/ Wastewater treatment plant, etc.
- 11. Post Closure Management Plan**
 - 11.1 Remediation of physical activity
 - 11.2 Remediation of storage facilities
 - 11.3 Remediation of environmental impacts
 - 11.4 Remediation of water resources impacts
 - 11.5 Backfilling of the pits.
- 12. Conclusion and Recommendations**

Appendix Cv: MINE CLOSURE/REHABILITATION PLAN

- 1. Introduction**
- 1.1 Background
- 1.2 Objectives of report
- 2. Project Description**
- 2.1 Locality
- 2.2 Environment
- 2.3 Community
- 2.4 Mine plan and infrastructure
- 3. Legal obligation and comments**
- 3.1 Legislation
- 4. Closure planning**
- 4.1 Site-specific closure and activity
- 5. Rehabilitation and closure activities**
- 5.1 Progressive rehabilitation
- 5.2 Decommission and establishment
- 6. Maintenance and monitoring**
- 6.1 Vegetation and establishment and soil nutrients
- 6.2 Groundwater monitoring
- 6.3 Surface water monitoring
- 6.4 Record-keeping and reporting
- 7. Rehabilitation and Closure Annexure**
- 8. Detailed closure costing**

PUBLIC PARTICIPATION REPORT

- 9. Introduction**
- 10. Objectives of the public participation**
- 11. Identification of interested and affected parties**
- 12. Notification of interested and affected parties**
- 12.1 Method of notification
- 12.2 Proof of notification
- 13. Notification of interested and affected parties of reports and other studies**
- 14. Interested and affected parties**
- 14.1 Access and opportunity to comment on all written submissions
- 14.2 Response to comments received: feedback to interested and affected parties
- 14.3 Disclosure of interested and affected parties interests
- 14.4 Notifying interested and affected parties of the decision
- 15. Record of issues raised**
- 16. Addressing the comments and concerns raised by the interested and affected parties**
- 17. Conclusions and recommendations**

Appendix Cvi: CIVIL DESIGN AND METHOD STATEMENT

R267 REQUIREMENTS FOR CIVIL DESIGN DRAWINGS AND REPORT FROM APPLICANT:

Proto CMA / CMA:		
Tel:(w)(cell) E-Mail:		
Project Title:		
District/Municipality: Property:		
<u>Requirements</u>	<u>Submitted</u>	<u>Details</u>
Water uses applicable in terms of Section 21 (NWA: Act 36 of 1998)		Section 21:
Design report and drawings signed by PrEng		Reg No.
ECSA registration of engineer confirmed		
Site geology summarized		
Site geohydrology report attached		
WUL 21 f, g & j uses: Waste classification type (Norms and Standards, R. 635 August 2013) applicable		Type 0/1/2/3/4
Life span for the proposed activity		Years:
Signature of Applicant		Date

REQUIREMENTS FOR CIVIL DESIGN DRAWINGS FOR SECTION 21(c) and (i) WATER USE

Start and end co-ordinates in decimal degrees using WGS-84 system
Dimensions: length across watercourse, breadth and height of structure or pipe diameter. Height of pipe or conveyor above ground/base flow of watercourse.
Materials and construction methods as applicable
Flood capacity e.g. 1:50 year
Floodline: 1:50 and 1:100 pre- and post-development
Energy dissipation
Erosion and sediment controls
Scour protection
Pollution controls e.g. dog housing on conveyor, collection sumps at pipeline crossings
Post construction rehabilitation

METHOD STATEMENT

Drawn up by the project engineer on how construction and post construction rehabilitation will be implemented to minimise impacts to the water resource. There is no prescribed format but aspects to be considered include the following:

- The Method Statement should talk to the identified impacts e.g. describe how a wetland is crossed.
- Construction methodology and materials used should be described.
- The stormwater management aspects should focus on the construction phase e.g. installation of trench breakers to prevent donga formation).
- The post construction rehabilitation plan should include paper trail aspects e.g. maintaining a photographic record.